SECTION 01 11 00.1

SUMMARY OF THE WORK

PART I - GENERAL

1.01 SECTION INCLUDES

A. Description of the Work

B. Design-Builder Warrants

C. Design-Build Contract Document Intent and Relationships

D. University Furnished/Design-Builder Installed Products

E. University Furnished/University Installed Products

F. Concurrent Work Under Separate Contracts

G. Site Condition Survey and Protection of Existing Improvements

H. Design-Builder Use of Site and Premises

I. University Beneficial Occupancy (if applicable)

J. Project Phasing

1.02 DESCRIPTION OF THE WORK

A. Project is titled: PHARMACY MAIN HOSPITAL PYXIS RECONFIGURATION

B. University Project No.: 9557640

C. Project is located at UC Davis Medical Center 2315 Stockton Blvd., UC Davis Health, Sacramento, California, as shown on the vicinity map.

D. Design and Construction Documents, refer to Phases Sub-section 1.11: Design-Builder shall design and provide architectural/engineering services for a complete Project including but not limited to the preparation of Design Documents, Construction Documents as well as Specifications. Design-Builder shall meet the professional licensing registration requirements of the State of California. The Design-Builder shall design the Project in compliance with applicable requirements of federal and state laws, codes, rules, regulations, ordinances, and standards.

E. Refer to the Design-Build Contract Document Scope and Requirements including but not limited to the items indicated below.

1. Refer to other scope and work indicated in the Bridging Documents provided by the University.

F. Construction Work: The Work shall include all, labor, materials, taxes, fees, transportation, tools, equipment, testing, inspection, commissioning and services required by the Design-

Build Contract Documents to construct the Work for the Contract Sum and within the Contract Time.

G. Project Consists of replacement of Twenty-two (22) Pyxis medication dispensing units on six floors of the Davis Tower. Typically, project replaces two (2) existing medication dispensing units with three (3) new medication dispensing units.

Work is in occupied patient floor nurse stations. Take care to minimize impact to adjacent operations. Each floor has 4 nurse stations. A single nurse station, at each floor, to be impacted at one time. Work will be performed between the hours of 7:00 a.m. and 5:00 p.m. Some off-hours work for shutdowns or testing should be assumed.

H. Special Constraints and Criteria:

1. Refer to Section 011400 Work Restrictions for dates and hours when the building is occupied and operational, and work-shift hour requirements and restrictions.

2. Noise Mitigation shall be required when the building is occupied.

3. Egress shall not be restricted or impacted unless scheduled when the building is not occupied.

1.03 DESIGN-BUILDER WARRANTS

A. Design-Builder warrants that it is skilled and experienced in the use and interpretation of Contract Documents such as those included in the documents for this Contract. The Design-Builder further warrants that it has carefully reviewed the Contract Documents for this Work and has found them to be free of conflicts and sufficient for purpose of defining the project scope.

B. Design-Builder warrants that it has inspected the Project Site and based on these observations, has satisfied itself as to the nature and location of the Work; and any special conditions likely to be encountered at the site which may affect the performance of the Work.

C. Design-Builder warrants that its Proposal is based solely on the Design Build Contract Documents provided, its own observations, and written explanations and interpretations obtained from University's Representative and not on any explanation or interpretation, oral or written, from any other source.

1.04 DESIGN-BUILD CONTRACT DOCUMENT INTENT AND RELATIONSHIPS

A. Design-Build Contract Documents Intent: Shall be as indicated in Sub-Section 1.02 above.

B. The Design-Builder is responsible for the development of the Design and Construction Documents indicated in Phase 1 and 2 as well as other locations in the Design Build Contract Documents. These documents may be referred to as the Contract Documents or the Design Build Contract Documents interchangeably.

C. Relationship of Design-Build Contract Documents: Drawings, Specifications and other Design-Build Contract Documents in the Contract are intended to be complementary. What is required by one shall be as if required by all. What is shown or required, or may be reasonably inferred to be required, or which is usually and customarily provided for similar work, shall be included in the Work.

D. The Design-Builder is responsible for any exclusions, omissions or errors in the Contract Documents prepared by the Design-Builder. The Design-Builders shall provide and/ or correct all work associated with the exclusions, omissions or errors at no additional cost or time to the University.

E. Discrepancies in Contract Documents: In the event of error, omission, ambiguity or conflict in the Contract Documents, Design-Builder shall bring the matter to University's Representative's attention in a timely manner, for University's Consultant's determination and direction in accordance with provisions of the General Conditions of the Contract.

1.05 UNIVERSITY-FURNISHED, CONTRACTOR-INSTALLED (UFCI) PRODUCTS

A. University-Furnished Products: University will furnish, for installation by Design-Builder, products which may be identified in the Contract Documents as UFCI (University-Furnished/Design-Builder-Installed).

1. Pyxis Medication Dispensing Units anchor brackets – Contractor Installed

B. Relationship to Work Under the Contract: Work under the Contract shall include all provisions necessary to fully incorporate such products into the Work, including, the design and installation of all infrastructure and components including but not limited to fasteners, backing, supports, piping, conduit, conductors from service to point of connection, and field finishing, as shown on the Drawings and/or specified herein. See Section 013100.1 - COORDINATION for additional requirements.

1.06 UNIVERSITY-FURNISHED, UNIVERSITY-INSTALLED (UFUI) PRODUCTS

A. University-Furnished Products: University will furnish, for installation by Design-Builder, products which may be identified in the Contract Documents as UFUI (University-Furnished /University-Installed).

1. Pyxis Medication Dispensing Units – Installation by Owner

B. Relationship to Work Under the Contract: Work under the Contract shall include all provisions necessary to provide all rough-in requirements into the Work, including the design and installation of all infrastructure and components including but not limited to fasteners, backing, supports, piping, conduit, conductors from service to point of connection, and field finishing, as shown on the Drawings and/or specified herein. See Section 013100.1 - COORDINATION for additional requirements.

1.07 SITE CONDITION SURVEY & PROTECTION OF EXISTING IMPROVEMENTS

A. Site Condition Survey: Prior to commencing work, the Design-Builder, University's Representative, and other University representatives shall tour the Project site together to examine and record the existing condition of site, adjacent buildings, and improvements. This record shall serve as a basis for determination of damage (if any) due to the construction process. The record shall be signed by all parties participating in the tour.

B. Protection of Existing Improvements: Locate all known existing utilities prior to proceeding with construction. Existing utilities shall be kept in service where possible and protected by the Design-Builder from damage. If any structure or utility is damaged, take immediate action to ensure the safety of persons and University property and effect repair. If previously undiscovered structures or utilities are encountered, refer to Article 3 of the General Conditions and request University's Representative to provide direction on how to proceed with the work. Cracks, sags or damage to adjacent structures or improvements not noted in the original survey shall be reported to University's Representative.

C. University does not normally charge for its shutdown support services. However, if poor planning or execution of a shutdown by Design-Builder causes excessive time and effort for University, University reserves the right to back charge Design-Builder for additional work.

1.08 DESIGN-BUILDER USE OF SITE AND PREMISES

A. Site Access: Limit access to site as indicated on the drawings. If routes and access points are not indicated, access shall be as directed or approved by University's Representative.

B. Hours of Operation: Construction activities are limited to the hours of 7:00 a.m. to 5:00 p.m., Monday through Friday. Prior University approval is required for Design-Builder construction work at any other time or day.

C. Construction Limit: Limit construction activities to areas indicated on Drawings as Project Area or, if not indicated, to areas immediately adjacent to buildings and as necessary for

immediate construction or utility services and sitework, See Section 015100 - TEMPORARY UTILITIES for additional requirements.

D. Utility Outages and Shutdowns: Schedule utility outages and shutdowns to times and dates acceptable to University's Representative. Duration of outages and shutdowns shall not hinder University normal business operations. Provide fourteen (14) calendar days' notice of all utility outages and shutdowns.

1.09 PROJECT PHASING

A. The WORK OF THIS contract is divided into three (3) Phases. The Phases are sequential and requires written approval by the University to proceed to the next Phase.

1. Phase 1 - Design Development. The Work of Phase I consists of the development and preparation of Schematic Design and Design Development Documents including review submittals and design review by the University and AHJ. Phase 1 includes the Conformation of the Bridging Documents.

2. Phase 2 - Construction Documents. The Work of Phase 2 consists of the development and preparation of the Construction Documents including review submittals and design review by the University and AHJ. Phase 2 may contain early Product Submittals and Shop Drawings for long lead items, site work or work to start immediately at the start of Phase 3 to meet the Project Schedule.

3. Phase 3 - Construction Phase. Contractor to phase work to complete within 12 months of HCAI permit approval. Work multiple floors at once. Impact a single nurse station per floor at any given time. Temporary construction to be eliminated or minimized.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION – Not applicable to this Section

END OF SECTION 01 11 00.1

SECTION 01 25 00.1

CLARIFICATION/INFORMATION PROCEDURES

PART I - GENERAL

1.01 DESCRIPTION

A. This Section contains the procedures to be followed by the Design-Builder for submitting a Request for Information (RFI) during the Design Phase(s) and the Construction Phase. The review and response responsibility and requirements are different for each Phase.

B. The RFI procedure is a formal means of communicating, sharing information and tracking the process for the Design-Builder and the University's Representative.

C. Section Includes

1. RFI Administrative requirements

2. RFI Procedures

3. RFI Execution

1.02 RELATED DOCUMENT SECTIONS

A. Conditions of the Contract: Governing requirements for changes in the Work, in Contract Sum and Contract Time.

B. Section 016100 – PRODUCT REQUIREMENTS: Product options, substitutions, omissions, and improper descriptions.

1.03 ADMINISTRATIVE REQUIREMENTS FOR DESIGN PHASE(s) RFIs AND CONSTRUCTION PHASE RFIs

A. Design Phase RFIs: During the Design Phase(s) the Design-Builder may submit RFIs to obtain interpretation or clarification of the Design Build Documents provided with the Design Build Agreement. The University's Representative shall review and respond to the Design Phase RFIs providing guidance to the Design-Builder.

1. Prior to submitting a Design Phase RFI, the Design-Builder shall evaluate, verify, and edit all questions provided by the Design-Builder's Subcontractors prior to preparing a Design Phase RFI for submittal to the University's Representative for review. The Design Build shall not just pass on the Subcontractor's questions.

2. Design Phase RFI's that are questions by the subcontractors about the Design-Builder's Design Submittals will be responded to by the Design-Builder and copied to the University at the time of the response.

B. Construction Phase RFIs: During the Construction Phase the Design-Builder may submit internally to obtain specific information including interpretation and clarification of the Contract Documents prepared by the Design-Builder; or identify conflicts exclusions, omissions or errors in the Contract Documents prepared by the Design-Builder.

1. The Design-Builder shall review and respond to the Construction Phase RFIs and shall be responsible for resolving the issue, any corrective Work and cost required by the Construction Phase RFI. The proposed response and solution must meet the intent of the Design Build Contract Documents.

2. The Design-Builder shall provide a copy to the University's Representative at the time of the response of the Construction Phase RFIs for information only; the University's Representative is not responsible for reviewing or responding to the Construction Phase RFIs except for the following conditions.

a. Exception 1: RFIs indicating unforeseen existing conditions, the University Representative shall review and respond to the RFI.

b. Exception 2: In the case the Design-Builder's response for the RFI deviates or in noncompliance with the intent of the Design Build Contract Documents, the University Representative shall inform the Design-Builder in writing and respond to the RFI. Refer to 3.01, C. and D. of this Section for additional information regarding the University's interpretation or decision of RFIs.

C. University reserves the right to comment on any RFI or RFI response between Design-Builder and Subconsultants or Subcontractors

D. Responsible Person for Design-Builder: Submit name of the individual authorized to receive Requests for Information documents, and who is responsible for forwarding Request.

E. RFI Format: Submit all Requests for Information on the form attached at the back of this Section, or electronic and/or web-based construction administration software provided or accepted by the University.

1.04 RFI PROCEDURES

A. RFI Format, Numbering and Subject:

1. RFI Format: Submit all requests for clarification or additional information in writing to University's Representative using the RFI Request for Information form provided at the back of this Section or obtained from University's Representative.

2. RFI Numbering: Number RFI's sequentially. Follow RFI number with sequential alphabetical suffix for resubmissions. For example, the first RFI is numbered "001". The second RFI is numbered "002" and so on. The first resubmittal of RFI "002" will be numbered "002a".

3. RFI Subject: Limit each RFI to one (1) subject only.

4. Maintain a log of all RFIs for the project.

    a. Have the ability to filter all RFIs by:

        1) University vs. Design-Builder Internal RFIs

        2) Initiated by:

            a) By Entity and Author.

        3) By all associated dates.

        4) Specification Section number.

B. RFI Submittal conditions:

1. Failure to provide proper information: RFIs will not be recognized or accepted if, in the opinion of University's Representative, one of the following conditions exist:

    a. Design-Builder submits the RFI as a request for substitution. Design-Builder shall follow the requirements of Section 016100 PRODUCT REQUIREMENTS.

    b. Design-Builder submits the RFI as a Submittal.

    c. Design-Builder submits the RFI as a Design Build Contract Document discrepancy or omission without through review of the Documents (Capricious submission).

    d. Design-Builder submits the RFI as Design Build Contract Document discrepancy or omission without a comprehensive examination and coordination of existing conditions above and below the ceiling.

    e. Design-Builder submits the RFI assuming portions of the Design Build Contract Documents are excluded or by taking an isolated portion of the Design Build Contract Document in part rather than in whole.

    f. Design-Builder submits the RFI in an untimely manner without proper coordination and scheduling of Work of other Trades.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION

3.01 EXECUTION OF RFIs

A. Email the University's Representative the RFIs. Emailed Design Phase RFI requests received after normal business hours and/or received on non-normal workdays, as defined in Specification Section 013100.1 –COORDINATION, Item 1.07.F.4.A will begin notification time starting at 7:00 a.m. the following workday.

B. Response Time: Request clarifications or information immediately upon discovery of need. Submit all RFIs in a timely manner allowing full response time to avoid impacting Contract Schedule.

1. University's Representative, whose decision will be final, shall resolve issues and respond to questions of Design-Builder if the proposed solution is in noncompliance with the intent of the Design Build Contract Documents , in most cases, within fourteen (14) calendar days after receiving the Design-Builder's response. Actual time may be lengthened for complex issues, or shortened for expedited situations, as mutually agreed in writing.

2. Upon receipt of the University Representative's written notice the Design-Builder's RFI response is in noncompliance with the intent of the Design Build Contract Documents and prior to receipt of the RFI interpretation response from University, the Design-Builder proceeds with effected Work at own risk. Any portion of the Work not constructed in accordance with University interpretation, clarification, instruction or decision is subject to removal and replacement at Design-Builder's expense.

C. Failure to Agree: In the event of failure to agree to the scope of the Contract requirements, Design-Builder shall follow procedures set forth in Article 4 of the General Conditions of the Contract.

END OF SECTION 01 25 00.1

REQUEST FOR INFORMATION

Project#: _____ **Project Title:** _____

RFI #: _____ **Date:** _____ **HCAI #:** _____

UC Davis Health Facilities Design & Construction 4800 2nd Avenue, Suite 3010, Sacramento, CA 95817 **Attn.: Project Manager** P: 916-734-#### C: ###-###-#### Email: ########@ucdavis.edu	From:	

SUBJECT: _____

SPEC SECTION/DRAWING #: _____ **PARA:** _____ **DETAIL:** _____

RM # _____ **GRID #** _____

TRANSMITTAL RECORD	Requestor to FD&C	FD&C to A/E	A/E to FD&C	FD&C to Requestor	Notes
Date Submitted					

INFORMATION NEEDED: _____

CONTRACTOR'S PROPOSED RESOLUTION: _____

REQUESTOR SIGNATURE: _____ **REPLY REQUIRED BY:** _____

☐ **ATTACHMENTS:** _____

REPLY: _____

REPONDER SIGNATURE: _____ **DATE:** _____

UNLESS OTHERWISE INDICATED ABOVE, THE REPLY TO THIS RFI IS NOT INTENDED TO BE A CHANGE DIRECTIVE. SHOULD THE CONTRACTOR, SUBCONTRACTOR, OR SUPPLIERS FEEL THAT THE REPLY WILL IMPACT THE PROJECT COST OR SCHEDULE; IT SHOULD IMMEDIATELY BE CONVEYED TO THE UNIVERSITY'S FD&C PROJECT MANAGER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

COPIES: ☐University ☐ CONSULTANTS ☐_____ ☐_____ ☐_____ ☐ FILE

SECTION 01 25 50.1

CONTRACT MODIFICATION PROCEDURES

PART I - GENERAL

1.01 SECTION INCLUDES

A. Change Order Administrative Requirements

B. Documentation of Change in Contract Sum and Contract Time

C. Change Procedures

D. Field Orders

E. Stipulated Sum Change Orders

F. Unit Price Change Orders

G. Time and Material Change Orders

H. Cost Proposals and Supporting Documentation

I. Execution of Change Orders

J. Reconciliation of Change Orders

1.02 RELATED DOCUMENT SECTIONS

A. General Conditions of the Contract: Governing requirements for changes in the Work, in Contract Sum and Contract Time.

B. Section 012500.1 – CLARIFICATION/INFORMATION PROCEDURES

C. Section 012900.1 – MEASUREMENT AND PAYMENT: Applications for Payment.

D. Section 016100 – PRODUCT REQUIREMENTS: Product options, substitutions, omissions and improper descriptions.

E. Section 017700.1 – CLOSEOUT PROCEDURES: Project record documents.

1.03 DEFINITIONS

A. Total Wage Rate: Base rate paid to the worker, including his/her fringe benefits, workman's compensation insurance and subsequent payroll taxes paid by the employer.

1. Use Wage Rate Calculator issued with Division One.

2. Projects in the University Controlled Insurance Program (UCIP) should not include workman's compensation in the wage rates.

B. Consumables: Material purchased in bulk and not expressly accounted for in the listed materials on a change order request. These include but are not limited to, rags, washers, screws, nuts, small bolts, lubricants, cleaning materials, pens, chalk, pencils, tie wire, caution tape, etc. Compensation for consumables shall be incorporated as a 3% percentage increase on direct material costs for trades where these items are routinely used.

C. Non-working Supervision: Non-working supervision is not allowed to be included on a change order per GC article 7.3.3.

1.04 SUBMITTALS

A. Submit the items listed below prior to submitting the 2nd Application for Payment.

1. Total Wage Rates: Provide wage rates for each key worker of the Design-Builder and all Subcontractor tradespeople using the University's digital form for review and in compliance with the General Conditions Article 7 for approval by the University. Approved rates will be used in the Exhibit 7 Labor Rate Breakdown forms submitted with each Cost Proposal.

1.05 CHANGE ORDER ADMINISTRATIVE REQUIREMENTS

A. The Design-Builder shall not provide or submit a request for Change or Change Order that includes the following items indicated in 1 through 4 below; and shall be considered in noncompliance with the requirements of 012550.1. Such proposed request for change or Change Orders shall not be recognized or accepted by the University.

1. Any change due to exclusions, omissions or errors in the Contract Documents prepared by the Design-Builder. The Design-Builder is solely responsible for exclusions, omissions or errors in the Contract Documents prepared by the Design-Builder. The Design-Builder shall provide and/ or correct all work associated with the exclusions, omissions or errors at no additional cost or time to the University.

2. Any change due to the Design-Builder excluding or omitting requirements of the applicable Codes, Laws, Standards and Ordinances including the Campus Design Guide.

3. Delays or additional time caused by Design-Builder.

4. University submittal review comments indicating but not limited to the following.

a. Work in noncompliance with the Design-Build Contract Documents or Campus Design Guide.

b. Products, materials, equipment or manufacturers not meeting the minimum standards, attributes, characteristics, features and quality as indicated in the Design-Build Contract Documents or Campus Design Guide.

c. Missing or incomplete information.

d. Substitutions for products, materials, equipment, or manufacturers indicated in the Design-Build Contract Documents.

B. Responsible Person for Design-Builder: Submit name of the individual authorized to receive construction change documents, and who is responsible for informing others in Design-Builder's employ of subcontractors of changes in the work.

C. Exhibit 7 of the Contract includes the following Forms:

1. COST PROPOSAL Form

2. SUPPORTING DOCUMENTATION FOR THE COST PROPOSAL SUMMARY Form

3. CHANGE ORDER Form

4. REPORT OF SUBCONTRACTOR INFORMATION Form

1.06 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND CONTRACT TIME

A. Documentation of Changes in Contract Sum and Contract Time: Provide full information required for evaluation of proposal, of proposed changes and to substantiate costs of changes in the Work.

1. Maintain detailed records of Work completed on time and material basis.

2. Document each quotation for a change in Contract Sum and Contract Time with sufficient data to allow evaluation of the quotation.

B. Additional Data: Upon request, provide additional data to support computations.

1. Quantities of products, labor, and equipment.

2. Taxes, insurance, and bonds.

3. Overhead and profit.

4. Justification for change in Contract Time, if claimed.

5. Credit for deletions from Contract, similarly documented.

1.07 CHANGE PROCEDURES

A. University's Supplemental Instructions: Minor changes in the Work, not involving adjustments to the Contract Sum or Contract time, as authorized by the General Conditions of the Contract, may be presented using Supplemental Instructions or correspondence containing similar information.

B. University Initiated Changes: A Request for Proposal may be issued by University's Representative, which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications.

1. The Request for Proposal may include an estimate of additions or deductions in the Contract Sum or Contract Time for executing the change and may include stipulations regarding overtime work and the period of time the requested response from the Design-Builder shall be considered valid.

2. Design-Builder shall prepare and submit a response to the Request for Proposal within fourteen (14) calendar days.

C. Design-Builder initiated Changes: Design-Builder may propose a change by submitting a request for change to University's Representative, describing proposed change and its full effect on the Work.

1. Include statement describing reason for change, and full description of effects on Contract Sum, Contract Time, related Work and work being performed under separate contracts.

2. Requests for substitutions shall be included under this category, with procedures as specified in Section 016100 – PRODUCT REQUIREMENTS.

1.08 FIELD ORDERS

A. Field Order: University's Representative may issue a Field Order, signed by University's Representative, instructing the Design-Builder to proceed immediately with a change in the Work, for subsequent inclusion in a Change Order.

