REQUEST FOR PROPOSALS

(BID DOCUMENTS)

FOR

CAMPUS SOLAR ROOF INITIATIVE

(PROJECT NO. 950581)

UNIVERSITY OF CALIFORNIA
RIVERSIDE, CALIFORNIA

COUNTY OF RIVERSIDE
CALIFORNIA

May 21, 2020

BIDDING INQUIRIES

Betty Osuna
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Planning, Design & Construction
1223 University Avenue, Suite 240
Riverside, CA 92507

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PROPOSAL SCHEDULE

	ACTIVITY	DATE	TIME
A	RFP will be available to Prequalified Proposers, subcontractors and design consultants.	**May 22,2020**	**2:00 PM**
B	**Pre-Proposal Conference – Mandatory for all Prequalified Proposers.** Via Zoom.	**May 22, 2020**	**10:00 AM**
C	The University will hold a **Confidential One-on-One meeting** with each Proposer prior to the Technical Proposal Submittal for the purpose of answering questions, clarifying RFP and program requirements, reviewing and validating preliminary designs etc. Meeting location: Zoom Conference	**May 29, 2020**	**RTS-112 9:15 AM** **RTS-114 10:30 AM**
D	**Technical Proposal Submittal is due from Proposers** and will be received only at UCR, Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507. The Technical Proposal Submittal is defined in the *Technical Proposal*. Pending COVID-19 Guidelines, location of delivery will change and issued via Addendum.	**June 17, 2020**	**2:00 PM**
E	**Lump Sum Base Price Proposal Submittal is due from Proposers** and will be received only at UCR, Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92521-2450. The Lump Sum Base Price Proposal Submittal is defined in the *Lump Sum Base Price Proposal*. Pending COVID-19 Guidelines, location of delivery will change and issued via Addendum.	**June 17, 2020**	**2:00 PM**
F	The **University's Technical Review Committee will meet** to review timely submitted Technical Proposals as described in the Proposal Evaluation Process document.	**June 22, 2020**	

G	Proposers shall make an **Oral Presentation** and describe the best value aspects of their proposals. Cost shall not be discussed during the Oral Presentation.	**June 23, 2020**	**RTS-114 09:00 AM** **RTS-112 10:30 AM**
H	Timely submitted **Lump Sum Base Price Proposals shall be publicly opened at UCR**, Planning, Design & Construction via Zoom, University will acknowledge the timely receipt of submittals and whether or not the submittals appear to be responsive. No cost or point scoring information will be disclosed to the public at this time.	**June 24, 2020**	**10:00 AM**
I	The University will issue **Notice to Proceed** for Phases 1 & 2 to the successful proposer.	**June 29, 2020**	

Late Proposals: Any proposal, modification, or revision that is received at the designated University of California, Riverside, Planning, Design & Construction location after the exact time specified for receipt of proposals is "late" and will not be considered unless it was the only proposal received. Late proposals and modifications that are not considered will be held unopened, unless opened for identification, and then returned to the Proposer after award.

REQUEST FOR PROPOSAL

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1. INTRODUCTION

The Regents of the University of California (the "University") intend to award a contract to the prequalified Design Build team (the "Proposer") that is deemed to offer the best value for design build services to construct the Campus Solar Roof Initiative project (the "project") located on the University of California, Riverside campus.

The University of California has completed the prequalification process for design build services relating to the project. **Proposals will be accepted only from prequalified Design Builders, herein after referred to as "Proposers."** This Request for Proposal (RFP) establishes the requirements for proposal submission.

The University reserves the right to reject any, or all, proposals or to withhold the award of this project for any reason it may determine.

1.1 Purpose

The University's primary objective in utilizing the design build approach for this project is to bring the best available design and construction experience and expertise together to work with the University as a team, and successfully meet the requirements of this project.

The University desires to select a responsive, highly qualified Proposer to deliver a design build project that fully meets the University's established needs and expectations with respect to the scope of work, budget, quality, functionality, flexibility, and operational design standards. The design build approach is intended to allow designers and contractors to work together to address each project requirement and to deliver an effective and comprehensive project that meets all the established requirements.

The University requests integrated solutions with quality design and construction within the established Maximum Acceptance Cost.

1.2 Project Description

The overall goal of this effort is for the University to obtain the services of a design/build contracting team to design, construct, and commission a PV system on two targeted campus buildings. The PV system is expected to provide the maximum generation of renewable power with minimum impact on each building; while also integrating the photovoltaic production into the building(s) and campus electrical systems. Furthermore, the PV system is to include provisions for future integration into the University building management systems (BMS) to monitor and trend energy (kWh), instantaneous power (kW), and calculate carbon/greenhouse gas savings in metric tons (tonnes).

Reliable and predictable power with minimal annual degradation in output, as well as predictable maintenance, is desirable for a minimum of 25 years. The roof warranty is to be retained and extended as a part of the delivered system. To extend and incorporate the roof warranty, a coating and/or other roofing enhancements are anticipated. The project will be considered complete after the system has been fully accepted by the University and proven to be fully operational for one month.

BUILDINGS

Student Services Building
The Student Services building was constructed in 2007 and has a gross rooftop area of approximately 17,850 square feet. An existing air handling unit resides on the rooftop, which is the largest obstruction to avoid by the proposed solar PV system. The remaining features to avoid are the roof drains and the roof access hatch.

Student Recreation Center South

The Student Recreation Center (South) was constructed in 2013 and has a total rooftop area of approximately 47,400 square feet. This rooftop has several existing features that will impede on the available area for solar PV installation. The largest obstruction is the mechanical equipment enclosure and exterior ductwork. Secondary to the mechanical equipment, there is also fall protection, a lightning grounding system, roof drains, and the roof access hatch.

1.3 Proposal Documents

Proposers must comply with the specific requirements herein as well as the provisions contained in the Design Build Agreement (the "contract"). By submitting its proposal, the Proposer agrees to all of the terms and conditions contained therein and further agrees, if selected for award, to execute a contract including such terms and conditions.

The University makes copies of the RFP Documents available, on the aforementioned terms, for the sole purpose of obtaining proposals for the Work (as defined in Section 2, The Work) and does not confer a license or grant permission for any other use of the Proposal Documents.

This RFP includes the Proposal Documents listed below for use by Proposers in the preparation of their proposals and for incorporation into the awarded contract.

.1 REQUEST FOR PROPOSAL DOCUMENTS:

a. Proposal Schedule
b. Request for Proposal
c. Technical Proposal
d. Lump Sum Base Price Proposal
e. Price Proposal Form
f. Bid Bond
g. Lump Sum Base Price Proposal Spreadsheet
h. Proposal Evaluation Process
i. Preliminary Schedule
j. University Furnished Information

.2 DESIGN BUILD CONTRACT / EXHIBITS:

a. Agreement
b. General Conditions
c. Supplementary Conditions
d. Design Criteria
e. Project Directory
f. Project Planning Guidelines
g. Scope of Work
h. General Requirements (Division 01)
i. Design Professional Rate Schedule for Additional Services
j. Proposal
k. Standard Contract Forms (Exhibits)

1.4 Maximum Acceptance Cost

.1 The Maximum Acceptance Cost (MAC) for this project has been established by the Regents of the University of California as **$ 2,250,000**

The MAC represents the maximum total available funding for contract award.

.2 Proposals submitted that exceed the MAC will be deemed nonresponsive and excluded from consideration for contract award.

The MAC = Lump Sum Base Price Proposal (including any applicable design fees)

1.5 Basis of Selection and Contract Award

Selection shall be based upon a "best value" determination, which is calculated on a "cost per point" basis as identified in the Proposal Evaluation Process section in this RFP. The responsive Proposer with the lowest best value score (lowest cost per technical point) and with a Price Proposal that does not exceed the MAC will be determined to be the apparent Lowest Responsible Proposer. University will have the right to waive nonmaterial irregularities in a proposal.