1. The document will describe changes in the Work, and will designate the method of determining what, if any, change is due in the Contract Sum or the Contract Time.

2. Promptly execute the change in the Work indicated in the Field Order prior to acceptance of a Cost Proposal for the Work by the University.

B. Cost and Time Resolution: Costs and time adjustments for changes in the Work shall be per provisions of the General Conditions of the Contract, unless otherwise agreed to prior to issuance.

C. No Cost Field Order: University's Representative may issue a "Field Order", signed by University's Representative, instructing the Design-Builder to proceed immediately with Work that is in noncompliance with the Design-Build Contract Documents including but not limited to Work requiring correction, repair, or replacement. The Design-Builders shall provide this corrective Work at no additional cost or time to the University.

1.09 CHANGE ORDERS

A. Stipulated Sum Change Orders: Design-Builder's response to Request for Proposal or Field Order will be considered and a mutually acceptable adjustment in Contract Sum and Contract Time will be determined. Change Order for this stipulated amount will be prepared by University's Representative for execution by University and Design-Builder.

B. Unit Price Change Order: Change Order will be prepared by University's Representative for execution by University and Design-Builder, based on mutually acceptable quantities and pre-determined unit prices.

1. For unit cost or quantities not pre-determined, the Work shall be accomplished under a Stipulated Sum Change Order, if there is no dispute over the estimated or stipulated maximum cost and time for the change.

2. If the amounts are not defined or are disputed, a Field Order will be prepared and issued by University's Representative.

C. Time and Material Change Orders: As directed for changes for where amounts are not defined or are disputed, Design-Builder shall execute the Work, keeping accurate records of time, both labor and calendar days, and cost of materials.

1. Design-Builder shall prepare and submit an itemized account and supporting data after completion of the change, within the time limits indicated in the Conditions of the Contract.

2. University's Representative will determine the change allowable in Contract Sum and Contract Time, as provided elsewhere in the Contract Documents, and make recommendation to University for acceptance of Change Order.

3. Design-Builder shall provide full information as required and requested for evaluation of proposed changes, and to substantiate costs for changes in the Work.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION

3.01 CONTENT OF COST PROPOSALS

A. Cost Proposals shall include the following:

1. Detailed description of the work involved including:

a. What work is being performed?

b. Where the work is performed?

c. When the work was performed if already completed?

d. When the work is scheduled to be performed if not yet completed?

e. Why this work is a change to the contract?

2. Detailed description of any time impacts associated with the work; refer to General Conditions, paragraph 8.4.

3. Materials

    a. Material shall be submitted at the cost paid by the Design-Builder.

        1) Invoices may be required to validate that it meets the following criteria:

            a) Invoices may be from different projects if the following conditions are met:

                (1) The Change Request is before the Design-Builder would reasonably have the material on site to accomplish the COR.

                (2) Recent, within last 6 months.

                (3) There must be at least enough of the material in question to accomplish the work in the proposed Change Request.

            b) The invoice shall not be modified from the version provided by the vendor.

4. Labor unit breakdown backed up by an industry standard (NECA for electrical, MCAA for plumbing and mechanical, SMACNA for mechanical, Etc.) These standards shall be used at their base rate, with no added percentages nor adjustments. This has been found to be a fair representation of the man-hours required to do these types of work.

5. Wage rate back up matching the submitted back up as described in 1.03.A.

B. Submittal of a Cost Proposal using the Cost of the Work plus Design-Builder Fee described in General Conditions paragraphs 7.3.5 and 7.3.6 shall include the following items in addition to those listed above:

1. Field Order instructing the change. Only a field order may instruct work to be completed using this basis.

2. Material invoices shall be provided for any item used in Extra Work.

3. Job site work tags identifying daily labor and material usage shall be submitted with:

    a. Specific description of the work performed on that tag.

    b. Identification of large equipment used

    c. Identification of labor class for each individual

    d. Location - room number, gridline or distinct location.

    e. Signed by the Design-Builder and University’s Representative.

C. Any and all coordination required for implementation of a change into the work, documents, or model is and shall be considered part of the allowable markups provided in General Conditions paragraphs 7.3.3.1-18 and 7.3.4.

3.02 EXECUTION OF CHANGE ORDERS

A. Execution of Change Orders: After the University's Representative has accepted the Change Order Proposal; the University's Representative shall prepare Change Order documents for signature by parties as provided in the Conditions of the Contract.

3.03 RECONCILIATION OF CHANGE ORDERS

A. Schedule of Values: Promptly revise the Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjustment to the Contract Sum.

B. Schedules: Upon completion of the Change Order, promptly revise progress schedules to reflect changes in Contract Time, revising sub-schedules to adjust time for other items of Work as may be affected by the change. Submit revised schedules with next Application for Payment.

END OF SECTION 01 25 50.1

SECTION 01 29 00.1

MEASUREMENT AND PAYMENT

PART I - GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and presentation of Application for Payment.

B. Procedures for preparation and presentation of Schedule of Values.

1.02 RELATED DOCUMENTS AND SECTIONS

A. GENERAL CONDITIONS of the Contract: Progress Payments and Final Payment.

B. Section 013200.1 – CONTRACT SCHEDULES

C. Section 017700.1 – CLOSEOUT PROCEDURES

D. Section 017800.1 – CLOSEOUT SUBMITTALS

1.03 PAYMENT APPLICATION FORM

A. Payment Application Form: Prepare Applications for Payment using Exhibit 4 provided in the Contract.

1.04 SCHEDULE OF VALUES

A. Coordination. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Contract Schedule and as directed by the University's Representative.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Design-Builder's Contract Schedule.

b. Application for Payment form.

c. List of Design Submittals

d. List of Subcontractors.

e. List of products (where/if appropriate).

f. List of principal supplier and fabricators.

g. Submittal Schedule

h. Construction Cost Breakdown Sheet.

2. Submit the Schedule of Values to the University's Representative at the earliest feasible date, but in no case later than 7 calendar days before the date scheduled for Submittal of the Initial Application for Payment.

B. Format and Content. Use the Specification Table of Contents as a guide to establish the format for the Schedule of Values.

1. Include the following Project identification on the Schedule of Values:

a. Project name and location.

b. Name of the University's Representative.

c. Project Number.

d. Contractor's name and address.

e. Date of Submittal.

2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

a. Generic name.

b. Performance Specification or University Specification section.

c. Name of Subcontractor.

d. Name of manufacturer or fabricator.

e. Name of supplier (if appropriate).

f. Change orders (number) that have affected value.

g. Dollar value. (Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.)

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.

4. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.

5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

    a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.

6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. Design-Builder's General Conditions overhead and profit shall be a separate line item per month.

8. Allowances (if applicable). Show the line-item value of allowances.

1.05 PREPARATION OF APPLICATIONS

A. Preparation of Applications for Payment: The following requirements supplement the provisions of the General Conditions of the Contract. Refer to the GENERAL CONDITIONS OF THE CONTRACT.

1. Present required information in PDF electronic file on the required forms. Media-driven forms are acceptable.

2. Execute certification by electronic signature of authorized officer of the Design-Builder.

3. Use data from the approved Schedule of Values. Provide dollar value in each column of application for each line item and portion of Work performed and for products stored, if permitted.

a. List value of each major item of Work and each subcontracted item of Work as a separate line item to serve as a basis for computing values for progress Payments. Round off values to nearest dollar. Listed items of work shall be identified by Specification Section number.

b. List products and operations of each major subcontract as separate line item.

c. Include Work Allowances (if any) within line item of Work.

d. Coordinate percentage complete with Progress Schedule.

e. Provide separate line items for each area of work such as but not limited to floors, zones, wings, or other areas that can be clearly identified.

f. The sum of values listed shall equal total Contract Sum.

4. List each authorized Change Order as an extension on the continuation sheet, listing the Change Order number and dollar value as for an original item of Work. Change Order shall be broken down same as Application for Payment.

5. No Change Order shall be included with Application for Payment until approved in writing by University and University's Representative.

6. Refer to 1.05 for other items required for the Application for Payment.

B. Final Payment: Prepare Application for Final Payment as specified in Section 017700 – CLOSEOUT PROCEDURES.

1.06 SUBMISSION OF APPLICATIONS FOR PAYMENT

A. Submission of Applications for Payment: The following requirements supplement provisions of the General Conditions of the Contract. Refer to the GENERAL CONDITIONS OF THE CONTRACT.

1. Submit one (1) PDF electronic file of each Application for Payment with electronic signature. Round values to nearest dollar or as specified for the Schedule of Values.

2. Submit an updated Construction Progress Schedule with each Application for Payment and specified in Section 013200 – CONTRACT SCHEDULES.

3. Submit one (1) PDF electronic file of Schedule of Values in accordance with the General Conditions of the Contract. Form and content shall be acceptable to the University. Transmit under PDF electronic transmittal letter. Identify University's Project Name and University's Project Number.

a. List installed value of each major item of Work and for each subcontracted item of Work as a separate line item to serve as a basis for computing values for Progress Payments. Round off values to nearest dollar. Listed items of Work shall be identified by Specification section number. The listed value will be based on a percent-complete basis of each line item.

b. For each major subcontract, list products and operations of that subcontract as separate line items.

c. Coordinate listings with Progress schedule. Design-Builder’s project General Conditions plus overhead and profit shall be a separate line item in the Application for Payment; and be divided in an equal amount for each month part of the Contract Time period.

1) At 50 percent completion of the work or at other times the University's Represented deems appropriate the University's Representation may request the monthly amount of overhead and profit be adjusted if the contract schedule indicates going beyond the Contract End Date.

d. For items on which payments will be requested for on-site stored products, list sub-values for cost of on-site stored products with taxes paid. If stored products are not on-site, they must be stored in a bonded warehouse or location approved by the University's Representative prior to including on the Application for Payment.

e. Submit a sub-schedule for each separate Phase of Work specified in Section 011100. Include scheduling of sequences within each phase indicated on the drawings.

f. The Sum of values listed shall equal total Contract Sum.

g. When University's Representative requires substantiating information, submit data justifying line-item amounts in question.

h. Provide one (1) PDF electronic file of data with cover letter for each copy of Application. Show Application number and date, and line item by number and description.

4. Submit Applications for Payment, Continuation Sheets and Schedule of Values under PDF electronic transmittal letter. Design-Builder shall identify all payment application documents by University's Project Name and University's Project Number.

1.07 SUBSTANTIATING DATA

A. University's Representative may request substantiating information. Submit data reconciling line-item amounts in question.

B. Provide one (1) PDF electronic file of data with cover letter for each copy of submittal. Show Application number including date and line item by number with description.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION – Not Applicable to this Section

END OF SECTION 01 29 00.1

SECTION 01 31 00.1

COORDINATION

PART I - GENERAL

1.01 SECTION INCLUDES

A. Project Meetings

B. Submittals Requirements

C. Design-Builder Coordination

D. Coordination of Subcontractors and Separate Contracts

E. University Criteria

1.02 RELATED REQUIREMENTS

A. Section 011100.1– SUMMARY OF THE WORK: Description of Contract Documents.

B. Section 013200.1 – CONTRACT SCHEDULES

C. Section 013300.1 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

D. Section 013500 – SPECIAL PROCEDURES: Interim Life Safety Measures (ILSM).

E. Section 014500.1 – QUALITY CONTROL

F. Section 014550 – INSPECTION OF WORK

G. Section 015100 – TEMPORARY UTILITIES

H. Section 015200 – CONSTRUCTION FACILITIES

I. Section 015500 – VEHICULAR ACCESS AND PARKING: Traffic Regulation.

J. Section 015600 – TEMPORARY BARRIERS, ENCLOSURES AND CONTROLS

K. Section 015610.1 – AIRBORNE CONTAMINANTS CONTROL

L. Section 016100 – PRODUCT REQUIREMENTS

M. Section 017300 – CUTTING AND PATCHING

N. Section 017700.1 – CLOSEOUT PROCEDURES: Coordination of completion reviews, inspections and submission of documents.

O. Section 017800.1 – CLOSEOUT SUBMITTALS

P. Division 21 - Fire Protection Systems.

Q. Division 28 - Fire Alarm Systems

1.03 MEETINGS PHASE ONE and TWO

A. Pre-Design Conference: University's Representative or a Design-Builder designee will administer conference at an agreed upon location for clarification of responsibilities of University and the Design-Builder. The agenda will be prepared by the same and distributed via email a minimum of 72 hours prior to the meeting.

1. Agenda: Pre-Design Conference shall cover the following topics at a minimum:

a. Designation of Key personnel: Designate key personnel and update project directory for University, University's Consultants, Design-Builder, Design-Builder’s Design Professionals and Key Subcontractors

b. Design Schedule: Provide per Section 013200.1. Distribute and discuss initial design phase. Critical design and submittals for major elements of Work, including coordination with all University departments during the design phase of the project. Determine department coordination requirements with University’s Representative.

c. University furnished/Design-Builder installed (UFCI) products, University furnished/ University installed (UFUI) products, and work under separate contracts, by utility agencies, companies and the University. Discuss a plan to coordinate all these items into the design process. Including infrastructure to support them.

d. Project Communication Procedures: Review requirements and administrative requirements per Section 012500.1 for written, electronic and oral communications.

e. Change Procedures: Review requirements and administrative procedures for Change Order Requests, Field Orders, and Change Orders during the Design Phase. Discuss what constitute a change per Section 012550.1.

f. Design Submittals Administration: Provide all Design Submittals per Exhibit 45 Scope of Work. Discuss procedures and format per Section 14500.1

g. Permits and Fees: Review Contract requirements; review schedule and process for obtaining permits and paying fees.

B. Design Phase Progress Meetings: Progress meetings shall be periodically scheduled throughout progress of the Design. Frequency shall be as determined necessary; it is intended progress meetings be held once a week as designated by the University's Representative.

1. Administration: University's Representative or Design-Builder designee shall make physical arrangements for meetings. The agenda will be prepared by the same and distributed via email a minimum of 3 (Workdays) prior to the meeting. Meeting minutes will be taken and distributed with 4 (Workdays)

2. Attendance: Design-Builder's Project Manager and jobsite Superintendent shall attend each meeting. Design-Builder's subcontractors and suppliers may attend as appropriate to subject under discussion. University will have a representative at each meeting. University's Consultants, as appropriate to agenda topics for each meeting and as provided in University/Consultant Agreement, will also attend.

a. Suggested Agenda for Design Phase Progress Meetings:

1) Design Issues

2) BIM Modeling

3) Discipline Coordination

4) Building Code/Fire Marshal Issues

5) Coordination with UC Davis Health Departments

6) UFCI and UFUI products.

7) Requests for Information

8) Short Interval Schedule

9) Potential Design Schedule Delay Issues

10) Payment Applications

11) Miscellaneous Business

12) Other items affecting progress of the Design

3. In addition to meetings listed above, Design-Builder shall hold coordination meetings and design conferences to assure proper coordination of all disciplines.

a. Design Conferences: When required in individual disciplines consultants and contractors, convene for coordination.

1) Require attendance by representatives of firms whose activities directly affect or are affected by the Design being discussed.

2) Review conditions in the model if required to determine

4. Participants at all meetings shall be University's Representatives, Design-Builder, Design Consultants , Subcontractors and others as appropriate.

1.04 MEETINGS PHASE THREE

A. Pre-Construction/Site Mobilization Conference: University's Representative will administer mobilization conference at Project site for clarification of responsibilities of University, University's Representation and Design-Builder, use of site and for review of administrative procedures. Site mobilization conference shall be held within fourteen (14) calendar days of Notice to Proceed for Phase 3, unless otherwise directed by University's Representative.

1. Agenda: Pre-Construction/Site Mobilization Conference shall cover the following topics at a minimum:

a. Special Project Procedures: Implementation of requirements as specified in Section 013100.1 – COORDINATION.

b. Subcontractors List: Provide PDF electronic file. Distribute and discuss list of subcontractors and suppliers.

c. Construction Schedule: Provide per Section 013200.1. Distribute and discuss initial Phase 3 construction schedule and critical work sequencing of major elements of Work, including coordination of University furnished/Design-Builder installed (UFCI) products, University furnished/ University installed (UFUI) products, and work under separate contracts, by utility agencies, companies and the University.

d. Designation of Key personnel: Designate key personnel and update project directory for University, University's Consultants, Design-Builder, major subcontractors, major materials suppliers, serving utility agencies and companies, other contractors performing work under separate contracts and governing authorities having jurisdiction.

e. Project Communication Procedures: Review requirements and administrative requirements for written per Section 012500.1 electronic and oral communications.

f. Change Procedures: Review requirements and administrative procedures for Change Orders, Field Orders, University's Representative's Supplemental Instructions, and Design-Builder's Requests for Information. Discuss what constitute a change per Section 012550.1.

g. Coordination: Review requirements for Design-Builder's coordination of Work; review sequence and schedule for work being performed for University under separate contracts.

h. Submittals Administration: Provide per Section 013300.1 and Section 016100. Review administrative procedures for shop drawings, project data and sample submittals and review of preliminary submittals schedule.

i. Project As-built Documentation: Provide per Section 017700.1 and Section 017800.1. Review requirements and procedures for project As-Built drawings, specifications, and other documents.

j. Construction Facilities and Temporary Utilities: Provide per Section 015100 and Section 015200. Designate storage and staging areas, construction office areas; review temporary utility provisions; review University requirements for use of premises.

k. Materials and Equipment: Review substitution requirements; review schedule for major equipment purchases and deliveries; review materials and equipment to be provided by University (UFCI and UFUI products).

l. Site Access by University's Representative and University's Consultants: Review requirements and administrative procedures Design-Builder may institute for identification and reporting purposes.

m. Testing and Inspection: Provide per Section 014550 and other sections of the Contract. Review tests and inspections by independent testing and inspection agencies, manufacturers, and governing authorities having jurisdiction.

n. Permits and Fees: Review Contract requirements; review schedule and process for obtaining permits and paying fees.

o. Hours of Work and Work Restrictions per Section 011400.

p. Hot Works Permit.

A. Billing Meetings: A billing meeting will be conducted by the University's Representative each month prior to submittal of the Application for Payment. Agenda: review of the percent complete per Design-Builder Contract requirements relating to the submitted Schedule of Values. Prior to the Billing Meeting the Design-Builder will submit a draft of the Application for Payment for review by the IOR and University Representative.

B. Progress Meetings: Progress meetings shall be periodically scheduled throughout progress of the Work. Frequency shall be as determined necessary for progress of Work. Generally, it is intended progress meetings be held once a week as designated by the University's Representative.

1. Administration: University's Representative or Design-Builder designee shall make physical arrangements for meetings and prepare agenda with copies for participants, preside at meetings, record minutes and distribute copies within four (4) workdays to Design-Builder University’s Consultants, and other participants affected by decisions made at meetings.

2. Attendance: Design-Builder's Project Manager and jobsite Superintendent shall attend each meeting. Design-Builder's subcontractors and suppliers may attend as appropriate to subject under discussion. University will have a representative at each meeting. University's Consultants, as appropriate to agenda topics for each meeting and as provided in University/Consultant Agreement, will also attend.

    a. Suggested Agenda for Progress Meetings:

        1) Building Code/Fire Marshal Issues

        2) Design Issues

        3) Submittals and Long Lead Items

        4) UFCI and UFUI products.

        5) Request for Information

        6) Safety Issues

        7) Scheduling Status/1-Week Prior and 3-Week Look Ahead

        8) Potential Schedule Delay Issues

        9) Incomplete or Non-Conforming Work

        10) Inspection Requests

        11) Utility Shutdowns and Dig Notifications

        12) Instructional Bulletins and Field Orders

        13) Change Orders/Cost Proposals

        14) Payment Applications and As-Built Drawings

        15) Miscellaneous Business

        16) Other items affecting progress of the Work

C. Guarantees, Bonds, Service and Maintenance Contracts Review Meeting: Eleven months following the date of Substantial Completion, a meeting will be conducted by University's Representative to review the guarantees, bonds and service and maintenance contracts for materials and equipment.

D. In addition to meetings listed above, Design-Builder shall hold coordination meetings and pre-installation conferences to assure proper coordination of Work.

1. Pre-installation Conferences: When required in individual Specification Sections, convene a pre-installation conference prior to commencing Work.

    a. Require attendance by representatives of firms whose activities directly affect or are affected by the Work specified.

b. Review conditions of installation, preparation and installation procedures and coordination with related Work and Work under separate contracts.

E. Participants at all meetings shall be University's Representatives, Design-Builder, Consultants and/or Vendors, , Superintendent, Subcontractors and others as appropriate.

1.05 SUBMITTALS ALL PHASES

A. Coordination of Submittals: Schedule and coordinate submittals as specified in Section 013300.1 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES, Section 017700.1 – CLOSEOUT PROCEDURES and Section 017800.1 – CLOSEOUT SUBMITTALS.

1. Coordinate submittal effort of various trades, subcontractors and suppliers having interdependent responsibilities for installing, connecting, and placing into service such equipment, materials or installations as necessary for the Work.

1.06 SUBMITTALS PHASE ONE and PHASE TWO

A. Refer to Design Phase Submittals Section 013300.1, 1.04 and Early Submittal Packages and Shop Drawing Section 013300.1, 1.05 for Phase One and Phase Two submittal requirements.

B. Provide Design-Builders Coordination Drawings as specified per Section 013100.1, 1.09 herein under Coordination/Engineering Drawings.

C. Provide Work Plan as specified per Section 013100.1, 1.09.

D. Provide Utility Location Plans as specified per Section 013100.1, 1.09.

E. Provide Equipment Coordination Packages as specified per Section 013100.1, 1.09.

1.07 SUBMITTALS PHASE THREE

A. Design-Builder shall submit the following submittals to the University's Representative who will forward directly to the appropriate State Agencies for their review and approval:

1. Fire Protection Drawings: Refer to Division 21

2. Fire Alarm System: Refer to Division 28

3. Additional HCAI Deferred Approvals: Refer to list of deferred approvals as shown on the Contract Documents.

1.08 COORDINATION

A. Coordination: Design-Builder shall coordinate the Work as stated in the General Conditions of the Contract. Work of the Contract includes coordination of the entire work of the Project, from beginning of Design through Construction Project closeout and warranty periods. Design-Builder shall also coordinate Work under the Contract with work under separate contracts by University. Design-Builder shall cooperate with University and others as directed by University's Representative in scheduling and sequencing the incorporation into the Work of University Furnished/Design-Builder Installed (UFCI) products identified in the Contract Documents.