University will select the best value proposal and notify such Proposer on University's form within three (3) weeks after the proposal deadline or reject all proposals. Within 10 days after receipt of the Notice of Selection as the successful Proposer, Proposer shall submit the following items:

.1 One (1) original of the Agreement signed by Design Builder.
.2 One (1) original of the Payment Bond required under Article 11 of the General Conditions.
.3 One (1) original of the Performance Bond required under Article 11 of the General Conditions.
.4 Original Certificates of Insurance on the form provided by University required under Article 11 of the General Conditions.
.5 Fully executed "Declaration of Contractor or Subcontractor's Minimum Occupational Safety and Health Qualifications" form. Proposer need not submit this form with proposal if it was previously submitted during the prequalification process.
.6 If Proposer wishes to utilize securities in lieu of retention or deposit retention into escrow *beginning with the initial Application for Payment*, (1) Selection of Retention Options accompanied by (1) completed Escrow Agreements for Deposit of Securities in Lieu of Retention and Deposit of Retention (refer to Article 9.5 of the General Conditions).

If all submitted items are in compliance with the requirements of the RFP Documents, the University will award the Contract by returning a fully executed copy of the Agreement to Design Builder.

The University may reject the successful Proposer if the Proposer: (1) withdraws its proposal; (2) fails or refuses to sign all of the items required by the Proposal Documents within 7 days after receipt of Notice of Selection; or (3) is not financially or otherwise qualified to perform the Contract. In such case, the University will select the next best value proposal until all proposals are exhausted or reject all proposals.

1.6 General Proposal Requirements, Terms and Provisions

.1 *Key RFP Definitions:*

***Definitions**:* Except as otherwise specifically provided, definitions set forth in the General Conditions or in other Contract Documents are applicable to all Proposal Documents.

***Addenda**:* Written, electronic or graphic supplements issued by University not later than 3 business days prior to the Proposal Deadline, which modify or interpret the Proposal Documents by addition, deletion, clarification, or correction. No other form of communication, oral or written, modifies the Proposal Documents.

Basis of Design: The terms "Basis of Design," and "Design Criteria," may be used interchangeably.

***Business Day**:* Any day other than a Saturday, a Sunday or University designated holiday.

Conflict of Interest: Occurs when an architect, engineer, or other consultant works on a project on behalf of more than one client. To avoid any such conflict of interest, any consultant hired with the primary role of developing the project program plan or project proposal documents on behalf of the University is precluded from participating as a member of the Design Build Team.

***Facility**:* As used in this RFP, the University's Facility office issuing the Proposal Documents.

***One-on-One Meeting**:* Confidential discussions between the University and each Proposer to clarify RFP and program requirements, review preliminary designs and obtain the University's validation. Any changes to the Proposal Documents will be made only by Addenda issued by the University (see the *University Responses* provision below**).**

***Planholder**:* A person or entity who is known by the issuing office to have received a complete set of Proposal Documents and who has provided contact information for receipt of pre-proposal communications.

***Proposal Deadline**:* The date and time on or before which proposals must be received, as designated in the Proposal Schedule and which may be revised by Addenda.

***Proposal Documents**:* The documents (including electronic files) prepared and issued with the RFP including all Addenda thereto.

***Proposer**:* A prequalified person or firm(s) that submits a proposal. Note: The terms "Proposer," "Design Builder," and "Design Build Team" may be used interchangeably.

.2 *Form and Content of Proposal:* The format and content of the proposal submittal are specified in the *Technical Proposal and Lump Sum Base Price Proposal sections of this Document*. Proposals should be concise, straightforward, prepared simply and economically. Expensive displays, bindings, or promotional materials are neither required nor desired.

.3 *Proposer Understanding:* By submitting its proposal(s), Proposer acknowledges that it has read, understood, and submitted its proposal(s) in accordance with the provisions of the Proposal Documents.