1. Coordinate completion and cleanup of work of the separate trades, subcontractors, vendors, etc., in preparation for University occupancy

2. After University occupancy, coordinate access to site by various trades, subcontractors, vendors, etc., for correction of defective work and/or work not in accordance with Contract Documents, to minimize University disruption.

3. Assemble and coordinate closeout submittals specified in Section 017700.1 – CLOSEOUT PROCEDURES.

B. Construction Interfacing and Coordination: Layout, scheduling and sequencing of Work shall be solely Design-Builder's responsibility. Design-Builder shall bring together the various parts, components, systems and assemblies as required for the correct interfacing and integration of all elements of Work. Design-Builder shall coordinate Work to correctly and accurately connect abutting, adjoining, overlapping and related elements, including work under separate contracts by University and utility agencies, if any.

C. Installation of Systems into Project Space: Follow routings shown for pipes, ducts and conduits as closely as practicable, as shown on Design-Builder’s Coordination Drawings with due allowance for available physical space; make runs parallel with line of building. Utilize space efficiently to maximize accessibility for other installations, future maintenance and repairs. In finished areas, except as otherwise shown, conceal pipes, ducts and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

D. Utility Work: Work occurring on or in the immediate vicinity of critical utilities must be directly supervised at all times by Design-Builder's qualified personnel. Requirements stated herein for notification, work plans, dig notification forms and marking locations of existing utilities shall apply. Design-Builder will be held fully liable for costs and damages due to unplanned interruption of critical utilities, including any personal injury to Hospital patients, visitors, or staff.

1. Provide supervision and coordination necessary to meet requirements of electrical power connection as set forth by the Sacramento Municipal Utility District (SMUD) if this project has a SMUD feed.

   a. Power may come from the Central Plant as designated in the contract documents

2. Provide reasonable and convenient staging and access areas to permit SMUD, its vendors or subcontractors, to install, modify or remove electrical transformers or other components of the electrical power system furnished and installed by SMUD if this project has a SMUD feed.

   a. Power may come from the Central Plant as designated in the contract documents.

1.09 COORDINATION OF SUBCONTRACTORS AND SEPARATE CONTRACTS

A. Conflicts: Conflicts shall be resolved by the Design-Builder. Design-Builder bears primary responsibility for conflict resolution regarding the coordination of all building trades, subcontractors and suppliers.

B. Superintendence of Work: Design-Builder shall appoint a field superintendent who shall direct, supervise, and coordinate all Work in the Contract Documents.

C. Subcontractors, Trades and Materials Suppliers: Design-Builder shall require all subcontractors, trades, crafts and suppliers to coordinate their portions of Work with the Superintendent to prevent scheduling, sequencing, dimensional and other conflicts and omissions.

D. Coordination with Work Under Separate Contracts: Design-Builder shall coordinate and schedule Work under Contract with work being performed for Project under separate contracts by University. Design-Builder shall make direct contacts with parties responsible for work of the Project under separate contracts, to provide timely notifications and to facilitate information exchanges.

E. Service Connections: Except as otherwise indicated, final connection of mechanical services to general work is defined as being mechanical work; final connection of electrical services to general work is defined as electrical work.

1.10 UNIVERSITY CRITERIA

A. During the Base Construction Time, Design-Builder shall allow University 3 working days to move University equipment and/or provide furnishings required for construction. Design-Builder shall notify University's Representative in writing a minimum of seven (7) calendar days prior to completion of an area.

1. Design-Builder shall show this time as a distinct activity on the detailed project schedule.

B. Interruption of Services: Construction Work shall accommodate University's use of surrounding and adjacent premises during the construction period and shall provide continuous public access and use of surrounding and adjacent facilities. Design-Builder shall not deny access to public use facilities until an alternate means of public use has been provided. An interruption of service is defined as any event which in any way interrupts, disrupts or otherwise discontinues, even momentarily, the services provided by University to its patients and staff. Adequate notice, as described below, shall be given to University when any interruption of services or interference with the use of existing buildings and roads are anticipated. Any interruption of service will be made only by University upon such notice. Interruptions to University services will not be made without prior notification and approval by University. Design-Builder shall never interrupt any University service without direct University participation.

1. Dig Notification: Design-Builder shall complete and submit for review to University's Representative, a Dig Notification Form, included at the end of this section, and obtain written authorization from University prior to the commencement of any digging activities. Digging activities include exploratory demolition, soils excavation, concrete core drilling, and saw cutting. Design-Builder shall include all pertinent information with the Dig Notification Form and submit with detailed work plan fourteen (14) calendar days prior to desired digging activity.

    a. The Design-Builder shall contact USA North 811 prior to starting underground Work to locate existing underground utilities.

2. Design-Builder shall mark locations of all known utilities on ground of dig area with marker paint.

3. Prior to commencement of digging activities, Design-Builder shall verify project inspector has inspected the dig site and confirmed the site marking as accurate, complete and in conformance with site utility plans.

4. Design-Builder shall verify with University's Representative that all interested hospital departments have been notified of intent to begin digging operation.

5. Record documents are required for dig activities. Design-Builder shall provide As-Built drawings.

C. Shutdown Procedures: Design-Builder shall complete and submit for review and approval to University a Request for Shutdown form, included at the end of this section. Design-Builder shall include all pertinent information to assist University in coordination of shutdown activities. The Shutdown Request Form shall be submitted with a detailed work plan addressing the proposed shutdown not less than fourteen (14) calendar days prior to desired shutdown.

D. The University does not normally charge for its shutdown support services. However, if poor planning and/or poor execution of a shutdown by the Design-Builder causes excessive time and effort for University personnel, the University reserves the right to back charge the Design-Builder for this effort required to support such shutdown.

1. Design-Builder shall verify with University's Fire Marshal that all appropriate Interim Life Safety Measures (ILSM) are in place.

2. Design-Builder shall determine that proper and appropriate coordination and notification has been completed, including written authorization from University's Representative, prior to shut down.

3. Service shutdowns shall require specific work plans to be submitted to and coordinated with University's Representative. Work Plan should reflect various work trades, activities or entities requiring active participation with University teams to coordinating hospital functions with construction activities.

    a. Design-Builder shall request, schedule, and conduct a General Work Plan Meeting prior to any work activity occurrence. During this meeting Design-Builder and University shall produce and agree to a list of work activities, which will require digging and/or shutdown coordination and procedures.

b. University's Representative, upon receiving the agreed submission for coordination, shall schedule the actual digging and/or shutdown at the earliest possible date not later than fourteen (14) calendar days from receipt of the submission. Operation of valves, switches, etc. to affect shutdowns shall be operated by University personnel only.

c. A shutdown is defined as any interruption of services provided by University to its patients and staff.

d. Refer to Utility Location Plan Section 013100.1, 1.09 for additional information.

4. Planned service shutdowns shall be accomplished during periods of minimum usage. Design-Builder shall plan work to restore service in minimum possible time and shall cooperate with the University to reduce number of shutdowns.

a. Notwithstanding the provisions of Article 14.6 of the General Conditions of the Contract, Design-Builder may be required to perform certain types of work outside normal time periods.

1) Non-normal times shall include, but not be limited to, periods of time before 7:00 a.m. and after 5:00 p.m. in the evening, weekend days, or legal holidays, or such periods of time which constitute split shifts or split working periods.

2) Design-Builder shall include allocation of the cost of this work as part of the base bid and shall not be entitled to additional compensation as a result of such work during non-normal time periods.

3) Design-Builder shall include the non-normal periods as distinct activities on the detailed project schedule.

4) Design-Builder is advised and Design-Builder shall be prepared, at University written request, to perform certain shutdown and asbestos related work during non-normal time periods.

CORRDINATION PHASE ONE and PHASE TWO PLANS and PACKAGES

E. Detailed Work Plans: Design-Builder shall develop and submit for review and approval to University's Representative detailed work plans for specific work activities, both inside and outside the work area, associated with impact to, or interruption of services and operation, and dig activities. Work Plans shall be submitted as a PDF electronic file with Table of Contents indexed. Work Plans shall include written description of work activity, detailed schedule with proposed sequence of operation and activity duration, type of equipment to be used, a copy of site plan highlighted to indicate sequencing and location of work and equipment, completed Request for Shutdown and/or Dig Notification forms as applicable, conformance to ILSM, and control methods for noise, vibration and airborne contaminants.

1. Work Plan submittal will not be accepted unless all required information is provided at time of submittal.

2. Submit Work Plan at least fourteen (14) calendar days prior to the commencement of any associated work activities.

F. Utility Location Survey: Refer to Section 017600. General location of utility lines and services may be shown on the drawings or described elsewhere, University does not warrant the accuracy of the locations shown or described. Determination of the actual on-site and/ or for existing work in the building locations of utility lines and services prior to the commencement of work shall be the responsibility of the Design-Builder. Design-Builder shall complete layout/research for Points of Connection (P.O.C.) and clean/prep piping at P.O.C. All capping, relocation or removal of such lines and services shall be performed by Design-Builder as a part of the Contract. New/continued piping and services installation shall be prefabricated and in place prior to the shutdown.

1. As Part of the Utility Location Survey: All materials and tools required to complete the work shall be identified and be at the site location (s) at the time of the shutdown. Design-Builder shall not assume existing valves will hold 100%. Design-Builder is required to have at least one (1) alternate method (including parts and equipment) to complete installation prior to the shutdown has starting. Note: only wheel type cutters shall be used on copper pipe to reduce contamination to existing systems/valves.

G. Coordination/Engineering Drawings: Design-Builder shall provide a complete set of Coordination Drawings that indicates the architectural and structural building components; and combines all piping, conduits, fire sprinkler system, equipment, hangers, braces and other building components into one composite drawing for each floor, wing or area of work. Submit the Coordination/ Engineering Drawings as a bookmarked PDF electronic file. These drawings are for the Design-Builder's and University's use during construction and shall not be construed as replacing any shop drawings, "As-Builts", or record drawings required elsewhere in the Contract Documents. University's review of these drawings is for design intent only and shall not relieve the Design-Builder of the responsibility for coordination of all work performed per the requirements of the Contract.

1. Design-Builder shall prepare and submit complete ¼" = 1' - 0" coordination drawings, including plans, sections, details as are appropriate indicating the area layout, complete with debris removal area and materials access points, and all mechanical and electrical equipment in all areas and within above and below ceiling spaces for new and existing conditions, including bottom of all ducts, plenum, pipe and conduit elevations. Drawings shall show all structural and architectural components, restraints and other obstructions that may affect the work. Electronic or photo reproduction of University's Architectural Drawings is not acceptable.

a. Design-Builder and each Subcontractor shall ensure all relevant mechanical and electrical equipment, piping, conduit, fire sprinkler system, ceiling hangers, braces etc., are shown and will fit, together with necessary items such as lights, ducts, fans, pumps, piping, conduit and the like.

b. Design-Builder shall indicate all locations of expansion/ seismic joints and indicate how expansion for piping, conduit and other components is provided.

c. Design-Builder shall indicate all locations for access doors or other means of access at conditions above and below for items requiring access or service including but not limited to valves, mechanical equipment, electrical equipment valves and other components. The Design-Builder is responsible that piping, conduit, braces and other obstructions do not block access to items indicated above.

d. Submit completed and fully coordinated PDF electronic indexed file drawings with bookmarked Sheet Index together with Design-Builder's comments indicating possible areas of conflict for review to University's Representative prior to start of work.

e. Penetrations: Design-Builder shall prepare a sleeving layout (¼" scale) indicating size and locations of sleeves. Trades shall indicate to the Design-Builder its requirements and locations. PDF electronic files to applicable trades and University's Representative.

f. Completion of work: All coordination drawings shall be submitted together with record (as built) drawings of all trades involved in accordance with Section 013300.1 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

g. Reference all BIM requirements as it applies to this section.

H. Equipment Coordination Packages: Design-Builder and University supplied equipment will require complete installation data be exchanged directly between Design-Builder and vendors and subcontractors involved as progress of Project requires. Individual requesting information shall advise when it is required. Incorrect, incomplete, delayed or improperly identified equipment causing delay or error in installation will require entity causing such action to be liable for modifications or replacements necessary to provide correct and proper installation, including relocations.

1. Design-Builder shall provide large scale casework and equipment drawings for casework and equipment service rough-in locations (dimensioned from building features), service characteristics, and locations of studs or blocking where such locations are critical to mounting or otherwise installing equipment and casework. Furnish sizes and spacing required for mechanical and electrical cutouts, and a complete brochure of fittings, sinks, outlets, or other information to provide a complete assemblage of the items and accessories being furnished.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION

3.01 Refer to the following attachments

A. Request for Shutdown (RFS) Info/Impact Report

B. Dig Notification Form

END OF SECTION 01 31 00.1

REQUEST FOR SHUTDOWN (RFS) INFO/IMPACT REPORT

PROJECT NAME: _____

UNIVERSITY RFS# _____

PROJECT #: _____ **HCAI #:** _____ **CONTRACTOR RFS #:** _____

TODAY'S DATE: _____ **SHUTDOWN DATE:**_____ **SUSPEND DATE:** _____

TO: UC DAVIS HEALTH **Facilities Design & Construction** **4800 2nd Avenue, Suite 3010** **Sacramento, CA 95817** **P: 916-734-7024** **Project Manager's email address:**	**FROM:**

Request Date: _____ **Shutdown Target Date:** _____

Requested By: _____ **Requestor's Phone #:** _____

Shutdown Work (**Utility Specific**): _____

Scope (**Brief Description of Work**): _____

Impact (**Areas & Users**): _____

Additional Comments: _____

DIG NOTIFICATION FORM

PROJECT #: _____ **HCAI #:** _____ **DATE:** _____

TO: UC DAVIS HEALTH **Facilities Design & Construction** **4800 2nd Avenue, Suite 3010** **Sacramento, CA 95817** **P: 916-734-7024** **Project Manager's email address**	**FROM:** _____

1. Has USA been notified? YES ___ NO ___
   When? _____
2. Are all known utilities marked? YES ___ NO ___
3. Location of dig shown on attached site plan? YES ___ NO ___
   Purpose _____
4. **Dates digging will take place** _____
   Place _____

Signed: _____

UNIVERSITY USE ONLY

Date received: _____

1. Utilities verified by IOR? YES ___ NO ___
2. Dig activities coordinated with all parties? YES ___ NO ___
3. Comments: _____

Date Authorized: _____ Signed: _____

Date Returned: _____ Signed: _____

Comments: (Utilities encountered, disruptions, successes, weather, etc.)

Copies: **University** _____ **Consultants** _____ **File** _____

SECTION 01 32 00.1

CONTRACT SCHEDULES

PART I - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Requirements for establishing and maintaining a Critical Path Method (CPM) Schedule. It is intended that the schedule will be developed through the three Phases of the project. Each Phase Schedule should include the activities, logic and durations from the prior and subsequent Phase schedule(s) except for any summary level activities that were used as place holders in earlier Phase Schedules

1.02 DEFINITIONS

A. Construction Schedule/CPM Schedule/Schedule: The most recent; Baseline Schedule, Updated Schedule or Revised Schedule.

B. Phase Schedules

1. Phase 1 Schedule - Schedule for the Design Development work (Phase 1)
2. Phase 2 Schedule - Schedule for the Construction Documents work (Phase 2)
3. Phase 3 Schedule - Schedule for the Construction Phase work (3)

C. Final Baseline Schedule: A final and ongoing Schedule for the project that has been reviewed and accredited by the University's Representative and includes all phases of the project.

D. Revised Schedule/Schedule Revision: The result of changes to the Schedule logic or changes to any activity information. A Revised Schedule must be submitted and accepted by the University.

E. Updated Schedule/Schedule Update: A monthly Schedule update that has been accepted by the University.

F. Recovery Schedule: Schedule required when any Revised Schedule or Update Schedule shows the work to be more than 14 calendar days behind the latest University-accepted contract end date for any of the Phases.

G. Short Interval Schedule (SIS): Schedule prepared on a weekly basis demonstrating the work accomplished the prior week and work planned for the upcoming three weeks.

1.03 SUBMITTALS

A. Scheduling-Related Submittals:

1. Final Baseline Schedule – Final Baseline Schedule will be comprised of detailed activities for all 3 phases of work. Phased schedule submissions will be considered Preliminary submittals for the Final Baseline Schedule.

a. General: Allow 21 calendar days for University review of Final Baseline Schedule.

b. Submit CPM activities for each of the Projects Incremental packages, to include submitting, approving, fabricating, and delivering required submittal items.

c. Submit Phased and Final Baseline CPM Schedules for University review.

d. Submit ongoing updates to CPM Schedules once a month.

e. Submit updated CPM Schedules whenever submitting an Application for Payment.

f. Submit revisions to CPM Schedules whenever changes are made to the Schedules.

2. Phase 1 Schedule - The Phase 1 Schedule shall include detailed activities for Phase 1 work and summary level activities for Phase 2 & Phase 3 work.

a. The Phase 1 Schedule shall be submitted no later than 14 calendar days after the Notice to Proceed (NTP) of Phase 1.

3. Phase 2 Schedule - The Phase 2 Schedule shall include all activities and associated logic from the Phase 1 Schedule, detailed activities for the Phase 2 work and summary level activities for the Phase 3 work.

a. Phase 2 Schedule shall be submitted no later than 14 calendar days after the Notice to Proceed (NTP) with the Construction Documents Phase.

4. Phase 3 Schedule – The Phase 3 Schedule shall include all activities and associated logic for Preconstruction and construction Phases of the Work.

a. The Phase 3 Schedule shall be submitted no later than 60 calendar days prior to the Notice to Proceed (NTP) with the Construction (Phase 3)

1) The University will require 21 calendar days for review of the initial submission of the Phase 3 Schedule.

a) The University will require 14 calendar days for review of any subsequent revisions to and updates of the Phase 3 Schedule.

5. Update Schedule - At a minimum, an Update Schedule shall be submitted monthly. The Update Schedule shall contain all progress through a pre-determined date each month.

    a. This pre-determined date should be coordinated with the University.

    b. Be aware that of the planned dates for submission of pay applications when determining the pre-determined day that updates will be submitted as the Update Schedule is a prerequisite for payment of the corresponding pay application.

6. Revised Schedule - Should there be any proposed revisions to any aspect of the latest updated or revised schedule for any Phase of the work, then a Revised Schedule shall be submitted along with a detailed narrative explaining the need for any such revisions.

    a. If the Revised Schedule is also intended to be an Update Schedule, then two schedules shall be submitted, one without the proposed revisions and one with the proposed revisions.

    b. These two schedules shall contain progress through the same date and must be submitted at the same time such that the University can determine the schedule effect of the proposed revisions.

    c. The University will require 14 calendar days to review Revised Schedules.

7. Recovery Schedule – Should any schedule show that the work has fallen behind the current University-accepted end date by over 14 calendar days for any phase of the work, then a Recovery Schedule is required and is to be submitted.

    a. The Recovery Schedule shall show how the days will be mitigated such that the Recovery Schedule does not show that the work is over 14 calendar days behind schedule.

    b. The Recovery Schedule will be the schedule updated from that point.

8. Short Interval Schedule (SIS) - On a weekly basis, the University is to be provided a Short Interval Schedule for the work. These Short Interval Schedules shall include the activities from the prior week and the three upcoming weeks.

    a. The Short Interval Schedules shall be provided to the University at least one day in advance of any Weekly Progress Meeting.

    b. These Short Interval Schedules shall be derived directly from the most current update or revision of the most current Phase Schedule.

        1) Supplement with detailed activities required to inform of any required inspection requests, shutdowns, confined space work, off hours work, and any work that will interrupt normal University services to their clients.

9. Sub-Net or Frag-Net Schedule - A Sub-Net Schedule is to be submitted to demonstrate the schedule effect of University-directed changes or other factors that impact the end date of any Phase of the work.

    a. The University will require 14 calendar days to review Sub-Net Schedules.

1.04 GENERAL REQUIREMENTS

A. General: The work shall be prosecuted at such rate as will ensure meeting all the specified phases of the Contract, including phases for Substantial Completion and Final Completion, within the allocated Contract Time for those phases.

1. Omissions or Inaccuracies: Failure of the Schedule to include any element of the Work or any inaccuracy in the Contract Schedule will not relieve responsibility for accomplishing the Work in accordance with the Contract Documents and within the Contract Time.

2. University Holidays: No work requiring inspection or University input should be scheduled on University holidays. Refer to Division 1 Section "Work Restrictions" for a tentative list of University holidays.

B. Methodology: Develop a CPM plan and Schedule demonstrating fulfillment of the contract requirements. The CPM shall consist of time-scaled plotted network(s) and accompanying management reports. Keep the network up to date in accordance with the requirements of this section and utilize the plan for scheduling, coordination and monitoring work under this contract (including all activities of subcontractors, equipment vendors and suppliers). This conventional CPM technique will be utilized to satisfy time extension applications and any associated delay costs. The requirement for the CPM is included to assure adequate planning and execution of the work and to assist in appraising the reasonableness of the proposed Schedule and evaluating progress of the work and determining the extent and the responsibilities for delays.

C. Subconsultant and Subcontractor Participation: Consult with Subconsultants, Subcontractors and suppliers relating to the preparation of the Phased construction plans and Schedules. Subcontractors shall receive copies of those portions of the CPM which relate to their work. They, in turn, shall supply comments on activity definitions, scope, and durations, as needed. Continually advise Subconsultants, Subcontractors and suppliers of any updates or revisions to the Construction Schedule as the work progresses. It is assumed that base line schedules, updates and revisions of the Schedule submitted to the University have been made after coordination with the principal subcontractors and suppliers. The Design-Builder shall be solely responsible for ensuring that all subcontractors and suppliers comply with the requirements of the CPM for their portions of the work.

D. Standards: Diagrams shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned. The basic concept of a network diagram will be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of the following activities.

E. Ownership of Float: Float or slack is defined as the amount of time between the early start date, and the late start date of any of the activities in the CPM Schedule. Float or slack time is not for the exclusive use of or benefit of either the University or the Design-Builder.

F. Constraints: Constraints should be kept to a minimum and are subject to the approval of the University. In all cases, there must be a compelling reason to include constraints in any schedule.