.4 *Additional Proposal Requirements:* Proposer shall, before submitting its proposal, carefully study and compare the components of the Proposal Documents with any other work being bid concurrently or presently under construction which relates to the Work for which the

proposal is submitted; shall examine the project site, the conditions under which the Work is to be performed, the local conditions; and shall at once report to University's Representative errors, inconsistencies, or ambiguities discovered. If Proposer is awarded the contract, Proposer waives any claim arising from any errors, inconsistencies or ambiguities resulting from such examinations that Proposer, its subcontractors or suppliers, or any person or entity under Proposer became aware of, or reasonably should have become aware of, prior to Proposer's submission of its proposal.

.5 *Requests for Clarification:* Requests for clarification or interpretation of the Proposal Documents shall be addressed only to the person(s) designated by the University to receive such information. Any other communication to any other person(s) or firm(s) shall be deemed invalid.

.6 *University Responses:* Clarifications, interpretations, corrections, and changes to the RFP Documents will be made by Addenda. **CLARIFICATIONS, INTERPRETATIONS, CORRECTIONS, AND CHANGES TO THE RFP DOCUMENTS MADE IN ANY OTHER MANNER SHALL NOT BE BINDING AND PROPOSERS SHALL NOT RELY UPON THEM.**

.7 *Distribution of Addenda:* Addenda will be issued only by the University and only in writing. Addenda will be identified as such and will be distributed via e-mail, mail, fax, courier, or through other services to all Planholders.

Copies: Copies of Addenda will be made available for inspection wherever RFP Documents are on file for inspection. Addenda will be issued such that they should be received by Planholders who have provided contact information for receipt of Addenda, no later than 3 business days prior to the Proposal Deadline. Addenda withdrawing the RFP or postponing the Proposal Deadline may be issued anytime prior to the Proposal Deadline.

Receipt of Addenda: Each Proposer shall be responsible for ascertaining, prior to submitting a proposal, that it has received all issued Addenda.

.8 *Equal Opportunity:* Every effort will be made to ensure that all persons have equal access to contracts and other business opportunities with the University within the limits imposed by law or University policy. Each Proposer may be required to show evidence of its equal employment opportunity policy. The successful Proposer and its subcontractors will be required to follow the nondiscrimination requirements set forth in the Bidding Documents and to pay prevailing wage at the location of the work.

The work described in the contract is a public work subject to section 1771 of the California Labor Code.

.9 *Prevailing Wages:* Proposer shall pay prevailing wage rates at the location of the work as published on the DIR website and provided with this RFP as University Furnished Information.

.10 *Return of Bid Security:* Bid security will be returned after the contract has been awarded. **Notwithstanding the preceding, if a Proposer fails or refuses, within 10 days after receipt of Notice of Selection, to sign the Agreement, or submit to University all of the items required by the RFP Documents, the University will retain the Proposer's bid security.** If the bid security is in the form of a Bid Bond, the bid security will be retained until the University has been appropriately compensated. If the bid security is in the form of a certified check, the University will negotiate said check and, after deducting its damages, return any balance to Proposer.

.11 *Oral Presentations:* Proposer shall make an oral presentation of its proposal that describes the most important aspects of its approach to the project and provide proposal clarifications requested by the University's Technical Evaluation Committee.

.12 *Incorporation of Proposal Clarifications into the Proposal*: The University's summation of Proposal Clarifications as confirmed by Proposer, shall be accepted by signature of selected Proposer and incorporated into their proposal by reference.

.13 *Incorporation of Proposal into the Contract:* The selected Proposer's proposal shall be incorporated into, and shall be an integral part of the Contract.

.14 *Award Upon Receipt of Initial Proposal:* The University intends to evaluate initial proposals and award a contract without allowing Proposers to revise their proposals. Therefore, initial proposals should contain the best terms from a price and technical standpoint.

.15 The University reserves the right to proceed to a "Best and Final Offer" (BAFO) phase by requesting Proposal Revisions and conducting discussions with the Proposers if it later determines them to be necessary. At the conclusion of discussions with all Proposers, the University will establish a deadline for receipt of BAFO proposals. Discussions with Proposers after receipt of a proposal do not constitute a rejection or counteroffer by the University. As used in this provision, the following definitions apply:

"BAFO Discussions" are exchanges between the University and the Proposer that occur after the submittal of proposals should it be necessary to call for a BAFO. During the BAFO process, the Proposer will be allowed to submit a revised proposal.

BAFO PROPOSALS (IF REQUESTED) THAT EXCEED THE MAC WILL NOT BE CONSIDERED FOR CONTRACT AWARD. FAILURE TO SUBMIT PROPOSAL REVISIONS WILL RESULT IN THE PROPOSER BEING DEEMED NONRESPONSIVE.

.16 Occupational Safety and Health Qualification: Proposer and each Subcontractor at all tiers meet the following minimum occupational safety and health qualifications:

a. Proposer and each Subcontractor have no Final Order (declared by OSHA) Willful violations in California of Part 1 (commencing with Section 6300) of Division 5 of the Labor Code during the five-year period prior to bid opening.
b. Proposer and each Subcontractor have maintained a workers' compensation Experience Modification Rate (EMR) that averages below 1.15 for the past five years.
c. Proposer and each Subcontractor have instituted an injury prevention program pursuant to Section 3201.5 or 6401.7 of the Labor Code.

After selection of the apparent best value responsive and responsible Proposer and issuance of the Notice of Selection, and prior to contract award, Proposer shall furnish to the University a "Declaration of Contractor or Subcontractor Minimum Occupational Safety and Health Qualifications" form completed by Proposer and each listed Subcontractor.

After contract award, Proposer will require each of its Subcontractors at all tiers to furnish a fully executed Exhibit form prior to Subcontractor's commencement of Work.

.17 Key Technical Submittal Definitions:

.1 *Unallowable Changes in Technical Submittals*

a. *Program Change:* Any project scope change that: (1) deviates from the required elements in the Proposal Documents, or (2) is inconsistent with the requirements expressed in the Contract Documents as issued. Examples of unallowable changes include substantial changes in project siting or adjacencies, reduction in usable space, limitations of planned utilization or limitations on future expansion.
b. *Performance Change:* Any change, revision, alteration or deviation from the Proposal Document requirements that would increase energy usage, reduce useful life, impair accessibility, increase maintainability, or affect life cycle as required.

.2 *Cost Realism (with respect to proposal pricing)*

a. *Cost Realism Analysis:* All pricing, including Unit Prices, Alternates and Compensable Delay rates must reflect a clear understanding of the project requirements with realistic prices representing probable cost. The University will perform a cost realism analysis using its best estimate of probable cost to determine if the proposed prices are fair and reasonable.

b. *Unbalanced Pricing:* Unbalanced pricing exists when, despite an acceptable total price, the price of one or more contract line items is significantly over or understated as indicated by the application of a cost realism analysis.

IF THE UNIVERSITY DETERMINES THAT ANY CONTRACT LINE ITEMS ARE NOT FAIR AND REASONABLE, OR ARE UNBALANCED, THE UNIVERSITY MAY REJECT THE OFFER IF THE RESULTING AWARD POSES AN UNACCEPTABLE RISK TO THE UNIVERSITY.

2. THE WORK

2.1 General Requirements

The University will award a contract to the successful Proposer for the production of Design Development Documents, Construction Documents and Construction.

The Design Builder provides services for Design Development and Construction document preparation for the project that may include, but not be limited to, architectural, structural, civil, fire protection, mechanical, electrical, and plumbing drawings and specifications; interdisciplinary construction coordination drawings (also defined as “Shop Drawings”); as well as appropriate calculations necessary to complete the project. Additionally, the Design Builder, its consultants, sub-consultants, or suppliers performs Work required to construct the project as described and specified in the RFP Documents.

All Construction Drawings and Shop Drawings prepared by Design Builder are to be complete and in sufficient detail for a comprehensive review by the University including Architects & Engineers, the State Fire Marshal, Division of State Architect (DSA) and the University’s plan review service consultants. The drawings and engineering calculations shall include, but not be limited to: applicable plans, elevations, sections, schedules and details. These drawings shall comprehensively illustrate the complete and coordinated design of applicable systems. The Design Builder will be required to use an Architect registered in the State of California to prepare all Construction Drawings and shop drawings to the extent required by the Campus Master Specifications.