1. Relationships: Finish/Start Logic ties with Positive or Negative Lags: The use of finish-to-start logic ties in conjunction with a negative or positive lag is not allowed. If there are relationships where activities will overlap and have a relationship with each other, then start-to-start and/or finish-to-finish logic ties must be used.

G. Time Extensions: The contract completion time will be adjusted only for causes specified in this contract. Request for an extension of the Contract time shall be supported with a justification, i.e., a mathematical analysis supporting the time extension and a subnet showing all CPM logic revisions, duration changes, and cost changes, including relationships to other activities on the CPM Schedule. Requests must include supporting information not limited to:

1. Narrative describing the issue and its impact on the CPM schedule.
2. All supporting documentation for items associated with the delay.
3. An analysis of any concurrent Design-Builder caused delays (as determined in the schedule described in Item 5 below).
4. Recommended mitigation efforts.
5. Update of most current revision or update of the most current Phase Schedule through the day prior to the onset of the delay being analyzed
6. Sub-Net Schedule (copy of schedule described in Item 5 above) that contains specific new activities describing the delay events and their relationships to existing schedule activities.

The Schedule must clearly display that all the float time available for the work involved in this request. The University's determination as to the total number of days of contract extension will be based upon the current computer-produced calendar-dated Schedule for the time period in question and all other relevant information. Actual delays in activities that, according to the computer-produced calendar-dated Schedule, do not affect the extended and predicted contract completion dates shown by the critical path in the network, will not be the basis for a change to the contract completion date. The University's representative will within a reasonable time after receipt of such justification and supporting evidence, review the facts and advise the Design-Builder in writing of its decision.

1.05 SCHEDULING SOFTWARE

A. Software System: Use a scheduling system with the capability of Primavera Project Planner (P6).

1.06 PROJECT SCHEDULE NARRATIVES

A. Within 14 calendar days after issuance of Notice to Proceed into Phase 1, the Design-Builder shall submit for the University's review Phase 1 Schedule. Within 14 calendar days of issuance of Notice to Proceed into Phase 2, The Design Builder shall submit for the University’s review Phase 2 Schedule. Phase 3 schedule shall be issued to the University no later than 60 calendar days prior to the start of construction activities

1. Phase 1 Schedule:

a. Initial submission of the Phase 1 Schedule shall include a narrative describing:

1) The Design-Builder's planned approach to the work.

2) Planned sub-consultants.

3) Planned staffing levels.

4) Constraints to the work.

5) Planned non-work holidays.

6) Description of the inter-relationship(s) between Phase 1 and Phase 2 work.

7) Additional information requested by the University's Representative.

b. All narratives for revisions to and updates of the Phase 1 Schedule shall include:

1) Reconciliation of overall time, time utilized and time remaining.

2) Descriptions of any problem areas and/or delays and planned mitigation efforts.

3) Proposed revisions to the Phase 1 Schedule, including reasons for the proposed revisions.

4) Status of Phase 1 billings.

5) Additional information requested by the University's Representative.

2. Phase 2 Schedule:

a. Initial submission of the Phase 2 Schedule shall include a narrative describing:

1) The Design-Builder's planned approach to the work.

2) Planned sub-consultants.

3) Planned staffing levels.

4) Constraints to the work.

5) Planned non-work holidays.

6) Descriptions of the inter-relationships between Phase 2 and Phase 3 work.

7) Status of all required Approvals.

8) Additional information requested by the University's Representative.

b. All revisions to and updates of the PH2 Schedule shall include:

1) Reconciliation of overall time, time utilized and time remaining.

2) Descriptions of any problem areas and/or delays and planned mitigation efforts.

3) Proposed revisions to the PH2 Schedule, including reasons for the proposed revisions.

4) Status of Phase 2 billings.

5) Additional information requested by the University's Representative.

3. Phase 3 Schedule

a. Initial submission of the Phase 3 Schedule shall include a narrative describing:

1) The Design-Builder's planned approach to the work including all Increments, major construction equipment to be utilized, planned subcontractors, and planned manpower levels for the overall Phase 3 work.

2) Planned non-work holidays.

3) Status of all required Approvals.

4) Description of the Phase 3 Schedule organization (WBS Structure).

5) Design-Builder's proposed staffing.

6) Planned construction sequencing.

7) Planned utility tie-ins.

8) Planned interfaces with the University.

9) Additional information requested by the University's Representative.

b. All revisions to and updates of the PH3 Schedule shall include:

1) Reconciliation of overall time, time utilized and time remaining.

2) Manpower utilized.

3) Major construction equipment utilized.

4) Descriptions of any problem areas and/or delays and planned mitigation efforts.

5) Proposed revisions to the Phase 3 Schedule, including reasons for the proposed revisions.

6) Status of Phase 3 billings.

7) Additional information requested by the University's Representative.

B. The Contractor, prior to the first submission of each Phase Schedule, shall meet with the University for the purpose of determining the required reports, diagrams, narratives and formats to be submitted with the Phase Schedule and all subsequent revisions and updates of the Phase Schedule. The information (generated by the scheduling software) to be provided on the various diagrams and reports will be determined by the University's Representative. In general, the Design-Builder shall provide the following:

1. Narratives

a. As described in 1.06 above

2. Electronic Version of Schedule

    a. Electronic version of schedule (exported from scheduling software). Provide file to the University's Representative in a format that allows the file to be imported into the University's version of the accepted scheduling software.

3. Diagrams

    a. 34"x44" Gantt Chart.

    b. 34"x44" Network Diagram.

    c. 11"x17" Gantt Chart (showing all activities).

    d. 11"x17" Gantt Chart (showing critical path activities).

    e. Special diagrams requested by the University's Representative.

4. Reports

    a. Computer-generated reports as requested by the University's Representative.

    b. Electronic version of schedule (exported from scheduling software) for import into the University's scheduling software.

C. The Final Baseline Schedule: 60 calendar days prior to the start of any Construction Activities, the Design-Builder shall submit for the University's review the complete Final Baseline Schedule. The submittal will include computer-produced time-scaled network diagram(s) and tabular management reports showing the information required by this section. The complete Final Baseline Schedule shall reflect the Design-Builder's approach to scheduling the complete project, taking into account the accuracy of the logic and the experience gained from the interim diagram. No payment requests from Design-Builder for Phase 3 will be accepted unless the Final Baseline CPM Schedule has been submitted and accepted in principle.

1. Indicate the following on the Final Baseline Schedule:

    a. The order and interdependencies of the activities and the major points of interface or interrelation with the activities of others, e.g., utilities, power, and with any separate contractors, including specific dates for completion.

    b. Conformance with and identification of the phases in the Contract Documents.

    c. The description and name of work by activity.

    d. The time required for engineering, preparation and approval of shop drawings, manufacturing, and delivery of Design-Builder furnished materials and equipment.

    e. Delivery of University-furnished material and equipment, if any.

f. The Critical Path for the project, with said path of activities being clearly and easily recognizable on the time-scaled network diagram.

g. Testing of equipment and materials.

h. Equipment/Systems start-up and commissioning.

i. Punchlist activities.

j. The time in days required for inspections by the University and their consultants.

k. The CPM diagram shall provide a complete and detailed sequence of operations of the work within the time limits specified in the contract.

2. For all major equipment and materials fabricated or supplied for this project, the network shall show a sequence of activities including:

a. Preparation of shop drawings and sample submissions.

b. Review of shop drawings and samples.

c. Shop fabrication and delivery.

d. Erection or installation.

e. Testing of equipment and materials.

f. Start-up and commissioning.

3. Activity Data and Information:

a. The following information will be furnished as a minimum for each activity:

1) (*)activity identification numbers

2) (*)activity description

3) (*)workday duration of activities and remaining duration of those in progress

4) earliest start date (by calendar date)

5) earliest finish date (by calendar date)

6) scheduled or actual start date (by calendar date)

7) scheduled or actual finish date (by calendar date)

8) latest start date (by calendar date)

9) latest finish date (by calendar date)

10) total float

11) responsibility code for activity (Design-Builder, subcontractors, suppliers, University, etc.), incorporated into the work breakdown structure

12) percentage of activity completed

13) Design-Builder's earnings based on portion of activity completed.

14) area code, incorporated into the work breakdown structure

15) dependencies

16) specification section

4. CPM Schedule Submittal Activities:

a. The Final Baseline Schedule shall include the activities with the following information for each type of material and equipment to be provided:

1) Material or equipment description.

2) Technical specification reference.

3) Duration in calendar days required for both preparation and review of submittals.

4) Duration in calendar days required for fabrication and delivery.

5) Logic ties to activities which will be affected by the delivery date of the material or equipment item.

6) Scheduled delivery dates.

b. Update the submittal activities and the work activities at least once a month.

c. Design-Builder must submit the following support information with the CPM:

1) A listing of definitions for trade and area abbreviations, for the Work Breakdown Structure (WBS).

d. Activity Duration Limitations: Break up the work into activities of a duration of no longer than 28 calendar days each, except as to non-construction activities (such as procurement of materials, delivery of equipment and curing) and any other activities for which the University may approve the showing of longer duration.

e. Contract Start/Completion Dates and specified phases:

1) The CPM must show activities and imposed start or complete dates for:

a) Contract Start Date (NTP);

b) All specified phases of the project, including but not limited to Substantial Completion and Final Completion.

c) No imposed dates or constraints shall be used on any activity except for the Contract Start Date (NTP), and specified phases of the Contract, including but not limited to substantial completion and final completion. On CPM Schedule, illustrate activities ahead of schedule with positive total float and activities behind schedule with negative total float.

2) Time of completion of the project and time of completion for each phase shall adhere to the times in the General or Supplementary Conditions and General Requirements.

f. Punch List: Show a minimum of 7 calendar days for completion of punch list items and final clean-up per designated area. For phased or partially completed project areas, show punch list and final cleaning durations for each phase of the project.

g. University-Furnished Items: Show University-furnished materials and equipment which are to be installed by Design-Builder as separate activities.

h. Milestones: Milestones are activities of zero duration used for tracking progress on key events during construction. The Schedule shall include the following Milestones to indicate the completion of the following activities:

1) All milestones will be identified once the Design Build team is determined, and a more comprehensive assessment of the proposed project design can be made.

D. CPM Reports Required:

1. Critical Path Report: Sorted by ascending total, secondary sort by late finish, and tertiary sort by early start.

2. Methodology Narrative: Provide a general narrative description of construction methodology to be employed on this project. Include such considerations as site access, flow of men and materials, critical assumptions, and phases. Submit a monthly update narrative report in the form described herein. The narrative is to include a general description of the progress of the work for the period covered along with a list of activities started during the period, progressing during the period and completed during the period. The narrative is to list all Schedule milestone activities including the float with early and late start and finish dates. The narrative report shall also include a description of problem areas; current and anticipated delaying factors and their estimated impact on the performance of other activities and completion dates; and an explanation of corrective action taken or proposed.

3. Modifications: List of Adds, Deletes or Changes to approved CPM (for updates only). In addition to the listing, provide a narrative and justification of the

4. Proposed changes and potential impacts to project.

5. Detailed Look-Ahead Report "Window Schedule." With each monthly update, include a software produced Barchart Schedule covering the period of two months, or as agreed, from the date of the current update, based on the CPM update.

6. Each CPM Report will include the following:

a. A listing of all milestones with early/late-start/finish dates, and total float.

b. A listing of all submittals that are not approved with early/late-start/finish dates, and total float.

E. Graphics Required:

1. Summary Barchart: If the Baseline Schedule Diagram is of such size that the entire Barchart cannot be readily shown on a single sheet, a summary Barchart diagram shall be provided. The summary Barchart diagram shall consist of approximately fifty activities and shall be based on and supported by detailed diagrams. Area by trade related activities shall be grouped on the Barchart, according to the work breakdown structure. The summary Barchart shall be scaled using units of approximately one-half inch equals one week or other suitable scale approved by the University. Where slack exists, the activities shall be shown at the time when they are scheduled to be accomplished. An acceptable grouping for the Summary Barchart shall be subject to the University's acceptance.

2. Critical Path: Organize by WBS, sorted by early start

1.07 SHORT INTERVAL SCHEDULING (SIS)

A. Short Interval Scheduling (SIS) shall be used throughout the on-site construction activity as indicated below, upon the request of the University's Representative.

1. The Interval shall be a 2 to 4 week projection and include the week submitted and one to three weeks thereafter.

2. It shall contain sufficient detail to evaluate daily progress and shall identify and tie into the updated Schedule. For example, activities on SIS shall include activity numbers of the corresponding activity in the CPM Schedule.

3. Activities shall be added into the structure of the SIS to provide the detail as described in 1.3.A.8.b.1.

4. It shall meet the acceptance of the University's Representative.

5. It shall be submitted to the University's Representative on a weekly basis.

B. SIS shall be a bar chart or an expansion of Schedule to including only the agreed upon Interval, and shall include the following:

1. All Work activities with commencement and completion dates, occurring within the Interval.

a. Activities shall be added into the structure of the SIS to provide the detail as described in 1.3.A.8.b.1

2. Designation of those activities on the critical path.

3. Scheduled overtime Work.

4. Scheduled test dates and on-site meetings.

5. Dates Contractor requests University-furnished items or facilities.

6. Scheduled deliveries of materials and equipment.

1.08 PROGRESS UPDATES

A. General: Review the Schedule with University's Representative once each month to incorporate in the Schedule all changes in the progress, sequences, and scope of Work activities. Prepare and submit to University's Representative an updated Schedule once each month, or as mutually agreed.

1. The updated Schedule shall accurately reflect all previously completed and in-progress Work activities.
2. The updated Schedule shall incorporate all changes mutually agreed upon by Contractor and University during preceding periodic review and all changes resulting from Change Orders.
3. Contractor shall perform the Work in accordance with the updated Schedule. Contractor may change the Schedule to modify the order or method of accomplishing the Work only with prior agreement by University.

B. Progress Reporting Procedure: The computerized Schedule will be used to monitor progress . Monthly (more often if directed) job site progress meetings shall be held on dates mutually agreed to by the University. Indicate status and give this information to the project inspector five (5) calendar days in advance of the progress meeting. Job progress will be reviewed to verify:

1. Actual finish dates for completed activities and actual start dates for started activities.
2. Remaining duration required to complete each activity started, or scheduled to start, but not completed.
3. Logic, and time for Change Orders that are to be incorporated into the Schedules.
4. Percentage for completed and partially completed activities.
5. Logic and duration revisions as required within the provisions of this section of the specifications.

C. Reports: After job progress has been verified at the job site progress meeting, the update will be processed, and reports provided as specified herein.

1.09 Design-Builder Caused Revisions to the Approved CPM:

A. The Design-Builder must submit a revised diagram to bring the project back on schedule and submit a list of the required changes for any of the following reasons:

1. Delay in completion of any activity, or group of activities, indicate an extension of the project completion by 10 calendar days or more.
2. Delays in submittals, deliveries, and work activities, or work stoppage are encountered which make replanning or rescheduling of the work necessary.
3. The Schedule does not represent the actual prosecution and progress of the project.
4. The cost of revisions caused by the Design-Builder shall be the Design-Builder's responsibility.

1.10 University Caused Revisions to the Approved CPM:

A. When Notice to Proceed with changes in the work must be issued prior to settlement of price and/or time to avoid delay and additional expense, the Design-Builder will revise the network logic and/or duration time estimates of all activities affected by the changes within seven (7) calendar days after the date of Notice to Proceed with this change. These revisions will be submitted in the form of a subnet showing all affected work activities and the impact of the change and must be accepted by the University prior to inclusion in the network.

1.11 Time Extension Request Documentation

A. In the event the Design-Builder shall request an extension of Contract Time, Design Builder shall comply with the requirements of the General Conditions, including without limitation, General Conditions Article 8. In addition to the requirements of the General Conditions, as a condition to obtaining an extension of the Contract Time, Design Builder shall timely submit a sub-network of the events of the delay that demonstrates the impact to the activities in the Design-Builder's then current schedule, as well as the impact to the overall completion date of the project. If the University's Representative approves the extension of time, the next monthly updated Contract Schedule shall incorporate the sub-network with the extension of time. In addition, the monthly updated Contract Schedule shall contain all changes mutually agreed upon by the Design-Builder and the University during preceding periodic reviews and all changes resulting from Change Orders and Field Orders.

PART II - PRODUCTS - Not applicable to this section.

PART III - EXECUTION - Not applicable to this section.

END OF SECTION 01 32 00.1

SECTION 01 33 00.1

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART I - GENERAL

1.01 SECTION INCLUDES

A. Administrative requirements for shop drawings, product data and samples submittals

B. University's and University's Consultant's review of submittals

C. Design-Builder’s review of submittals

D. Design Phase Product Data Submittals and Specification Submittals

E. Early Submittal Packages and Shop Drawing prior to the start of the Construction Phase

F. Shop Drawing Submittals

G. Product Data submittals

H. Sample submittals

I. Field Samples and mock-ups

J. Submittal Schedule requirements

1.02 RELATED SECTIONS

A. Section 011100.1 – SUMMARY OF THE WORK: Subcontractor and materials suppliers list.

B. Section 013200.1 – CONTRACT SCHEDULES: Submission and review of schedules and submittals.

C. Section 014500.1 – QUALITY CONTROL: Test and Inspection Reports.

D. Section 016100 - PRODUCT REQUIREMENTS

E. Section 017700.1 – CLOSEOUT PROCEDURES: Occupancy/Acceptance /Final Payment Submittals.

F. Section 017800.1 – CLOSEOUT SUBMITTALS: Preparation of Maintenance and Operating Data.

1.03 ADMINISTRATIVE REQUIREMENTS

A. General Submittals Review: Submittals shall be made in accordance with requirements specified herein and in individual Sections.

1. Submittals shall be a communication aid between Design-Builder, University's Representative, and University's Consultant(s) by which interpretation of Design Build Contract Documents requirements may be confirmed in advance of construction.

2. Submit on all products to be used on the Project. Make all submittals through the University unless otherwise directed.

a. The University's Representative shall provide timely review of submittals and re-submittals.

1) University's Representative shall have twenty-one (21) calendar days from receipt to review all submittals twenty-one (21) calendar days from receipt to review re-submittals.

2) The Fire Marshal shall have twenty-eight (28) calendar days from receipt to review all submittals, twenty-eight (28) calendar days from receipt to review re-submittals.

3) University's Representative will prepare and keep a log of review time of all submittals.

3. Substitutions shall be submitted in accordance with Section 016100 – PRODUCT REQUIREMENTS.

4. Make submittals sufficiently in advance of construction activities to allow shipping, handling and review by the University's Representative and their consultants.

B. Design-Builder's Review: Design-Builder shall review, mark-up as appropriate and stamp Shop Drawings, Product Data, and Samples prior to submission. Submittal shall clearly show it has been reviewed by Design-Builder for conformance with the Design Build Contract Documents, the Design Builders subsequent design, and for coordination with requirements of the Work. Notify University's Representative in writing, at time of submission, of any changes in the submittals from requirements of Design Build Contract Documents.

C. University's and University's Consultants Review: University's Consultant's review will be only for general conformance with the design intent of the Design Build Contract Documents. Review of submittals is not conducted for purpose of determining accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Design-Builder as required by the Contract Documents. Review actions of the University's Consultant or University shall not relieve Design-Builder from compliance with requirements of the Design Build Contract Documents. Changes shall only be authorized by separate written Change Order in accordance with the General Conditions of the Contract.

1.04 DESIGN PHASE SUBMITTALS

A. As part of the Design Phase, the Design-Builder shall provide manufacturer's product data and technical sheets with product name, model numbers and installation requirements for the University Representative review and acceptance.

B. As part of the Design Phase Submission requirements, the Design-Builder shall develop and provide a complete set of specifications identifying all materials, products, equipment, systems and components to be included, incorporated and installed as part of the Work for a complete design.

1.05 EARLY SUBMITTAL PACKAGES AND SHOP DRAWINGS

A. As part of the Design Phase, the Design-Builder shall identify items that will have a long lead procurement time or are required at the start of the Construction Phase to meet the requirements of the Project Schedule.

B. The Design-Builder shall provide early submittal packages and shop drawings in accordance with the requirements of this Section during the Design Phase allowing sufficient time for review and acceptance period by the University Representative prior to the start of the Construction Phase.

1.06 SUBMITTAL REQUIREMENTS

A. Prompt Submission: Submittals shall be submitted promptly in accordance with Submittal Schedule and in such sequence as to cause no delay in the Work or in the work of any separate contractor. Present information in a clear and thorough manner to aid orderly review.

B. Preparation: Title each submittal with the University's Project Name and the University's Project number, submittal date and dates of any previous submissions. Clearly mark each copy to identify product or model.

1. Identify each item on submittal by reference to Drawing sheet number, detail, schedule, room number, assembly or equipment number, Specification number Reference Standard (such as ASTM or Fed Spec Number) and other pertinent information to clearly correlate submittal with Contract Documents.
2. Include the names of the Design-Builder, Subcontractor, Supplier and Manufacturer.
3. Include field dimensions, clearly identified as such to establish relationship to adjacent or critical features of the Work or materials.
4. Include pertinent information such as performance characteristics and capacities, wiring or piping diagrams and controls, catalog numbers and similar data.
5. Modify manufacturer's standard schematic drawings and diagrams and other diagrams to delete information not applicable to the Work. Supplement standard information to provide information specifically applicable to the Work.
6. Identify changes from requirements of the Contract Documents.
7. Include 8" x 3" blank space on face of submittal for review stamps.
8. Include Design-Builder's review stamp, initialed or signed and dated, certifying to the review of the submittal, verification of materials, field measurements, conditions, and compliance of the information within the submittal with the requirements of the Work and of the Contract Documents.

C. Number of submittals required:

1. Product Data Submittals: Submit PDF electronic file with booked marked table of contents. Submittals for the Fire Department require an electronic file and two (2) hard copies.

2. Initial/Re-submitted Shop Drawing Review(s): Submit PDF electronic file with booked marked table of contents. Submittals for the Fire Department require an electronic file and two (2) hard copies.

3. Final Shop Drawing Review and Approval: After obtaining University's Representative approval of initial/re-submitted shop drawing submittals, as described in Section 1.04.C.2 above, Design-Builder shall submit PDF electronic file with booked marked table of contents. Submittals for the Fire Department require an electronic file and two (2) hard copies. Design-Builder is responsible for providing all approved shop drawings for its use and use by subcontractors and/or suppliers.

4. Samples: Submit number specified. Samples shall be of sufficient size and quality to clearly illustrate the functional characteristics of the products, with integrally related parts and attachment devices, including full range of colors, textures and patterns.

D. Identifying Submittals: Identify each submittal by Specification section number followed by a number indicating sequential submittal for that Section. Re-submittals shall use the same number as the original submittal, followed by a letter indicating sequential re-submittal. Examples:

1. 092500 – 1 First submittal for Section 092500 – Gypsum Board
2. 092500 – 2 Second submittal for Section 092500 – Gypsum Board
3. 092500 – 2A Re-submittal of second submittal for Section 092500 – Gypsum Board
4. 092500 – 2B Second re-submittal of second submittal for Section 092500 – Gypsum Board

E. Resubmission Requirements: Revise and resubmit as specified for initial submittal. Identify any Changes other than those requested. Note any departures from Contract Documents or changes in previously reviewed submittals.

F. Grouping of Submittals: Unless otherwise specifically permitted by University's Representative, make all submittals in groups containing all associated items as described in each Specification Section. The University's Representative will reject partial submittals as incomplete.

G. Unsolicited Submittals: Unsolicited submittals will be returned NOT REVIEWED.

1.07 DISTRIBUTION

A. PDF and distribute finalized copies of Shop Drawings and Product Data, to the following:

1. Design-Builder project site file.
2. As-built Documents file maintained by Design-Builder.
3. Pertinent Separate Contractors.
4. Pertinent Subcontractors.

5. Pertinent Supplier or Manufacturer.

1.08 SUBMITTAL SCHEDULE

A. Submittals Schedule: refer to Section 013200.1 – CONTRACT SCHEDULES.

1. The Submittal Schedule is a schedule for submission of Shop Drawings, Product Data and Samples by Design-Builder, and the processing and return of same by University.

2. Design-Builder shall prepare the Submittal Schedule as described herein and coordinate it with the Contract Schedule. No submittals will be processed before the Submittal Schedule has been submitted to and accepted by University.

3. Submittal Schedule shall be adjusted to meet needs of the Design and Construction process and the Contract Schedule. Submit PDF electronic file with booked marked table of contents, of the Submittal Schedule after it is completed and each time it is updated by Design-Builder.

4. Design-Builder shall NOT begin fabrication or Work which requires submittals until the return of final reviewed and approved submittals have been received by the Design-Builder.

1.09 ENVIRONMENTAL PRODUCT DECLARATIONS

A. Contractor must comply with Buy Clean California Act requirements per California Public Contract Code, Sections 3500-3505.

B. Contractor shall submit to Project Manager/Construction Manager current facility-specific Environmental Product Declaration for each eligible material proposed to be used on the Project.

C. Environmental Product Declaration (EPD): Type III environmental impact label, as defined by the International Organization for Standardization (ISO) standard 14025, or similarly robust life cycle assessment methods that have uniform standards in data collection consistent with ISO standard 14025, industry acceptance, and integrity.

D. Eligible Materials: Any of the following:

1. Carbon steel rebar.

2. Flat glass.

3. Mineral wool board insulation.

4. Structural steel.

E. Eligible Materials installed on the Project by Contractor must comply with any standards to the extent established in the BCCA or by University, whichever is more stringent. The facility-specific global warming potential for any Eligible Material must not exceed any existing maximum acceptable global warming potential for that material pursuant to the BCCA or by University, whichever is more stringent (“EM Standards”). The standards are published on the Department of General Services (DGS) website and updated information

can be found on this link: https://www.dgs.ca.gov/PD/Resources/Page-Content/Procurement-Division-Resources-List-Folder/Buy-Clean-California-Act

F. Contractor shall not install any eligible materials on the project before submitting a facility-specific Environmental Product Declaration for that material.

G. This section shall not apply to an eligible material for a particular contract if the University determines, upon written justification published on its Internet website, that requiring those eligible materials to comply would be technically infeasible, would result in a significant increase in the project cost or a significant delay in completion, or would result in only one source or manufacturer being able to provide the type of material needed by the state.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION – Not Applicable to this Section

END OF SECTION 01 33 00.1

SECTION 01 41 00.1

REGULATORY REQUIREMENTS

PART I - GENERAL

1.01 SECTION INCLUDES

A. Relationship between Code, Ordinances, Standards and Design Build Contract Documents

B. Applicable Codes, Laws and Ordinances

C. Project Inspections

D. California State Fire Marshal Requirements

E. Department of Health Care Access and Information Projects

1.02 RELATED SECTIONS

A. Section 013500 – SPECIAL PROCEDURES

B. Section 014200 – REFERENCES

C. Section 014500.1 – QUALITY CONTROL

1.03 RELATIONSHIP BETWEEN CODES, ORDINANCES, STANDARDS, THE DESIGN BUILD CONTRACT DOCUMENTS AND THE DESIGN-BUILDER'S RESPONSIBILITY.

A. Authority: All codes, ordinances and standards referenced in Design Build Contract Documents shall have full force and effect as though printed in their entirety in the Design Build Contract Specifications.

B. Precedence:

1. Where specified requirements differ from requirements of applicable codes, ordinances and standards, the more stringent requirements shall take precedence.

2. Where Design Build Contract Drawings or Design Build Contract Specifications require or describe products or execution of better quality, higher standard or greater size then required by applicable codes, ordinances and standards, the Design Build Contract Drawings and Design Build Contract Specifications shall take precedence so long as such increase is legal.

3. Where no requirements are identified in Design Build Contract Documents, comply with all requirements of applicable codes, ordinances and standards of governing authorities having jurisdiction.

C. The Design-Builder is responsible for designing and constructing the Project in compliance with applicable requirements of federal and state laws, codes, rules, regulations, ordinances, and standards as indicated in this Section. The Design-Builder is solely responsible for exclusions, omissions or errors of requirements for applicable codes, laws, standards and ordinances in the Contract Documents prepared by the Design-Builder. The Design-Builders shall provide and/ or correct all work associated with the exclusions, omissions or errors at no additional cost or time to the University.

1.04 APPLICABLE CODES, LAWS AND ORDINANCES

A. Building Codes, Laws and Regulations:

1. Work shall meet or exceed the requirements of and be performed in accordance with applicable, adopted code requirements, laws and requirements of all other regulatory agencies, including, but not limited to the following:

a. California Code Series - 2019 Edition

1) California Administrative Code, California Code of Regulations – Title 24, Part 1

2) California Building Code, California Code of Regulations – Title 24, Part 2, Volume 1& 2

3) California Electrical Code, California Code of Regulations – Title 24, Part 3

4) California Mechanical Code, California Code of Regulations – Title 24, Part 4

5) California Plumbing Code, California Code of Regulations – Title 24, Part 5

6) California Energy Code, California Code of Regulations – Title 24, Part 6

7) Elevator Safety Construction Code, California Code of Regulations – Title 24, Part 7

8) California Historical Building Code, California Code of Regulations – Title 24, Part 8

9) California Fire Code, California Code of Regulations – Title 24, Part 9

10) California Existing Building Code, California Code of Regulations – Title 24, Part 10

11) California Referenced Standards Code, California Code of Regulations – Title 24, Part 12

b. NFPA Code Series. National Fire Protection Association (NFPA) (as adopted by State agencies)

1) NFPA 13 – Standard for the Installation of Sprinkler Systems.

2) NFPA 14 – Standard for the Installation of Standpipe and Hose System

3) NFPA 72 – National Fire Alarm and Signaling Code

4) NFPA 80 – Standard for Fire Doors and Other Opening Protectives

5) NFPA 99 – Health Care Facilities Code

6) NFPA 101 – Life Safety Code

7) NFPA 252 – Standard Methods of Fire Tests of Door Assemblies

8) NFPA 701 – Standard Methods of Fire Tests of Flame Propagation of Textiles and Films

c. California Code of Regulation Series (embodied in California model codes as noted above)

1) Title 8, Industrial Relations

2) Title 17, Public Health (Chapter 7)

3) Title 19, Public Safety

4) Title 21, Public Works

5) Title 22, Social Security

6) Title 24, Parts 1, 2, 3, 4, 5, 9 and 12

7) Title 25, Energy Insulation Standards

d. Americans with Disabilities Act (ADA) 2010 (Federal Law)

e. Rules and regulations of private and public utilities

f. American National Standards Institute (ANSI)

g. American Society of Testing Materials (ASTM)

h. Federal Specifications (Fed. Spec.)

i. Underwriters Laboratories

j. Traffic controls per California MUTCD requirements

2. All dates to comply with editions adopted and accepted by University and California State Fire Marshal (CSFM).

3. 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 in effect at the date of submission of bids, or the date of the Change Order, as applicable.

4. References on Drawings or in Specifications to "code" or "building code' not otherwise identified shall mean the codes specified above, together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction having authority over the project.

B. Other Applicable Laws, Ordinances and Regulations:

1. Work shall be accomplished in conformance with all applicable laws, ordinances, rules and regulations of Federal, State and local governmental agencies and jurisdictions having authority over the Project.

2. Work shall be accomplished in conformance with all regulations of Public Utilities and utility districts.

3. Where such laws, ordinances, rules and regulations require more care or greater time to accomplish Work, or require better quality, higher standards or greater size of products, Work shall be accomplished in conformance to such requirements with no change to Contract Time or Contract Sum, except where changes in laws, ordinances, rules and regulations occur subsequent to execution date of the Agreement.

4. Design-Builder shall not self-perform specialty contracting work defined in sections 7055 – 7059.1 of the California Business and Professions Code unless the Design-Builder has the specialty contractor’s license appropriate for the work performed. Otherwise, specialty contractors shall be retained by the Design-Builder to perform specialty work identified in the project scope.

1.05 PROJECT INSPECTIONS

A. Provision of inspectors by University, if any, or by the Department of Health Care Access and Information pursuant to this Section and Section 1.04 above shall be subject to the following:

1. Design-Builder shall allow inspectors full access to Project at all times.

2. Design-Builder shall not take any direction, approvals or disapprovals from inspectors.

3. Design-Builder shall not rely on inspectors to ensure Work is completed in accordance with Contract Documents.

4. Acts of omissions of any inspector (including without limitation inspector's failure to observe or report deficiencies in Design-Builder's Work) shall not relieve Design-Builder from responsibility to complete Work in accordance with Contract Documents.

1.06 DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION PROJECTS

A. Department of Health Care Access and Information (HCAI) is the agency having jurisdiction over all acute care medical project design and construction unless a Memorandum of Understanding (MOU) has been established assigning University staff to perform regulatory duties.

B. HCAI will approve an inspector for the Project who shall have full access to the Project at all times.

C. HCAI will require Verified Report forms to be filed per testing, inspection and observation form during construction and a final verified report at completion of the project. Separate verified reports are required from Consultants, Project Inspector, and Design-Builder.

D. HCAI will require a Building Permit for project submitted by University's Representative. No HCAI Building Permit fees are required to be paid by the Design-Builder.

E. HCAI will require Change Order Approval submitted by University's Representative.

F. HCAI will require a Licensed Design-Builder's Declaration from the Design-Builder.

G. HCAI projects shall comply with the 2016 California Administration Code.

1.07 DEFERRED APPROVAL

A. Where noted in the Contract Documents, certain items of materials and/or systems may require HCAI deferred approval pending submittals of shop drawings. For these items, Design-Builder shall submit details and structural calculations for anchorage, to comply with State of California Code of Regulations Title 24, table T17-23-J. Calculations shall be made by a licensed Structural Engineer registered in the State of California.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION – Not Applicable to this Section

END OF SECTION 01 41 00.1

SECTION 01 45 00.1

QUALITY CONTROL

PART I - GENERAL

1.01 SECTION INCLUDES

A. Design-Builder's Quality Control

B. Design-Builder’s Quality Control Plan

C. Quality of the Work

D. Inspections and tests by governing authorities

E. Inspections and tests by serving utilities

F. Inspections and tests by manufacturer's representatives

G. Inspections and Independent testing and Inspection Laboratories/Agencies

H. Design-Builder responsibilities in inspections and tests

I. Design-Builder’s responsibilities regarding the University’s testing laboratory

J. Test reports

K. Geotechnical engineer

1.02 RELATED SECTIONS

A. Section 013100.1 – COORDINATION

B. Section 014100.1 – REGULATORY REQUIREMENTS: Compliance with applicable codes, ordinances and standards.

C. Section 014550 – INSPECTION and Testing of WORK

D. Section 016100 – PRODUCT REQUIREMENTS: Product Options, substitutions, transportation and handling requirements, storage and protection requirements, and system completeness requirements.

1.03 DESIGN-BUILDER’S QUALITY CONTROL

A. Design-Builder's Quality Control: Design-Builder shall ensure that products, services, workmanship and site conditions comply with requirements of the Design-Build Contract Documents by coordinating, supervising, testing and inspecting the Work and by utilizing only suitably qualified personnel.

B. Quality Requirements: Work shall be accomplished in accordance with quality requirements of the Design-Build Contract Documents, including, by reference, all Codes, laws, regulations and standards. When no quality basis is prescribed, the quality shall be in accordance with the best-accepted practices of the construction industry for the locale of the Project, for projects of this type.

C. Quality Control Personnel: Design-Builder shall employ and assign knowledgeable and skilled personnel as required by contract or necessary if not prescribed to perform quality control functions to ensure the Work is provided as required.

D. The Design-Builder shall follow the procedures outlined in the Approved Quality Control Plan.

1.04 DESIGN-BUILDER'S QUALITY CONTROL PLAN

A. The Quality Control Plan shall address the procedures and methods the Design-Builder will utilize to control the quality of Work. At a minimum the Quality Control Plan shall include:

1. An organizational structure description, including Quality Control supervision and inspection reporting structure. Delineate personnel training and qualification activities.

2. Plans and procedures for testing and inspections to verify attributes delineated in the Contract Documents, including those specified in invoked codes and standards. Include documents that identify individual inspection or testing points and acceptance criteria, and include provisions for recording results and the responsible inspection/test personnel. This documentation shall be traceable to the particular material, items, processes, or systems evaluated. Testing procedures shall also provide for University provided laboratory testing, including notification requirements.

3. Procedures for identifying and contractually invoking the applicable technical and quality requirements delineated in the specifications on vendors supplying materials, parts and services within the scope of this Agreement.

4. Plans and procedures for receiving, inspecting, and accepting material and items; These shall include examination of physical condition and compliance to purchasing requirements, including markings for class type and grade, and conformance of supplied documentation. These shall also include provisions for:

a. Identifying, controlling, and processing non-conforming items, including notification of the University Representative.

b. Inspection of materials for authenticity to preclude counterfeit parts for items and attributes of concern identified by University Representative.

c. Verifying for compliance and traceability, maintaining, and turnover to the University, certificates of conformance and mill certificates required by the Contract Documents or codes/standards invoked, for material received.

5. Plan or procedures for punchlist and acceptance of the Work. The Design-Builder shall provide final certification of completion and compliance to the Contract Documents; and Inspection Acceptance from each Design Professional of Record, certifying that the Construction Work meets the requirements of the Contract Documents.

6. Provisions for identifying Defective Work. The Design-Builder shall bring to the University's Representative's attention for consultation and possible relief (use as-is, repair, or modification), those cases where correction within the specified requirements may introduce a significant schedule penalty, personnel hazard, or compromise to the quality of other installed items, or otherwise is impractical.

7. Controls to assure that only the current and approved design documents are utilized in the Work. This includes provisions for removing superseded versions from the work area, except where explicitly and prominently marked for information only, such as to retain annotated installation data. The Design-Builder work shall comply with the design documents. Field initiated design change shall be processed as provided in the Contract Documents, and shall not be implemented prior to written approval by University's Representative.

8. Detailed formal procedures or instructions for the performance of special processes, such as welding and concrete placement. These procedures/instructions and personnel performing special processes shall be qualified and certified as required by codes and standards invoked by the Contract Documents.

9. Controls providing for periodic calibration of test and measurement equipment, including unique equipment identification and calibration tracking.

10. Design-Builder shall maintain records documenting the implementation of the above activities, including tests, inspections, special process qualification and execution, vendor documentation, and Defective Work resolution. These records shall be indexed, protected, and retrievable for final turnover to the University.

11. The Design-Builder shall perform other routine verification and inspection activities to assure the requirements of the Contract Documents are implemented and the completed Work will be acceptable. The frequency and depth of these routine inspections and verifications shall be responsive to identified defective Work, changes in work complexity or other conditions that may affect the quality of the Work.

12. Identify all test and inspections that Design-Builder proposes to be conducted by the University.

1.05 QUALITY OF THE WORK

A. Quality of Products: Unless otherwise indicated or specified, all products shall be new, free of defects and fit for the intended use.

B. Quality of Installation: All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements and adjacent construction.

C. Protection of Completed Work: Take all measures necessary to preserve completed Work free from damage, deterioration, soiling and staining, until Acceptance by University.

D. Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code research report (ICC) requirements in preparing, fabricating, erecting, installing, applying, connecting and finishing Work.

E. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviation is acceptable and appropriate for the Project.

F. Verification of Quality: Work shall be subject to verification of quality by University's Representative and University's Consultant in accordance with provisions of the General Conditions of the Contract.

1. Design-Builder shall cooperate by making Work available for inspection by University's Representative, University's Consultant or their designated representatives.

2. Such verification may include mill, plant, shop, or field inspection as required.

3. Provide access to all parts of the Work, including plants where materials or equipment are manufactured, fabricated or stored.

4. Provide all information and assistance as required, including that by and from subcontractors, fabricators, materials suppliers and manufacturers, for verification of quality by University's Representative or University's Consultant.

5. Contract modifications, if any, resulting from such verification activities shall be governed by applicable provisions in the General Conditions of the Contract.

G. Observations by University's Consultants: Periodic and occasional observations of the Work in progress will be made by University's Consultant and their consultants as deemed necessary to review progress of Work and general conformance with design intent.

H. Limitations on Inspections, Tests and Observations: Neither employment of independent testing and inspection agencies nor observations by University's Consultant and their consultants shall relieve Design-Builder of obligation to perform Work in full conformance to all requirements of Contract Documents.

I. Acceptance and Rejection of Work: University's Representative reserves the right to reject all Work not in conformance to the requirements of the Contract Documents.

1. If initial tests or inspections made by University's Testing Laboratory or Geotechnical Engineer reveal any portion of the Work fails to comply with Contract Documents, or if it is determined that any portion of Work requires additional testing or inspection, additional tests and inspections shall be made as directed by University's Representative.

2. If such additional tests or inspections establish such portions of the Work comply with Contract Documents, all costs of such additional testing or inspection will be paid by University.

3. If such additional tests or inspections establish such portions of the Work fail to comply with Contract Documents, all costs of such additional tests and inspection shall be deducted from the Contract sum.

J. Correction of Non-conforming Work: Non-conforming Work shall be modified, replaced, repaired or redone by Design-Builder at no change in the Contract Sum or Contract time.

K. Acceptance of Non-Conforming Work: Acceptance of non-conforming Work, without specific written acknowledgement and approval of University shall not relieve Design-Builder of the obligation to correct such Work.

L. Contract Adjustment for Non-conforming Work: Should University or University's Consultants determine it is not feasible or in University's interest to require non-conforming Work to be repaired or replaced, an equitable reduction in Contract Sum shall be made by agreement between University and Design-Builder. If equitable reduction in Contract Sum cannot be agreed upon, a Directed Change Order will be issued and the amount in dispute resolved in accordance with applicable provisions of the General Conditions of the Contract.

1.06 INSPECTIONS AND TESTS BY GOVERNING AUTHORITIES

A. Regulatory Requirements for Testing and Inspection: Comply with California Building Code (CBC) requirements and all other requirements of governing authorities having jurisdiction.

B. Inspections and tests by governing Authorities: Design-Builder shall cause all tests and inspections required by governing authorities having jurisdiction to be made for Work under this Contract.

1. Such authorities include University's Building Inspection (code compliance), University's Fire Marshal’s office and similar agencies.

1.07 INSPECTIONS AND TESTS BY SERVING UTILITIES

A. Inspections and Tests by Serving Utilities: Design-Builder shall cause all tests and inspections required by serving utilities to be made for Work under this Contract. Scheduling, conducting and paying for such inspections shall be solely the Design-Builder's responsibility.

1.08 INSPECTIONS AND TEST BY MANUFACTURER'S REPRESENTATIVES

A. Inspections and Tests by Manufacturer's Representatives: Design-Builder shall cause all tests and inspections specified to be conducted by materials or systems manufacturers, to be made. Additionally, all tests and inspections required by materials or systems manufacturers as condition of warranty or certification of Work shall be made, the cost of which shall be included in the Contract Sum. Manufacturer’s Representatives shall provide a PDF electronic report indicating but not limited to work or materials that are missing, not installed correctly, damaged or need correction. Manufacturer’s Representatives shall issue a final PDF electronic report once all work and materials are installed correctly, functioning and in compliance with the Manufacturer’s Warranty.

1.09 INSPECTION BY INDEPENDENT TESTING AND INSPECTION LABORATORIES

A. Definitions:

1. The term "University's Testing Laboratory" means a testing laboratory retained and paid for by University for the purpose of reviewing material and product reports, performing material and product testing and inspection, and other services as determined by University.

B. University will select an independent testing and inspection laboratory or agency to conduct tests and inspections as called for in the Contract Documents and as required by governing authorities having jurisdiction.

1. Responsibility for payment for tests and inspection shall be as indicated in the schedule below. All time and costs for Design-Builder's services related to such tests and inspections shall be included in Contract Time and Contract Sum.

C. Design-Builder shall notify University, and if directed by University's Representative testing and inspection laboratory, when Work is ready for specified tests and inspections.

D. Design-Builder shall pay for all additional charges by testing and inspection agencies and governing authorities having jurisdiction due to the following:

1. Design-Builder's failure to properly schedule or notify testing and inspection agency or authority having jurisdiction.

2. Changes in sources, lots, or suppliers of products after original tests or inspections.

3. Changes in means, methods, techniques, sequences, and procedures of construction that necessitate additional testing, inspection, and related services.