The Lump Sum Base Price Proposal must provide for the complete design and construction of the project, as identified in Division 01, General Requirements of the Proposal Documents, including any temporary or interim facilities required to maintain essential existing functions in operation throughout the construction period.

Details of the design services and construction responsibilities are described in greater detail in the Proposal Documents.

2.2 Architectural/Engineering Consultants

All architectural and engineering services to be provided by Proposer must be in accordance with the professional registration requirements of the State of California. Consultants listed must meet State licensing requirements.

2.3 Work Phases

The successful Proposer will be responsible for providing services for the development of the project including Design Development and Equipment Specification (Phase 1), Construction

Documents (Phase 2), and Construction (Phase 3), refer to Specification Section 01000 – Summary of the General Requirements (Division 01).

The contract time is as follows:

Phase 1 & 2	Phase 3	Total Contract Time
30 Calendar Days	**175 Calendar Days**	**205 Calendar Days**

.1 Design Development and Equipment Specification, Construction Documents, and Construction – Phases 1, 2 and 3:

The successful Proposer shall be responsible for the development of the project through Final Design Development of the project as identified in the Contract Documents. Design Builder shall be responsible for the development of 1) final Design Development documents incorporating the Specifications, Addenda, Design Builder Questions and Answers, any changes to the work proposed by the Design Builder and accepted by the University at the time of proposal; 2) Construction Documents, and 3) Construction of the project as identified in the Design Build Contract.

.2 The total contract time includes **3** days for rain delays, refer to Supplementary Conditions.

3. CONTRACT SUM

The Total Contract Sum shall be the Lump Sum Base Price proposed for all work associated with Design Development, Construction Documents, Construction, and selected Alternates, if any.

.1 University has established the fixed fee for the work associated with the Design Development of the project as **Thirty-Seven Thousand ($37,000.00)**. This fee shall be included in the Lump Sum Base Price proposed by the successful Proposer.

.2 Liquidated Damages

a. Liquidated damages will only apply to Phase 3. See Article 6 of the Agreement for detailed requirements.

b. Liquidated damages daily rate for Phase 3: **$1,200** per calendar day, on or before substantial completion.

c. Liquidated damages daily rate for Phase 3: **$250** per calendar day, after substantial completion.

4. MANDATORY PROPOSAL REQUIREMENTS *(THE ABSENCE OF WHICH RENDERS THE PROPOSAL NON-RESPONSIVE)*

A responsive proposal is one that materially complies with the form and content requirements of the proposal documents. Mandatory proposal requirements include, but are not limited to:

.1 Attendance at the Mandatory Pre-Proposal Conference and project site visit. University requires all Pre-Proposal Conference attendees to sign an attendance list, used as verification of attendance.

.2 Proper proposal delivery method.

.3 Timely submittals at the designated location.

.4 At the time of proposal opening and throughout the duration of the project, Proposer and all Subcontractors shall hold the appropriate current licenses issued by the State of California Contractor's State License Board. If Proposer is a Joint Venture, the Proposer shall hold the applicable joint venture license in which each member of the joint venture shall also have the appropriate license prior to contract award. The State of California Business and Professions Code, Division 3, Chapter 9, known as the "Contractor's License Law," establishes licensing requirements for contractors.

.5 Proposer and first-tier subcontractors must have the required bonding and insurance including the required professional liability and contractor's pollution liability insurance. Refer to Article 11 of the General Conditions and the Supplementary Conditions for project specific insurance requirements.

.6 Price Proposal and Bid Bond must be submitted on the University's forms provided in the RFP.

.7 Price Proposal Form must be signed and dated by the Proposer's Representative legally authorized to bind Proposer to a contract and include all applicable attachments.

.8 The sum of the Lump Sum Base Price Proposal (including all associated design fees) must be within the Maximum Acceptance Cost for Best and Final Offer submittals (BAFO), if requested.