E. Changes in mix designs for concrete and mortar after review and acceptance of submitted mix design. Test and inspections shall include, but not be limited to, the following:

Material Inspections and Tests		Paid by:
Anchor Bolts	Installation Inspection	University
	Torque Testing	University
Cast in Place	Slump Tests	University
	Compressive Strength Tests	University
Structural Steel	Welding Inspection	University
	High-strength Bolting Inspection	University

F. Test and Inspection Reports: After each inspection and test, one (1) PDF electronic report shall be promptly submitted to University's Representative, Design-Builder and to agency having jurisdiction (if required by code).

1. Reports shall clearly identify the following:

   a. Date issued

   b. Project name and Project number

   c. Identification of product and Specification Section in which Work is specified

   d. Name of inspector

   e. Date and time of sampling or inspection was conducted

   f. Location in Project where sampling or inspection was conducted

   g. Type of inspection or test

   h. Date of tests

   i. Results of tests

   j. Comments concerning conformance with Contract Documents and other requirements

   k. Test reports shall indicate specified or required values and shall include statement whether test results indicate satisfactory performance of products.

   l. Samples taken but not tested shall be reported.

   m. Test reports shall confirm that methods used for sampling and testing conform to specified test procedures.

   n. When requested, testing and inspection agency shall provide interpretations of test results.

o. Verification reports shall be prepared and submitted, stating tests and inspections specified or otherwise required for Project, have been completed and material and workmanship comply with the Contract Documents. Verification reports shall be submitted at intervals not exceeding six (6) months, at Substantial Completion of the Project, and at all times when Work of Project is suspended.

1.10 CONTRACTOR RESPONSIBILITIES IN INSPECTIONS AND TESTS

A. Follow the approved Quality Control Plan at all times through the Construction Work.

B. Tests, inspections and acceptances of portions of the Work required by the Contract Documents or by Applicable Code Requirements shall be made at the appropriate times. Except as otherwise provided, Design-Builder shall notify University's Representative to make arrangements for such tests, inspections, and acceptances. Design-Builder shall give University's Representative timely notice of all required inspections as outlined in Specification Section 014550 – INSPECTION and TESTING of WORK, Item 1.05, Scheduling Inspections – Notification Requirements.

C. If such procedures for testing, inspection or acceptance reveal failure of any portion of the Work to comply with requirements of the Contract Documents, Design-Builder shall bear all costs made necessary by such failure including those of repeated procedures, including compensation for University's Consultant's services and expenses.

D. If University and/or University's Consultants are to observe tests, inspections or make acceptances required by the Contract Documents, University and/or University's Consultant will do so promptly and, where practicable, at the normal place of testing.

E. Cooperate with testing and inspection agency personnel, University, University's Consultant's and their consultants. Provide access to Work areas and off-site fabrication and assembly locations, including during weekends and after normal work hours.

F. Provide incidental labor and facilities to provide safe access to Work to be tested and inspected, to obtain and handle samples at the Project site or at source of products to be tested, and to store and cure test samples.

G. Provide written notice to University's Representative and 48 hours in advance of operations of testing and inspection to allow for University’s Representative the opportunity to observe the testing and inspection.

H. If Work and the associated testing and inspection is not performed when scheduled, Design-Builder shall reimburse University for University's personnel and travel expenses incurred.

I. Design-Builder shall personally supervise all work and inspect all materials as they arrive for compliance with the Contract Documents and shall reject defective work and material without waiting for such rejection from others in authority.

1.11 CONTRACTOR RESPONSIBILITIES REGARDING UNIVERSITY TESTING LABORATORY

A. Secure and deliver to University's Testing Laboratory adequate quantities of representative samples of materials proposed for use as specified.

B. Submit to University's Representative the preliminary design mixes proposed for concrete and other materials, which require review, by University's Consultants and/or University's Testing Laboratory.

C. Submit copies of product test reports as specified.

1.12 TEST REPORTS

A. University's Testing Laboratory shall submit one (1) PDF electronic copy of all reports to the University's Representative, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

1.13 University will distribute one (1) PDF electronic copy of the reports to University's Consultants and Design-Builder. GEOTECHNICAL ENGINEER (If applicable or NOT USED)

A. University will retain and pay the expense of a Geotechnical Engineer to perform inspection, testing and observation functions specified by University. Geotechnical Engineer will communicate only with University. University's Representative shall then give notice to Design-Builder, of any action required of Design-Builder.

1.14 WORK COVERED PRIOR TO INSPECTION

A. If a portion of the Work is covered contrary to University's Representative's request or direction, or contrary to the requirements of the Design-Build Contract Documents, it shall, if required in writing by University's Representative, be uncovered for University's Representative's observation and be replaced at Design-Builder's expense without adjustment of the Contract Time or the Contract Sum.

B. If a portion of the Work has been covered, which is not required by the Design-Build Contract Documents to be observed or inspected prior to its being covered and which University's Representative has not specifically requested to observe prior to its being covered, University's Representative may request to see such Work and it shall be uncovered and replaced by Design-Builder. If such Work is found to be in accordance with the Design-Build Contract Documents, and additional cost and/or time have been incurred by Design-Builder, such cost and/or time shall be added to the Contract Sum and/or Contract Time by Change Order. Where the Design-Builder requests adjustment to either the Contract Time or Contract Sum, Design-Builder shall document and show that such per the requirements of the Design-Build Contract Documents.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION – Not Applicable to this Section

END OF SECTION 01 45 00.1

SECTION 01 45 10.1

SEISMIC CONTROL – HCAI

PART I - GENERAL

1.01 DESCRIPTION

A. Provide all required seismic restraints and calculations to ensure that the installation of all architectural, mechanical, plumbing, fire sprinkler and electrical equipment/components are in compliance with all applicable seismic codes, standards, and specific information listed herein.

1.02 QUALITY ASSURANCE

A. ASTM standards

B. 2019 California Building Code, Title 24 (CBC)

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data and installation instructions for each type of material listed in this Section including shop drawing and other documentation to comply to the requirement of this Section.

B. Submit special seismic certification (OSP) for mechanical and electrical equipment/components as noted on CBC 1705A.13.3.1. Design-Builder shall bear all costs associated with all tests, engineering calculations and documentation required to obtain HCAI approval in accordance with this section in a timely manner if the Design-Builder chooses to select equipment that does not already have special seismic certification as noted on the design documents.

C. Submit HCAI Pre-approved Manufacturer’s Certification (OPM) as noted on the design drawings with only one applicable OPM per application.

PART II - PRODUCTS

2.01 SEISMIC RESTRAINT REQUIREMENTS

A. SUMMARY

1. This section covers the seismic restraint requirements for suspended distribution systems, vibration and non-vibration isolated items, systems and/or related suspended equipment.

2. The **Design-Builder**’s Design Professionals are the designers of record (DOR) as referenced in this specification shall be the project architect, structural engineer, and the appropriate system engineer (e.g., electrical, etc.).

3. An HCAI OPM determined by the DOR shall be considered as the specified seismic design for this project. Other non-OPM designs may be submitted as an alternate if they meet or exceed all the requirements contained within these specifications, HCAI pre-approved service loads, installation applications, and engineering services.

4. Channel framing materials, fittings and related accessories shall be as indicated on the OPM and on the drawings. All channel members (trapezes and braces) shall be solid strut. Field drill bolt holes at 1/16" larger than bolt size as required for connections. Back-to-back struts shall be stitch groove welded or button welded.

5. To facilitate plan review and construction, all construction documents should include an equipment schedule identifying all applicable equipment, its classification (fixed, movable, mobile, other, countertop, interim or temporary) and reference to support and attachment per Pin 68-Table 1.

B. SEISMIC RESTRAINT DESIGN

1. The attachment supports and seismic restraints of suspended non-structural components and distribution systems listed below shall be designed to resist the total design seismic forces prescribed in the CBC.

   a. All equipment/components including but not limited to: electrical, mechanical, plumbing, fire sprinkler and architectural.

   b. Without referencing OPM or HCAI pre-approved seismic attachment and supports shown on the design document, seismic support and attachment shall be engineered and built by the applicable system contractor. Engineering shall be performed (signed & sealed) by a licensed California Structural Engineer and submitted to the DOR and HCAI for acceptance prior to installation. Cost to be borne by the contractor.

   c. Design and installation shall consider seismic relative displacement in accordance with ASCE 7-16-13.3.2.

   d. Pipes with hazardous contents including but not limited to medical gas, fuel oil, natural gas piping, etc., regardless of size and weight shall be seismically braced per the OPM or HCAI pre-approved design.

   e. Support and attachment requirements for fixed, interim, mobile, movable, other, and temporary equipment shall be in accordance with HCAI PIN 68.

2. Seismic restraint transverse and/or longitudinal spacing shall be in accordance with CBC and OPM and limited to the following:

   a. Seismic design forces equal to or less than the capacity of the building structure.

   b. 40' feet transversely and/or 80' feet longitudinally where pipes, conduits, and their connections are constructed of ductile materials (copper, ductile iron, steel, or aluminum and brazed, welded, or screwed connections).

c. 20’ feet transversely and/or 40’ feet longitudinally where pipes, conduits, and their connections are constructed of nonductile materials (e.g., cast iron, no-hub pipe, and plastic).

d. 20’ feet transversely and/or 40’ feet longitudinally for bus ducts and cable trays, baskets, channels.

3. Design-Builder shall not adopt, use, or otherwise implement the omission of any seismic restraints without prior review and acceptance by the designers of record. All submittals for omission of seismic restraints must include the following, and must be performed (signed & sealed) by a licensed California Structural Engineer and approved by HCAI;

   a. Project specific cover letter clearly indicating that said engineer has completely reviewed the project documents, and that the items/systems were designed individually and in coordination with all other trades and references the code section(s) where the omission of seismic restraints is allowed.

   b. Lateral motion of the supported items/systems shall not directly or indirectly impact adjacent life safety, emergency services and/or hazardous items/systems or their supports.

4. Seismic hardware brackets shall provide a (Captive) 360-degree connection that completely encloses or encircles the rod, anchor, bolt, fastener, etc. Open hook and/or open slot seismic hardware brackets shall not be allowed.

5. Seismic restraint assembly connections shall not incorporate the use of break-off bolts or nuts and pneumatic fasteners unless referenced in the OPM document.

6. Ceiling system shall not be used as a seismic restraint, sway brace and/or safety restraint material.

7. Non-seismic and/or safety restraints sway bracing shall meet or exceed that required for the attachment of seismic restraints to the building structure.

8. Seismic restraints shall be installed to provide a minimum of (2) two transverse and (1) one set of (2) two longitudinal braces per run and per the OPM document.

9. The accumulated load of multiple items at any given support (with or without seismic restraints) shall not overload the building structure and the support assembly.

10. Pipes, conduits, and other items attached to trapeze hangers shall be located uniformly along each individual trapeze hanger so that the accumulated load is evenly distributed.

11. Trapeze systems installed in a multi-layer configuration shall have seismic restraints designed and installed for each individual trapeze layer.

12. Design of supports, seismic restraints and anchorage to the structure shall consider all conditions that involve thermal, structural separation, relative displacement, building expansion and contraction.

13. SMACNA details shall not be used without prior approval by Structural Engineer of Record (SEOR).

C. ACCEPTABLE MANUFACTURERS

1. HCAI Pre-approved Certified Manufacturer (OPM)

D. ANCHORS, INSERTS AND FASTENERS

1. All anchors, inserts, fasteners, or connections to the structure shall be submitted to the structural engineer of record for review and acceptance prior to installation.

2. Do not use any anchor or insert in concrete or metal decking with concrete fill, which does not have one of the following:

a. ICC Evaluation Report

b. HCAI pre-approval

3. Cast-in-place inserts that contain internal threads shall include the installation of a jam or lock nut to secure the connection of the vertical support rod to the cast-in-place insert.

4. Cast-in-place inserts that allow for horizontal adjustment shall not be allowed unless an engineered solution is provided to assure positive captured positioning and secured attachment.

5. Do not use powder driven and power driven (Shoot-In) fasteners, expansion nails or internally threaded anchors in concrete or metal decking with concrete fill without prior scanning of the slab and wall for clearances, and to prevent damages to embedded electrical conduits and/or mechanical piping and reinforcing steel.

6. All beam clamps shall be constructed of malleable iron or steel. All single flange mounted beam clamps shall include a retaining strap or J-hook and must be submitted to the project structural engineer of record of review and acceptance prior to installation. Beam clamps shall not be used to resist seismic loads.

E. FIELD QUALITY CONTROL

1. Inspection of seismic restraints by the Inspector of Record (IOR), and/or Authority Having Jurisdiction (AHJ).

2. Special inspection for special seismic certification per CBC 1705A.12.4.

PART III - EXECUTION

3.01 SEISMIC ANCHORING AND RESTRAINTS

A. Equipment anchors:

1. All equipment shall be anchored. Anchor equipment per details shown on the drawings where provided.

2. Anchor installation shall be in accordance with the current ICC report.

3. Anchor details provided are based on specific equipment information. Submit design for approval for anchoring of equipment which varies from design.

B. Conduit supports:

1. Conduits shall be supported and braced per CBC.

C. Lighting fixture supports:

1. Provide independent seismic support system per CBC.

D. Minimum clearance:

1. Diagonal braces and hanger supports shall maintain 6 inches minimum clearance from unbraced ducts and conduits, and 1-inch minimum clearance from braced ducts and conduits.

2. Except for sprinklers installed using flexible sprinkler hose, installed clearance shall be 3 inches between any sprinkler drop or sprig and permanently attached equipment and other distribution systems, including their structural supports and bracing.

3.02 INSTALLATION AND TESTING OF MECHANICAL ANCHORS:

A. Where permitted in other Sections of this specification, drilled-in expansion-type anchors or other post-installed concrete anchors may be used in hardened concrete.

B. All post-installed concrete anchors shall be tested. Testing shall be performed in the presence of the Inspector of Record. Number of anchors to be tested shall be as shown on the drawings with a minimum of 50% of anchors installed and at each support. Testing shall be performed by torque or pull test, and to the values noted on the drawings. Test loads, frequency, and acceptance criteria of post-installed anchors in concrete shall be in accordance with CBC 1910A.5.

C. Internally threaded shell-type anchors and displacement-controlled anchors (e.g., drop-in anchors, screw anchors, adhesive anchors, etc.) shall not be tested using a torque wrench.

D. Screw anchors shall be installed with a calibrated torque wrench and may be loosened a maximum of one full turn to facilitate the positioning of a tension test collar. Following the tension test, the anchor shall be re-torqued in accordance with the manufacturer’s installation instructions.

E. Tension test of chemical/adhesive anchors and power actuated fasteners shall be in accordance with CBC and as noted on the drawings.

F. All testing procedures shall be in accordance with CBC 1910A.5, and as noted on the drawings.

G. Locate existing reinforcing steel and conduits in slabs and walls prior to drilling holes for the mechanical anchors.

END OF SECTION 01 45 10.1

SECTION 01 56 10.1

AIRBORNE CONTAMINANTS CONTROL

PART I - GENERAL

1.01 SUMMARY

A. Section Includes: University airborne contaminants control policy procedures and an Infection Control Risk Assessment (ICRA) and plan.

1.02 POLICY

A. Airborne contaminants control is critical in all hospital areas, as well as non-hospital areas. Design-Builder shall limit dissemination of airborne contaminants produced by construction-related activities, including dust, chalk, powders, aerosols, fumes, fibers and other similar materials, in order to provide protection of immuno-compromised and other patients, staff, diagnostic operations, or sensitive procedures or equipment, from possible undesirable effects of exposure to such contaminants.

1. Construction activities causing disturbance of existing dust, or creating new dust, or other airborne contaminants, must be conducted in tight enclosures cutting off any flow of particles into patient areas.

2. Ceilings, walls in Protection Areas and other areas in patient care areas as indicated on drawings must be secure at all times.

B. An Infection Control Risk Assessment (ICRA) and plan to mitigate dust is required for each project. The risk assessment identifies patient groups at risk for infection due to construction dust. The dust mitigation plan is designed to contain dust within the construction zone.

C. If visible mold is found during construction, renovation, or repairs, any ICRA in-hand is invalid and risk assessment shall be performed to reevaluate ICRA levels and the work plan prior to restart of the work. Upon discovering, seal any openings, stop work and notify the University's Representative immediately. This includes projects that are already considered and operating under a Class IV.

D. Related Sections:

1. Section 017300 – CUTTING AND PATCHING: Removal of debris may be outside of normal work hours and shall be in tightly covered containers.

2. Section 013500 – SPECIAL PROCEDURES: Perform work in accordance with requirements of this section.

3. Section 013900 - GREEN BUILDING POLICY IMPLEMENTATION

4. Section 015100 – TEMPORARY UTILITIES: Provide high efficiency particulate air (HEPA) filters as specified in Section 015610.1, negative pressure ventilation, or special control of existing system as determined by University's Representative.

5. Section 015600 – TEMPORARY BARRIERS, ENCLOSURES AND CONTROLS: Extend barriers above ceilings as required to seal off and contain airborne contaminants.

6. Section 015600 – TEMPORARY CONTROLS: Contain waste materials during removal; bagging, wrapping, and transporting.

7. Section 017400 – CLEANING: Use wet cleaning methods and HEPA filtered vacuum cleaners as required to minimize release of airborne contaminants. Contain waste materials, debris and rubbish as noted above. Disinfect Containment and Protection Areas as directed by University's Representative

E. Dust Mitigation Requirements

1. An ICRA Daily Inspection Log is attached at the end of this section under UC Davis Health Construction Dust Infection Prevention Best Practice Standard. The Design-Builder must complete this daily checklist and leave posted for the duration of the project at the outside of the containment. Any areas of non-compliance must be specifically listed and addressed for corrective measures when identified. A copy of the daily ICRA inspections shall be submitted to the University’s Representative at an agreed upon time between the Design-Builder and the Project Manager.

F. UC Davis Health Construction Dust Infection Prevention Best Practice Standard

1. The UC Davis Health Construction Dust Infection Prevention Best Practice Standard is attached at the end of this Section and augments information and requirements of Section 015610.1.

2. Refer to the UC Davis Health Construction Dust Infection Prevention Best Practice Standard per requirements for.

   a. Responsibilities

   b. Procedures

   c. Training And Certifications

   d. Containment Design & Construction

   e. Materials And Equipment

   f. Cleaning Procedures

   g. Documentation

   h. Containment Verification

   i. Inspection Criteria

j. And other Dust Infection Prevention Measures

1.03 SUBMITTALS PHASE ONE AND PHASE TWO

A. Schedules: Develop Schedule that incorporates the requirements and durations of work areas subject to containment of airborne contaminants. Include this work in the Project Schedule per 013200.

B. Detailed Work Plan: Develop Detailed Work Plan Drawings including but not limited to Work Area/ Floor Plan, Path of Travel, Egress and Exiting, Rated Construction and details of construction of necessary temporary barriers, and description of procedures to be used to achieve and maintain control of construction-related airborne contaminants.

1. As applicable, the drawing should include the following: location of ante room(s), location of manometer, location of negative air units exhausting outside the building including number of negative air units and sizes (cfm), and location of sealed blocked off areas of corridors. Any impacts to corridors will need to be approved via ILSM (see specification section 013500 for details).

2. Identify the areas surrounding the project area, assessing potential impact of construction on the patient care area. Identify the specific uses (e.g., patient rooms, medication room, operating room, etc.)

3. Identify the potential impacts including but not limited to.

a. HVAC, Ventilation (outages, air flow directions, clean to dirty, air intakes/exhausts, air balance, disruptions, etc.).

b. Plumbing (outages, hand-washing access, work area, flushing/draining systems, charging systems, disinfecting systems, etc.).

c. Electricity (outages for critical equipment, special ventilation areas, monitoring).

d. Identify Airborne infection isolation rooms and patient rooms with immuno-compromised conditions that will require High-efficiency Particulate Air (HEPA) filters.

4. Identify containment measures including but not limited to types of barriers to be used. HEPA filtration to be used. Renovation/construction areas should be isolated from occupied areas during construction and provide clean-to-dirty airflow with respect to surrounding areas.

5. Assess preventive maintenance requirements. Will the service/maintenance frequency and level of service of systems need to be modified during construction (e.g., ventilation filters, air intake system, potable water, plumbing, doors). Work Hours: Can or will the work be done during non-patient care hours?

6. Include provisions for but not limited to traffic flow, entrance, egress, control, debris removal and housekeeping.

7. Work Hours: Identify areas of work that will be done during non-patient care hours. Refer to Sections 011100.1 Summary of Work and Section 011400 Work Restrictions.

8. The Detailed Work Plan shall be reviewed and approved by the University's Representative prior to the start of Construction.

C. Project Experience and Training: In order to be considered qualified to work with negative pressure containments; Design-Builder must demonstrate experience by providing either of the following:

1. Previously completed, documented negative pressure containment work in a healthcare facility along with an owner reference. Minimum documentation shall include project descriptions and photographs or containment schematics.

2. Documentation that the contactors' proposed foreman has successfully obtained one of the following from the American Society for Healthcare Engineering (ASHE):

a. Certified Healthcare Constructor (CHC) Certification

b. Health Care Construction (HCC) Certificate

c. Managing Infection Prevention During the Construction & Operation of Health Care Facilities Course Completion

1.04 SUMITTALS PHASE THREE

~~A.~~ Submit to Project Inspector or Post at Anteroom Daily ICRA Inspection Log.

B. Schedules: Submit work areas and procedure schedules for containment of airborne contaminants. Include this work in the Project Schedule per 013200.1.

1.05 QUALITY CONTROL and REQUIREMENTS PHASE ONE and PHASE TWO

A. ICRA Design Meetings: The Design-Builder shall attend ICRA Design Meetings regularly held every **[2] or [4]** weeks to review the exterior and interior areas requiring containment as well as areas adjacent to the work. The meetings shall assess potential impacts, risks, and precautions at the areas of work in order to minimize the impact on the facility. The University's Representative shall facilitate the meetings and coordinate with UC Davis Heath Departments including but not limited to PO&M, EH&S and Infection Control Nurse.

1. The Design-Builder shall use information obtainable in the ICRA Design Meetings to develop the Detailed Work Plan.

2. As Part of the ICRA Design Meetings the Design-Builder shall provide updates for the Detailed Work Plan and Schedule.

1.06 QUALITY CONTROL PHASE THREE

A. Pre-construction Meeting: Before any construction on site begins, Design-Builder's Superintendent is required to attend a mandatory pre-construction orientation session held by University's Representative for a review on precautions to be taken.

B. Review by PO&M HVAC staff for possibility to disconnect air supply and return into the project area. Negative air machines shall be connected to separate electrical circuits.

C. Notification: A minimum of fourteen (14) calendar days written notification to University's Representative of possible construction activity causing airborne contaminants in Protection Areas.

1.07 DEFINITIONS

A. Containment Areas: As determined by University's Representative and if shown. Includes all areas of construction activities, adjacent staging and storage areas, and passage areas for workers, supplies and waste. The containment area includes ceiling spaces above and adjacent to construction activities.

B. Critical Openings – Include all potential paths for air and contaminants to move from the project area to outside of the project area and include: supply registers, return registers, exhaust registers, doors, windows, and other openings within the area where contaminants can escape. Sealing the critical openings can be accomplished with tape, plastic, hard barriers and a combination of these materials to seal airtight the critical opening.

C. HEPA System DOP Testing – An ANSI / ASTM recognized method to test the integrity of a High Efficiency Particulate filter which filters out 99.97% of particles 0.3 micrometers or larger. DOP testing is performed by specialty Design-Builder's. The Health System requires that HEPA systems be tested to the ANSI / ASTM standard as delivered prior to their use onsite as further described in this Standard.

D. ICRA (ICRA) Infection Control Risk Assessment - An evaluation of patient risk based on a matrix of the patient population health in the work area and the invasiveness of the project. This assessment ultimately generates a permit (ICRA permit) issued by Infection Prevention requiring compliance with one of four precaution levels. The ICRA program is documented in Hospital P&P 2120. ICRAs apply to patient care areas and their adjoining contiguous areas. All ICRA evaluations are the sole responsibility of the Health System Infection Prevention Department based on an application by the Project Manager. ICRA Permits expire and can be extended subject to approval by the Infection Prevention Department.

1.08 PERFORMANCE REQUIREMENTS

A. University's Representative's Responsibilities:

1. Statement of Requirements: Description of graphic and written information to identify the preliminary areas requiring containment shall be part of the Contract Documents provided by the University at the start of the project. The Design-Builder shall investigate and determine the actual scope and area of containment, and the development of the Detailed Work Plan accordingly.

2. Coordinate any testing and monitoring as necessary with EH&S or a third party.

B. Design-Builder Responsibilities:

1. Provide specific means and methods of achieving and maintaining control of airborne contaminants during construction based on the Detailed Work Plan.

2. Implement all mitigation measures as listed in the UC Davis Health Construction Dust & Hazardous Materials Inspection Worksheet, which have been reviewed and approved by Infection Prevention and EH&S. The work shall be performed in accordance with the specific ICRA/Dust Mitigation Plan, Class III or IV and approved ICRA Permit. Design-Builder shall ensure that all workers are trained and adhere to the mitigation requirements including provisions indicated per UC Davis Health Construction Dust Infection Prevention Best Practice Standard attached at the end of this Section.

3. Design-Builder shall notify University's Representative in writing, a minimum of fourteen (14) calendar days prior to starting construction activity, which might be expected to produce excess levels of airborne contaminants in containment area so that additional precautions may be taken.

4. If project construction activities will occur beyond the expiration date identified in the ICRA Permit, Design-Builder shall coordinate with University's Representative to request extension of the ICRA Permit utilizing the ICRA Permit Extension Form.

PART II - PRODUCTS

2.01 MATERIALS

A. Polyethylene: Polyethylene used for critical barriers and for sealing walls, floors or ceiling systems shall be a minimum of 6 mil thickness and fire retardant type listed by Fire Underwriters Laboratories, Griffolyn #T55R with Griffolyn fire retardant tape, or equal.

PART III - EXECUTION

3.01 CONTAINMENT CRITERIA

A. The outside of the work containment shall have present: ICRA Permit, Interim Life Safety Measure (ILSM) Permit, Daily ICRA Inspection Forms, manometer, entry warning sign, Containment Entry Log (provided by the Design-Builder) that lists all persons who enter the containment regardless of affiliation, including all University employees, an emergency telephone number of person to call 24 hours a day in the event of a negative pressure alarm or other issue, and that an Environment of Care Incident Report under the category of “Construction Dust” must be filed by area nursing management in case of constant or annoying alarms.

B. The interior of the containment area shall be cleaned on a continual basis daily. Hard surface floors in work area, adjacent hallways and passage areas require vacuuming with HEPA-filtered vacuum cleaners and frequent wet-mopping during demolition and construction; protect adjacent carpeted areas with plastic and plywood and vacuum with HEPA-filtered vacuum cleaners. Only an EPA Listed Germicide approved by the UC Davis Health Infection Prevention shall be used on the project site.

C. Regardless of containment strategies, execute work by methods to minimize raising dust from construction operations. Water may be used to assist in controlling airborne dust.

D. Full containment

1. All surfaces in the containment area except surface where work is to occur must be covered in plastic unless they are non-porous, smooth, and accessible for cleaning.

2. Sealing of Openings: Use tape or other impenetrable sealant to seal barrier wall seams, cracks around window and door frames, exhaust system ductwork, pipes, joints and ducts. Use of spray glue is not acceptable to be used inside of the building.

3. Design-Builder must block off existing ventilation supply registers, return registers and exhaust registers in the construction area.

4. All polyethylene and other materials used for temporary enclosures shall be at least 6 mil thickness and fire-retardant type. Zip poles or other easily removable supports shall be used for projects extending beyond one work shift. Temporary walls with metal stud framing may be required for long term projects and must be approved by the Project Manager. All doors leading into the containment area shall utilize zippered doors for control of the air flow and closing the plastic doors.

E. Critical seal of areas

1. Use tape or other impenetrable sealant to seal barrier wall seams, cracks around window and door frames, exhaust system ductwork, pipes, joints and ducts. Use of spray glue is not acceptable to be used inside of the building.

F. Cubes

1. Mini-containments (pop-up cubes) which are designed to have at most 1-2 people are means of control to access attic spaces, wall spaces and subfloor spaces usually at defined entry points such as access hatches or above a drop-in ceiling system. Cubes are reviewed and approved by the University's Representative on a case by case basis.

G. Glove Boxes

1. A glove box can be used for some work where a HEPA filtered vacuum is attached to the glove box when a small area of work is to be performed. A glove bag is attached to the box enclosure to allow the worker to make small openings by drilling or cutting within the negative pressure glove box. Glove boxes are reviewed and approved by the University's Representative on a case by case basis.

H. Shrouded tools

1. Shrouded tools can be used for some work. A HEPA (DOP Tested) filtered vacuum is attached to the shroud. Shrouded tools are reviewed and approved by the University's Representative on a case by case basis.

3.02 NEGATIVE AIR CRITERIA

A. Under no circumstances shall the HEPA filtered air be discharged into existing HVAC returns, exhaust ducting or building plenum spaces.

B. When the air from the HEPA filtered negative air unit exhaust cannot be directed outside of the building due to no windows in the vicinity of the work or if impractical, all HEPA filtered negative air units shall be exhausted to a location agreeable to the PM. Each HEPA unit shall be plugged into a separate electrical circuit to provide temporary redundancy should one unit fail or due loss of electrical power. The PO&M Electrical shop shall inspect and test each circuit connected to the HEPA negative air unit prior to use.

C. When the air from the negative air units is exhausted inside of the building, the exhaust air from negative air unit shall be directed into a "diffusion cube" constructed of pleated filters to disperse the air in a manner that does not raise dust or blow air directly onto patients, staff or visitors. The Design-Builder shall consider and install charcoal filters in the negative air units to control smells/odors associated with the construction.

D. Negative air units shall be positioned as far from the entry ante room containment as possible for distribution of air flow throughout the project area. The number of negative air units shall be to provide sufficient negative pressure and for a minimum of at least four (4) air changes per hour of the volume of the entire work containment.

E. Dual HEPA Units operating in parallel may be required for redundancy in high-risk areas.

F. DOP testing of HEPA equipment

1. Negative air units and HEPA filtered vacuums are to be challenge tested onsite by the DOP test method by a third party prior to being placed in service, after a HEPA filter change, when dropped or damaged or moved from the project site. Only HEPA systems that pass the challenge DOP testing can be used on the project. All HEPA equipment shall be tested per ANSI/ASME N510 Section 10 to ensure 99.97% efficiency at 0.3 micrometer mean aerodynamic diameter.

2. The entire piece of HEPA equipment shall be challenge tested, not just the filter media. The University's Consultant or EH&S shall witness the HEPA challenge testing procedure in entirety. Once the HEPA system passes the challenge testing and passes, the HEPA equipment may be used at the location tested for a period not to exceed one year. The testing label shall remain on the HEPA equipment and remain legible. Re-testing of the HEPA equipment is required annually, if the piece of equipment is transported out of the building to another building location on the campus, if dropped, or otherwise subjected to forces that might unseat the HEPA filter, damaged by water or laceration of the filter or if HEPA filter maintenance or adjustments are performed.

3. When utilizing HEPA Filtered Vacuums for glove boxes or shrouded tools these HEPA Vacuums must be DOP tested.

3.03 NEGATIVE AIR MONITORING CRITERIA

A. Fully Monitored Negative Air Maintaining -0.020" Water Column (in-WC)

1. Build containment with negative air machines capable of maintaining a pressure differential of -0.020 in-WC across all critical barriers

2. Demonstrate negative pressure is achieved continuously (24/7) by means of an electronic manometer sensitive to measure down to -0.020" wp. An Omniguard IV recording manometer is recommended as the standard instrument for containment pressure monitoring, but other electronic manufactured models with similar sensitivities at low pressures and recording capabilities are acceptable.

B. Hybrid Monitoring and Visual Verification

1. Build containment with negative air machines capable of maintaining a pressure differential of -0.020 in-WC across all critical barriers.

2. During the course of construction, the scope of work may dictate removal of work (e.g. Ceilings or drywall) that would make it difficult to maintain -0.02 in-WC of negative pressure. During working hours Visual Verification of negative pressure may be used in lieu of the -0.02 in-WC requirement with electronic monitoring.

3. At the end of shift all openings must be sealed to bring the containment back to the -0.020 in-WC requirement.

C. Visual Verification

1. The containment shall be visually inspected to verify the plastic is bowed inward to the project area. Tell tail ribbon may also be used to confirm negative pressurization. Visual Verification of negative pressure without the use of a manometer shall be performed upon first entry to the work area, during the course of the work, especially if there are any changes to the work space that may change the negative pressure, prior to taking any breaks and at the end of the work period.

3.04 ADDITIONAL CONTAINMENT CRITERIA

A. Ante Room

1. An ante room is a separate chamber attached to the containment area with zippered doors to allow entry and exit into the containment area. Entry into the containment area shall be only via the ante room. The ante room is commonly constructed of zip poles or equivalent, plastic and tape. The ante room is sized for each project to allow workers and equipment to be moved into and out of the containment area. A sticky mat is required in the ante room for workers and carts on wheels to use when existing the ante room from the containment area. The zippered doors are to remain closed or adjusted slightly open as necessary to allow negative pressure to be maintained at least -0.020 in-WC.

2. The ante room shall have a sticky mat present which is intended to remove any debris from the bottom of work shoes before leaving the ante room into the public area. The sticky mat is not intended to clean debris from the bottom of disposable coveralls or from booties. The sticky mat layers shall be replaced many times during a work shift when work involves movement of many workers and supplies out of the containment area. The Design-Builder is responsible for removing a dirty sticky mat and replacing it with a clean one when it is necessary.

3. Workers entering into the containment area will put on a full body disposable coverall with booties inside of the ante room before entering the containment area. Entry into the ante room requires one of the two zippered doors to be opened at one time to maintain the required negative pressure. After entering the ante room, the zipper shall be closed before leaving the ante room into the containment area.

B. Air Scrubbing

1. The Design-Builder shall place additional HEPA filtered fan units (negative air unit) inside of the project work area and operate them in recirculation mode or “scrub mode” near the final cleaning phase of the project to aide in additional particulate cleaning of the space. These units will circulate air internal to the containment area and scrub the air to reduce the total airborne particle concentrations inside of the containment area.

C. Disposable Coveralls and Booties

1. Disposable coveralls are required in all Class IV containment areas and selected to provide protection of street clothes from particulates generated inside of the containment area. Disposable coveralls shall be changed if they become ripped and are no longer serviceable.

2. Proper use of the disposable coveralls, booties and use of the sticky mat shall be followed at all times for all workers and UC Davis Health employees, when it is required by the ICRA Permit. At no time shall workers leave the containment area wearing disposable coveralls and booties. They are to be removed in the ante room or immediately in front of the ante room within the containment area if it is free and clean of debris. The workers shall remove all disposable coveralls and booties and place them in the plastic garbage bag and leave the ante room after walking on the sticky mat.

3.05 CONTAINMENT SET UP

A. Notify University's Representative forty-eight (48) hours prior to containment set up.

B. Build containment in compliance with ICRA, drawings and plans.

C. Notify University's Representative and EH&S for inspection prior to start of work. Before any demolition or construction begins, all Protection Areas (infection control areas), control measures put in place and work plan by the Design-Builder will be inspected by the University's Environmental Health & Safety Personnel, or by a designated representative of the University. Work cannot begin until the containment area has been inspected and approved, meeting all of the provisions of the ICRA Permit.

3.06 REMOVAL OF CONTAINMENT

A. Provide thorough cleaning of existing surfaces, which become exposed to dust, before leaving the containment area and before allowing staff and the public access to the project area.

B. Final cleaning of the containment area requires diligent HEPA vacuuming of all horizontal surfaces and wet wiping all surfaces. Clean towels, sponges, cloth rags or other means shall be used with clean water to effectively clean all surfaces within the containment area. Use of a measured solution of an EPA Listed Germicide is required as part of the final detail cleaning.

C. Additional HEPA filtered negative air units may be installed for scrubbing of particles (see 3.05 B).

D. Coordinate with the University's Representative to call for a final visual inspection of the containment area. The final visual inspection will be made after the **[**Design-Builder has thoroughly cleaned the entire containment area. The Design-Builder will be allowed to remove the containment barriers after the interior has passed the visual inspection for cleanliness.

E. Particle count assessment may be made inside of the containment area by the University's Representative as part of the final visual inspection process in addition to the final visual inspection. Particle testing will include testing the airborne concentration of various particle sizes compared to the concentration outside of the containment area. If particle counts inside of the containment area are significantly greater than outside of the containment area, the Design-Builder shall continue to scrub the air inside of the project area with HEPA filtered negative air units and conduct additional surface cleaning until subsequent particle testing has demonstrated particle concentrations inside of the containment area are not significantly greater than particle concentrations immediately outside of the containment area.

3.07 ENTRY/EGRESS

A. Entry into the project containment area shall be through the ante room. Entry into the ante room requires one of the two zippered doors to be opened at one time to maintain the required negative pressure. After entering the ante room, the zipper shall be closed before leaving the ante room into the containment area. Equipment and supplies brought into the containment area shall be in sealed leak tight containers inside of rolling covered carts. Equipment, tools and supplies brought into the building shall be clean and free of dust, debris, mold and other contaminants. Cardboard products shall not be brought into the containment area if they are water damaged or have suspect mold growth.

B. All HEPA equipment when transported into and out of the containment area shall be cleaned of all debris on the surfaces and shall have the intake openings sealed with plastic and duct tape.

C. All workers leaving the containment area shall leave in clean clothes. At no time shall disposable coveralls or booties be worn when leaving the containment area through the anteroom into the public area. The workers shall clean all gross particulate debris from the coveralls using a HEPA filtered vacuum. Disposable coveralls can be taken off after gross debris has been removed from the disposable coveralls. The worker shall remove the disposable coverall inside of the ante room by rolling the disposable coverall inside out and then place it into a garbage container (plastic bag) located inside of the ante room or just inside of the project work area.

D. All equipment and supplies leaving the containment area shall be cleaned of all dust and debris before leaving the containment area. Removal of supplies, materials and waste debris from the containment area shall be using tightly covered containers/carts that contain the waste material. The wheels of carts shall be cleaned on a frequent schedule to minimize track-out of debris as they are removed from the containment area. All waste material shall be in sealed leak tight containers. If plastic bags are used, they shall be 6 mil thick at a minimum.

3.08 ENFORCEMENT

A. Failure to maintain required containment will result in issuance of written warning; if situation is not corrected within eight (8) hours of receipt of warning, University will have cause to stop the work as provided in Article 2.1 (if Brief Form) or 2.3 (if Long Form) of the General Conditions. Any egregious violation of safety requirements shall be grounds for Immediate Work Stoppage.

3.09 Refer to the following Attachments

A. Infection Control Risk Assessment (ICRA) with Matrix of Precautions for Construction & Renovation: 3 Pages.

B. Infection Control Construction Permit: 1 Page.

C. UCDH Construction Dust & Hazardous Materials Inspection Worksheet: 1 Page.

D. ICRA Permit Extension Request and Instructions: 2 Pages.

E. UC Davis Health Construction Dust Infection Prevention Best Practice Standard: 23 Pages including.

1. Appendix A: Inspection Documentation Form and Daily Inspection Log.

2. Appendix B: Entry Warning Sign with Project Manager Contact.

3. Appendix C: Staff Education Poster.

END OF SECTION 01 56 10.1

SECTION 01 77 00.1

CLOSEOUT PROCEDURES

PART I - GENERAL

1.01 SECTION INCLUDES

A. Project Closeout Procedures

B. Contract Closeout Procedures

C. Punch List of Incomplete Work or Corrections

1.02 RELATED SECTIONS

A. Section 013100.1 – COORDINATION

B. Section 013300.1 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES: Administrative general requirements for submittals.

C. Section 013900 – GREEN BUILDING POLICY IMPLEMENTATION

D. Section 015600 – TEMPORARY BARRIERS, ENCLOSURES AND CONTROLS: Removal of Controls.

E. Section 017400 – CLEANING: Final Cleaning.

F. Section 017800.1 – CLOSEOUT SUBMITTALS

1.03 FINAL COMPLETION ACTIONS

A. On Application for Payment that coincides with date Substantial Completion is claimed, show 100% completion for portion of Work claimed substantially complete.

B. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

C. Notify the University’s Representative fourteen (14) calendar days prior to the Project being ready for permanent cores and keying.

D. Complete start-up testing and Commissioning of systems, and instruction of University personnel. Remove temporary facilities from site, along with construction tools, mock-ups, and similar elements.

1.04 SUBSTANTIAL COMPLETION REVIEW

A. Preliminary Punch List Review:

1. Design-Builder shall provide an electronic file as indicated in Item 1.04, C., (Preliminary Punch List) of items not installed, to be completed, not functioning correctly or to be corrected. The list shall include the anticipated dates of when the work is to be installed, completed or corrected.

2. Organize the List per Item 1.04, C.

3. List shall identify items by location (e.g., room number and name) and consecutive number (e.g., 307-5 might identify item 5 in room 307, Roof-4 would identify item 4 on Roof).

4. Segregate architectural, plumbing, HVAC and electrical Work on separate lists.

5. University's Representative and Design-Builder shall conduct a brief walk-through of Project to review scope and adequacy of list.

B. Design-Builder's Certification: When determined by Design-Builder that Work is substantially complete, Design-Builder shall notify University's Consultant and University's Representative.

1. Submit to University's Representative written certification that:

a. Contract Documents have been reviewed.

b. All portions of Work have been carefully inspected.

c. Work is complete in accordance with Contract Documents.

d. Equipment and systems have been commissioned, tested, adjusted and balanced and are fully operational.

e. Indicate Operation of systems that have been demonstrated to University personnel and which systems have not been demonstrated to University personal.

f. Work is ready for University's Consultant's Substantial Completion review.

2. Provide minimum fourteen (14) calendar days' notice to University's Representative prior to desired date for Punch List review.

C. Organization of List (Punch List):

1. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Design-Builder that are outside the limits of construction.

2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

3. Format Requirements: Provide the following:

a. Organized electronic file that is able to be filtered or queried by the following categories:

1) Contractor or Subcontractor

2) Building Area/Floor if applicable

3) Room Number or specific interior or exterior area.

4) Photo Number if applicable

5) Open or Closed

6) Columns for use by University’s Representative

a) Responsible Design Consultant

7) Comments

b. Other Punchlist Software may be used if approved by the University’s Representative.

c. Include the following information at the top of each page:

1) Project name and Number.
2) Date.
3) Name of University's Representative.
4) Name of Design-Builder.
5) Page number.

D. Punch List Review: University's Representative and University's Consultants as may be required, will attend a Contract closeout review, and conduct a walk-through of Project to review Design-Builder's list of items to be completed and corrected (Punch List). Design-Builder and University's Consultant shall note deficiencies, if any.

1. Design-Builder shall prepare list and record additional items as University's Representative may determine require completion and correction from walk-through.

a. If deficiencies are noted University's Representative and University's Consultant shall promptly notify Design-Builder in writing, listing observed deficiencies.

b. If no deficiencies are noted, or when noted deficiencies are removed from the Punch List, University's Representative shall promptly notify Design-Builder.

2. Design-Builder shall edit the electronic file and distribute list with University's Representative and University's Consultant's additions.

3. Design-Builder shall remedy deficiencies.

4. Costs of additional visits to site by University's Consultants to review completion and correction of Work shall be deducted from the Contract Sum.

E. Uncorrected Work: Refer to requirements specified in SECTION 014500.1 – FIELD QUALITY CONTROL regarding Contract adjustments for non-conforming work.

F. Cleaning and Clearing: Prior to Substantial Completion review, execute cleaning and clearing site of temporary facilities and controls, as specified in SECTION 015600 – TEMPORARY BARRIERS, ENCLOSURES AND CONTROLS and SECTION 017400 CLEANING

G. Testing and Inspection: Prior to Substantial Completion review, complete all tests and inspections and submit applicable reports and approvals. Provide commissioning of building systems per Section 013900 GREEN BUILDING POLICY IMPLEMENTATION.

1. Complete materials tests and inspections.

2. Complete commissioning, testing, inspection, balancing, sterilization and cleaning of plumbing and HVAC systems.

3. Complete commissioning, testing and inspection of electrical system.

4. Complete commissioning and operational tests of equipment.

5. IF HCAI PROJECT: Submit electronic file of Design-Builder's Final HCAI Verified Reports to University's Representative certifying completion of the Work in conformance with the Contract Documents. Report forms will be supplied by University's Representative.