.9 Bid Security in the sufficient amount as described in the Lump Sum Base Price Proposal document.

5. PROPOSAL MODIFICATIONS OR WITHDRAWALS

Prior to the Proposal Deadline, a submitted proposal may be modified or withdrawn by notice to the party receiving proposals at the location designated for receipt of proposals. Such notice shall be in writing over the signature of Proposer, delivered by hand, facsimile or PDF email attachment. If notice is by facsimile or email, written confirmation over the signature of Proposer shall be mailed and postmarked on or before the Proposal Deadline. A change made shall not reveal the amount of the original proposal.

Modified or withdrawn proposals may be resubmitted up to the Proposal Deadline, provided that it then fully complies with the Proposal Requirements.

Proposals may not be modified, withdrawn, or canceled for 60 days following the Proposal Deadline.

6. PROPOSAL (BID) PROTEST

.1 Any Proposer, person, or entity may file a proposal (Bid) protest. The protest shall specify the reasons and facts upon which the protest is based and shall be in writing and received by the Facility not later than 5:00 pm on the 3rd business days after a written notice of the determination of the apparent best value proposal has been issued by the University.

.2 If a Bid is rejected by the Facility, and such rejection is not in response to a Bid protest, any Proposer, person or entity may dispute that rejection by filing a Bid protest (limited to the rejection) in writing and received by the Facility not later than 5:00 pm on the 3rd business day following the rejected Proposer's receipt of the notice of rejection.

.3 For the purpose of computing any time period in this section, the date of receipt of any notice shall be the date on which the intended recipient of such notice actually received it. Delivery of any notice may be by any means, with verbal or written confirmation of receipt by the intended recipient.

.4 The facility will investigate the basis for the Bid protest and analyze the facts. Facility will notify Proposer whose Bid is the subject of the Bid protest of evidence presented in the Bid protest and evidence found as a result of the investigation, and, if deemed appropriate, afford Proposer an opportunity to rebut such evidence, and permit Proposer to present evidence that it should be allowed to perform the Work. If deemed appropriate by Facility, an informal hearing will be held. Facility will issue a written decision within 15 days following receipt of the Bid protest, unless factors beyond Facility's reasonable control prevent such a resolution, in which event such decision will be issued as expeditiously as circumstances reasonably permit. The decision will state the reasons for the action taken by Facility. A written copy of the decision will be furnished to the protestor, the Proposer whose Bid is the subject of the Bid protest, and all Proposers affected by the decision. As used in this Section, a Proposer is affected by the decision on a Bid protest if a decision on the protest could have resulted in the Proposer not being the best value, responsible and responsive Proposer for the Contract. A written copy of the Facility's decision must be received by the protester, the Proposer whose is the subject of the Bid protest, and all Proposers affected by the decision no later than 3 business days prior to award of the contract**.**

.5 Notwithstanding the provisions of this Section, at the election of Facility, a Bid protest may be referred directly to University's Construction Review Board without prior investigation and review by Facility. The Chair of the Construction Review Board will either decide the Bid protest or appoint a Hearing Officer. If a Hearing Officer is appointed, the Hearing Officer will review the Bid protest in accordance with the provisions of this Section.

.6 The Proposer whose Bid is the subject of the protest, all Proposers affected by the Facility's decision on the protest, and the protestor have the right to appeal to the Construction Review Board if not satisfied with Facility's decision. The appeal must be in writing and shall specify the decision being appealed and all the facts and circumstances relied upon in support of the appeal. The appeal must be received by the Chair, Construction Review Board, not later than 5:00 pm on the 3rd day following appellant's receipt of the written decision of Facility, at the following address:

Chair, Construction Review Board
Attention: Director, Construction Services
University of California Office of the President
1111 Franklin Street, 6th Floor
Oakland, CA 94607-5200

And

constructionreviewboard@ucop.edu

.7 A copy of the appeal shall be sent to all parties involved in the Bid protest and to Facility. An appeal received after close of business is considered received as of the next business day. If the final date for receipt of an appeal falls on a Saturday, Sunday, or University holiday, the appeal will be considered timely only if received by close of business on the following business day.