H. Acceptance of the Work shall not relieve Design-Builder of any responsibility for defects that develop during the guarantee period and are caused by Design-Builder's failure to perform work in accordance with requirements of Contract Documents.

1.05 FINAL COMPLETION SUBMITALS (See 017800.1 CLOSEOUT SUBMITTALS)

1.06 STATEMENT OF ADJUSTMENT OF ACCOUNTS

A. Submit final statement reflecting adjustments to Contract Sum indicating:

1. Original Contract Sum
2. Previous Change Orders
3. Changes under allowances (Mark as NOT USED if not project applicable.)
4. Changes under unit prices (Mark as NOT USED if not project applicable.)
5. Deductions for uncorrected work
6. Penalties
7. Deductions for liquidated damages
8. Deductions for re-inspection fees
9. Other adjustments to Contract Sum
10. Total Contract Sum as adjusted
11. Previous payments
12. Sum remaining due

B. University will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order.

1.07 APPLICATION FOR FINAL PAYMENT

A. Final Payment: After completion of all items listed for completion and correction, after submission of all documents and products, and after final cleaning, submit final Application for Payment, identifying total adjusted Contract Sum, previous payments and sum remaining due. Refer to SECTION 012900.1 – MEASUREMENT AND PAYMENT and the General Conditions of the Contract.

B. Submit As-built Documents to University's Representative prior to final Application for Payment.

PART II - PRODUCTS – Not Applicable to this Section

PART III - PART III - EXECUTION

3.01 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use.

3.02 REPAIR PERIOD (GUARANTEE OR WARRANTY PERIOD)

A. Upon acceptance of the project or a portion thereof from the Design-Builder, the "Guarantee to Repair Period" of two year or more will begin as described in Article 9 of the General Conditions. The University Representative will become responsible for receiving notices of Defective Work from building occupants and securing Design-Builder compliance where applicable. The University Representative shall have prime responsibility for follow-up & monitoring of Design-Builder activities. (Refer to Article 12 of General Conditions).

1. If the Design-Builder must "Shut-down" the fire and security alarms in an occupied building, then the Design-Builder shall be responsible to provide a fire and security watch until the system, at no additional cost to the University.

END OF SECTION 01 77 00.1

SECTION 01 78 00.1

CLOSEOUT SUBMITTALS

PART I - GENERAL

1.01 SECTION INCLUDES

A. Equipment Data

B. Operation and Maintenance Instructions

C. Instruction of University personnel

D. Schedule of Submittals

E. Spare Parts and Maintenance Materials

F. Guarantees, Warranties, Bonds, Service and Maintenance Contracts

G. Project As-built Documents

1.02 RELATED SECTIONS

A. Section 013100.1 – COORDINATION

B. Section 013300.1 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

C. Administrative general requirements for submittals.

D. Section 013900 – GREEN BUILDING POLICY IMPLEMENTATION

E. Section 014500 – QUALITY CONTROL: Manufacturer's tests and inspections as a condition of warranty.

F. Section 014550 – INSPECTION AND TESTING OF WORK

G. Section 016100 – PRODUCT REQUIREMENTS

H. Section 017700 – CLOSEOUT PROCEDURES

1.03 FILE FORMATS

A. All printed documents submitted per this section shall be in PDF format

1. The PDF files will be unlocked and searchable.
2. All PDF documents will be bookmarked.
3. The exception to electronic format for As-Built drawings will be noted in the specific specification section where they are required.

B. Digital Photography

1. All files will be submitted in JPEG

1.04 EQUIPMENT DATA AND OPERATION AND MAINTENANCE (O&M) INSTRUCTIONS

A. Preparation of data shall be done by persons:

1. Trained and experienced in maintenance and operation of described products.
2. Familiar with requirements of this Section.
3. Skilled in technical writing to extent required for communication of essential data.
4. Skilled as drafters competent to prepare required drawings

B. O&M Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at time of Section Submittals. Submit reviewed manual content formatted and organized as required by this Section. Prepare in the form of a data and instructional manual.

C. Submit PDF electronic files of operation and maintenance manuals. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to the University. The exception to electronic format will be indicated in the specific specification section requiring hard copies of the manual.

1. Name each indexed document file in composite electronic index with applicable item name. Include a completed electronically linked operation and maintenance directory.

a. List Project title and Project number and particular building as applicable.

b. Enable inserted reviewer comments on draft submittals.

2. Organization: Arrange content by systems under Section numbers and sequence in accordance with the Project Specifications Table of Contents.

D. Table of Contents, Each Volume: Provide title of Project, Project number, with names, addresses, and telephone numbers of University's Representative, as applicable, and Design-Builder, including name of contact person. Provide schedule of products and systems, indexed to content of the volume.

1. For each Product or System: List names addresses and telephone numbers of subcontractor, original supplier and manufacturer, as applicable, including name of contact person. Include name and address of local source of supplies and replacement parts.
2. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete information not applicable.
3. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project As-Builts Documents as maintenance drawings.
4. Additional Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in SECTION 014500 – QUALITY CONTROL.
5. Warranties and Bonds: Include in each applicable section.

E. Manual for Materials and Finishes:

1. Building Products, applied Materials, and Finishes: Provide PDF composite electronically indexed file. Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured Products.
2. Instruction for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
3. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
4. Additional Requirements: As specified in individual Specification Sections.
5. Table of Contents: Provide PDF electronic file with links to individual sections.

F. Manual for Equipment and Systems

1. Record Instructions: Forward to University's Representative, upon completion of work, and before work will be considered for acceptance, complete PDF composite electronically indexed file of instructions of entire plant and component parts, including manufacturer's certificates, warranty slips, parts lists, descriptive brochures, and maintenance and operating instructions, in quantities set forth in various Divisions. Submit drafts for review before preparing final PDF electronic file.
2. O & M Instructions: Provide and install, where directed, printed sheet under clear plastic cover, giving concise operating and maintenance instruction for equipment.
3. Each Item of Equipment and Each System: Inclusive description of unit or system, Model Number, Serial Number, and component parts. Identify function, normal characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts. Best to include all information provided in final approved equipment submittal. Design drawing data shall be updated to reflect what was actually provided.
4. Panelboard Circuit Directories: Provide electrical service characteristics, controls and communications.
5. Wiring Diagrams: Include color-coded wiring diagrams as installed.
6. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.
7. Maintenance Requirements: Include routine procedures and guide for troubleshooting; disassembly, repair, and re-assembly instructions; and alignment, adjusting, balancing, and checking instructions. Provide servicing and lubrication schedules, and list of lubricants required.
8. Instructions: Include manufacturer's printed operation and maintenance instructions. Include sequence of operation by controls manufacturer.

9. Parts Data: Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

10. Control Data: Provide as installed control diagrams by controls manufacturer.

11. Piping Data: Provide Design-Builder 's coordination drawings, with color piping diagrams as installed. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

12. Design Data: Provide a listing in table of Contents for design data, with tabbed binder divider page and space for insertion of data.

13. Reports: Include test and balancing reports as specified.

14. Additional Requirements: As specified in individual Specification Sections.

G. Instruction of University's Personnel: Instruct University designated personnel to their full and complete understanding, procedures necessary to operate and maintain equipment and systems on continuing basis. Provide training of staff.

1. Schedule: Before final inspection, instruct University designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times. For equipment requiring seasonal operation, perform instructions for other seasons within six (6) months of completion.

2. Basis of Information: Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

3. Instructional Material: Prepare and insert additional data in the manual when need for such data becomes apparent during instruction.

H. Equipment Data and Operation and Maintenance Instructions Submittals:

1. Submittals: Comply with administrative requirements specified in SECTION 013300.1 – SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

2. Preliminary Draft O&M Submittal: Submit electronic files of each manual at least **[180]** calendar days before commencing demonstration and training. University's Representative will review draft and return with comments.

a. The comments or corrections shall be incorporated into the Final O&M submittal.

b. Correct or revise each manual to comply with the University’s Representatives comments. Submit electronic copies of each corrected manual within **[15]** calendar days of receipt of University’s Representative’s comments.

c. University’s Representative will notify the Design-Builder when the edits have been accepted for incorporation into the final O&M submittal.

3. Advance Submittals: For equipment, or component parts of equipment to be put into service during construction and operated by University, submit documents within ten (10) calendar days after equipment approval.

4. Final O&M Submittal: After completion of instruction of University operation and maintenance personnel and final inspection, revise content of documents to include additional information deemed necessary from instruction experience of University's personnel and any changes made during construction. Submit each manual in the final form prior to requesting inspection for Substantial Completion. The University's Representative will return comments electronically.

    a. Submit electronic copies of each manual prior to requesting training.

1.05 SPARE PARTS, EXTRA STOCK AND MAINTENANCE MATERIALS

A. Products Required: Where called for in Contract Specifications, deliver to University's Representative, materials, etc., for use in maintenance work. Provide list of materials delivered to University's Representative, indicating date and acceptance by University's Representative.

1. Provide quantities of products, spare parts, maintenance tools, and maintenance materials specified in individual Sections to be provided to University's Representative, in addition to that required for completion of the Work.

2. Products supplied shall be identical to those installed in the Work. Include quantities in original purchase from supplier to avoid variations in manufacture.

3. Provide itemized list of all spare parts, materials and transmittal to the University's Representative for acceptance.

B. Storage, maintenance: Store products with products to be installed in the Work, as specified in SECTION 016100 – PRODUCT REQUIREMENTS: Product Storage and Protection.

C. Delivery to site: Prior to final payment, deliver and unload spare products to project site. Coordinate with University's Representative and obtain receipt. University will handle and store products.

1.06 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:

1. List of Documents: Include a table of contents for each O&M and emergency, operations listed per CSI Specification number.

2. List of Systems and Subsystems: Include references to operation and maintenance manuals that contain information about each system.

3. List of Equipment: List equipment for each system, organized by system. For pieces of equipment not part of system, list separately.

4. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

5. This Directory shall be submitted to the University's Representative for review and acceptance.

1.07 MAINTENANCE AGREEMENTS

A. Prior to Closeout all Maintenance Agreements required by the Contract Documents shall be assembled and submitted electronically with the Closeout Submittal Requirements.

1. Provide all Maintenance Agreements in PDF form.

a. Submit individual files for each Maintenance Agreement with a directory assembled by CSI division.

1) Combine all project Maintenance Agreements including the directory into one PDF for record.

2) Files will be formatted for printing with a footer identifying the CSI number and UC Davis Health project number.

3) There will be a front cover to the file that contains all project information including the Design-Builder contact information.

1.08 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.

2. Emergency instructions.

3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.

2. Flood.

3. Gas leak.

4. Water leak.

5. Power failure.

6. Water outage.

7. System, subsystem, or equipment failure.

8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of University's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.09 WARRANTIES AND GUARANTEES

A. Warranties and Guarantees, general: Guarantees from subcontractors shall not limit Design-Builder 's warranties and guarantees. Whenever possible, Design-Builder shall cause warranties of subcontractors to be made directly to University. If such warranties are made to Design-Builder, Design-Builder shall assign such warranties to University prior to final payment. When equipment and products, or components thereof, bear a manufacturer's warranty or guarantee that extends the time period of Design-Builder's warranty or guarantee, so state in the warranty or guarantee.

1. Standard Product Warranties: Preprinted written warranties published by individual manufacturers for particular products and specifically endorsed by manufacturer to University.
2. Special Warranties: Written warranties required by or incorporated in Contract Documents, to extend time limits provided by standard warranties or to provide greater rights for University.
3. Provisions for Special Warranties: Refer to General Conditions of the Contract for terms of Design-Builder 's special warranty of workmanship and materials.
4. Specific Warranty Requirements: requirements are included in the individual Sections of Division 2 through 49 of the Contract Specifications, including content and limitations.
5. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve Design-Builder of warranty on work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractor’s requirement to countersign special warranties with Design-Builder .
6. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
7. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to original warranty with an equitable adjustment for depreciation.
8. Replacement Cost: On determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. Design-Builder shall be responsible for cost of replacing or rebuilding defective work regardless of whether University has benefited from use of the work through part of its useful service life.

9. University Recourse: Written warranties made to the University are in addition to implied warranties, and shall not limit duties, obligations, right and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which University can enforce such other duties, obligations, rights, or remedies.

10. Rejection of Warranties: University reserves right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

11. University reserves right to refuse to accept work where a special warranty, or similar commitment is required, until evidence is presented that entities required to countersign commitments are willing to do so.

12. When designated portion of Work is completed and occupied or used by separate agreement with Design-Builder during the construction period, submit properly executed warranties to University's Representative within fourteen (14) calendar days of completion of that designated portion of the Work.

13. Submit written guarantees, in the form contained at end of this Section.

B. Form of Warranty or Guarantee: All written warranties and guarantees, excepting manufacturers' standard printed warranties and guarantees, shall be submitted on Design-Builder's, subcontractor's, material supplier's, or manufacturer's own letterhead, addressed to University. Warranties and guarantees shall be submitted in duplicate and complying with the form letter following. Warranty and guarantee letters shall be signed by all responsible parties and by Design-Builder in every case, with modifications only as approved by University to suit the conditions pertaining to the warranty or guarantee.

C. Submission requirements:

1. Design-Builder shall collect and assemble required warranties, guarantees, bonds, and service and maintenance contracts. Provide PDF electronically signed or signed and scanned copies of each. Organize documents into an orderly sequence based on the table of contents of the Project Manual CSI divisions.

2. Table of Contents: Provide PDF electric file with links to individual warranty sections. Include the following information.

a. Product or Work item.

b. Product or work suppliers firm name, address, telephone number and name of principal.

c. Scope of guarantee, bond, service or maintenance agreement.

d. Date of beginning of guarantee, bond, service or maintenance contract.

e. Duration of guarantee, bond, service or maintenance contract.

f. Design-Builder 's name, address, telephone number and name of principal.

g. Provide information for University personnel:

1) Proper procedure in case of failure.

2) Circumstances that might affect validity of guarantee or bond.

D. Warranty Submittal

1. Provide all warranties in PDF composite electronically indexed files.

a. Submit individual files for each warranty with a directory assembled by CSI division.

1) Combine all project warranties including the directory into one PDF for record

2) Files will be formatted for printing with a footer identifying the CSI Number and UC Davis Health Project Number.

3) There will be a front cover to the file that contains the title “WARRANTY, GUARANTEE AND BOND” as well as all project information including the Design-Builder contact information. Title of Project and UC Davis Health Project Name and Number.

4) Coordinate copies of each warranty to be included in operation and maintenance manuals.

5) Final Submittal shall be incorporated into one PDF, bookmarked and searchable document.

E. Time of Submittals: Submit **[60]** calendar days prior to request for final payment. When work activity is delayed materially beyond date of Substantial Completion, provide updated submittal within ten (10) calendar days after Final Completion, listing date of Final Completion as the start of the Guarantee period.

1.10 AS-BUILT DOCUMENTS

A. Definitions:

1. The terms “As-Built Documents” or “As-builts” shall mean the marked-up version of the Contract Documents prepared by **[Contractor][CM/Contractor]** to record as-built conditions, changes, and selections made during construction.

B. Preparation of data shall be done by person(s):

1. Trained and experienced in the maintenance, preparation, and submittal of As-Built Documentation.

2. Familiar with requirements of this Section.

C. As-built Documents Content:

1. As-built Drawings and Specifications
2. As-built Schedule
3. Miscellaneous As-Built Submittals

D. As-Built Drawings and Specifications: Provide a complete set of As-Built Drawings and Specifications, showing and noting every change from the original Contract Set, including but not limited to:

- Changes made in response to RFI's
- Amended Construction Documents (ACD) and related RFI's
- Change Orders/Field Orders and related RFI's.
- Architect's Supplemental Information (ASI) and related RFI's.
- Changes to locations, including access panels, windows, doors, plumbing, etc.
- Changes caused by obstructions
- Changes made in response to inspections
- Final dimensions
- Deferred Submittals (see "Miscellaneous As-Built Submittals" below)
- Shop Drawings (see "Miscellaneous As-Built Submittals" below)
- Final product selections

1. Format Requirements:

a. Provide in PDF format with bookmarks. All annotations shall be neat and legible.

b. File naming conventions:

1) Drawings: YY_MMDD_University's Project Number_As- Built_Dwgs

2) Specs: YY_MMDD_University's Project Number_As-Built_Spec

c. Provide text (preferably 1/4" or larger) on each drawing and on the cover of the specifications indicating the submission date, the University's Project Number, and the term "As-Builts". The text shall be the same size and general location on all sheets of the drawings and care should be taken to locate the text in a place as to not obscure text or linework on the drawings.

d. Bookmarks: Provide bookmarks in the following format:

1) Drawings: Sheet Number – Sheet Name. Do not add additional categories or disciplines.
2) Specifications: The first page of each section shall be bookmarked with: Section Number – Section Name.
   - Exception: If a hyperlinked Table of Contents is provided the bookmarks may be excluded.

e. Supplemental sheets: When adding a supplemental sheet containing sketches or other information that describe changes to

the Contract Documents:

1) Provide a two-digit numerical suffix that starts with .01 and ascends for every supplemental sheet:
Example: If the supplemental sheet contains sketches that describe changes to the hypothetical sheet “A1-01” the first supplemental sheet will be numbered “A1-01.01”.

2) The sheet name and number are to be similar in text size and location to the sheet being supplemented.

3) Include supplemental sheets in bookmarks.

E. As-Built Schedule: Provide As-Built schedule per SECTION 013200 CONTRACT SCHEDULES

1. Format Requirements:

a. Schedule to be in PDF format.
b. File naming conventions:

1) YY_MMDD_ University’s Project Number_As-Built_Schedule

F. As-Built Shop drawings:

1. Format Requirements:

a. File naming convention for shop drawings:
1) YY_MMDD_ University’s Project Number_ShopDwg_Spec Section Number

G. As-built Documents Submittal: Submit all As-Built Documents together after Final Completion and in accordance with SECTION 017700 CLOSEOUT PROCEDURES. Allow 10 business days for initial review and for each resubmittal.

1.11 AS-BUILT PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Format: Submit Product Data as annotated PDF electronic file Include As-Built Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.12 AS-BUILT PRODUCT SAMPLES

EDIT NOTE: PM to verify physical samples are required as part of close out submittal. PM to make storage arrangements if physical samples are to be submitted.

A. Preparation: Mark Samples to identify the material and location or use on project; indicate finish designations of materials and products, where designations are indicated on Drawings. Cross-reference Samples with corresponding Product Data submitted.

1. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

2. Note related Change Orders, As-Built Specifications, and As-Built Drawings where applicable.

3. Format: Submit As-Built Samples in same size and format as indicated for each sample in the specification's sections. Pack samples securely, with protective wrapping. Include As-Built Samples directory organized by Specification Section number and title.

4. Each Sample will be labeled with Manufacturer, Model, Product Number, CSI Section and UC Davis Health Project Name and Number.

1.13 PHOTOGRAPHS

A. General: Prior to Closeout all photographic documentation required per 013220 Construction Progress Reporting shall be assembled and submitted with the Closeout Submittal Requirements.

1.14 CONSENT OF SURETY AND FINAL CERTIFICATES

A. General: Prior to closeout Consent of Surety and Final Certificates required by the Contract Documents shall be assembled and submitted with the Closeout Submittal Requirements.

PART II - PRODUCTS – Not Applicable to this Section

PART III - EXECUTION

3.01 Refer to the following attachments

A. Guarantee

B. Report of Work Required by Warranty

END OF SECTION 017800.1

GUARANTEE

Project Title: _____

Project Location: _____

Project Number: _____ DATE: _____

GUARANTEE FOR _____ (the "Contract"),
(Specification SECTION and Contract No.)
between The Regents of the University of California ("University") and

_____ ("Design-Builder").
(Name of Design-Builder or Subcontractor)

hereby guarantees to University that the portion of the Work described as follows:

_____

_____

_____

_____

which it has provided for the above referenced Project, is of good quality; free from defects; free from any liens, claims, and security interests; and has been completed in accordance with Specification SECTION _____ and the other requirements of the Contract.

The undersigned further agrees that, if at any time within months after the date of the guarantee the undersigned receives notice from University that the aforesaid portion of the Work is unsatisfactory, faulty, deficient, incomplete, or not in conformance with the requirements of the Contract, the undersigned will, within 10 days after receipt of such notice, correct, repair, or replace such portion of the Work, together with any other parts of the Work and any other property which is damaged or destroyed as a result of such defective portion of the Work or the correction, repair, or replacement thereof; and that it shall diligently and continuously prosecute such correction, repair, or replacement to completion.

In the event the undersigned fails to commence such correction, repair, or replacement within 10 days after such notice, or to diligently and continuously prosecute the same to completion, the undersigned, collectively and separately, do hereby authorize University to undertake such correction, repair, or replacement at the expense of the undersigned; and Design-Builder will pay to University promptly upon demand all costs and expenses incurred by University in connection therewith.

SUBCONTRACTOR

Signed: _____ Title: _____

Typed Name: _____

Name of Firm: _____

Design-Builder License Classification & Number: _____

Address: _____

Telephone Number: _____

CONTRACTOR

Signed: _____ Title: _____

Typed Name: _____

Name of Firm: _____

Design-Builder License Classification & Number: _____

Address: _____

Telephone Number: _____

REPORT OF WORK REQUIRED BY WARRANTY

To:	PM NAME, University Representative
From:	

On the date noted, the University identified the following work required under warranty:

Prepared by: _____ _____ _____

(Print Name) Signature Date

In accordance with the terms and conditions of the Contract, the Design-Builder has agreed that, if at any time within _____ months after the date of the guarantee the Design-Builder receives notice from University that the aforesaid portion of the Work is unsatisfactory, faulty, deficient, incomplete, or not in conformance with the requirements of the Contract, the Design-Builder will, within 10 days after receipt of such notice, correct, repair, or replace such portion of the Work, together with any other parts of the Work and any other property which is damaged or destroyed as a result of such defective portion of the Work or the correction, repair, or replacement thereof; and that it shall diligently and continuously prosecute such correction, repair, or replacement to completion.

Prompt notification to be provided by the University Representative to the appropriate Design-Builder.