.8 The Chair of the Construction Review Board will review the Facility's decision and the appeal, and issue a written decision, or if appropriate, appoint a Hearing Officer to conduct a hearing and issue a written decision. If a hearing is held, the hearing shall be held not later than the 10th day following the appointment of the Hearing Officer unless the Hearing Officer for good cause determines otherwise. The written decision of the Chair or Hearing Officer will state the basis of the decision, and the decision will be final and not subject to any further appeal to University. The Chair or Hearing Officer may consult with the University's Office of the General Counsel on the decision as to legal form. The University will complete its internal Bid protest procedures before award of the Contract.

7. CONFLICTS

.1 The intent of this RFP is to provide an overview of the proposal process, the subsequent award, and the work required of the successful Proposer. The provisions herein are a SUMMARY ONLY and the Proposers should in all cases review the provisions of the Design Build Contract documents for the specific requirements.

.2 If the Proposer believes there are conflicts between this document and any other Contract Documents, the Proposer must immediately, and in writing, bring it to the attention of the University and request written clarification.

END OF REQUEST FOR PROPOSAL SECTION

TECHNICAL PROPOSAL

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TAB 5 - Schedule 6
TAB 6 - Deviations from Request for Proposal 7
Oral Presentation 8
Best and Final Offer 8

TECHNICAL PROPOSAL SUBMITTAL CHECKLIST

☐ Submittal in a separate sealed container identifies the: Project Name & Number, Submittal Date, Technical Proposal Submittal, and Identification Number. Submittal is properly addressed and delivered.

☐ One (1) original and five (5) copies of the written portion of the TECHNICAL PROPOSAL:

- ☐ Electronic copy in PDF format to link provided

☐ One (1) set of up to no more than three (3) PRESENTATION BOARDS for each building, not larger than 30” x 42”. Include:

- ☐ Copies of boards within the technical proposal binder as 11" x 17" sheets
- ☐ Electronic copy in PDF format to link provided

☐ One (1) bound set of the SCHEMATIC DESIGN SUBMITTAL shall be submitted not smaller than 30” x 42”.
Include:

- ☐ Within the technical proposal binder as 11” x 17” sheets
- ☐ Electronic copy in PDF format to link provided

1. TECHNICAL PROPOSAL

Proposers shall submit a Technical Proposal conforming to the format outline herein and shall provide all requested information. **FAILURE TO COMPLY WITH THE REQUIRED FORMAT AND/OR PROVIDE THE INFORMATION REQUESTED MAY RESULT IN A NON-RESPONSIVE SUBMITTAL**.

Technical Proposals may be comprised of design narratives, drawings (no larger than 30" x 42"), presentation boards, outline specifications, catalog cut sheets, and other information as required and appropriate. **ALL REFERENCES THAT MAY IDENTIFY THE DESIGN BUILD TEAM SHALL BE REMOVED.**

1.1. Technical Proposal Delivery

.1 Proposal Delivery Date

Refer to the Proposal Schedule for the Technical Proposal Submittal due date and time.

.2 Marking and Identification of Submittals

Proposer shall clearly mark a coverage page for each package to identify the following:

Project Name: **Campus Solar Roof Initiative**
Project Number: **950581**
Marked: "Technical Proposal Submittal"
Date of Submittal: **June 17, 2020**
Design Builder Identification Number: RTS-XXX *(DB Team Assigned number)*

If the Proposals are sent by mail, courier or delivery service, the sealed package shall be marked with the notation "SEALED PROPOSAL ENCLOSED" on the face thereof.

.3 Designated Location for Receipt of Technical Proposals

Proposer shall assume full responsibility for timely delivery of proposals. Proposals shall be properly addressed and uploaded to the links provided by the University.

LATE PROPOSALS: ANY PROPOSAL, MODIFICATION, OR REVISION, THAT IS RECEIVED AT THE DESIGNATED UCR PLANNING, DESING & CONSTRUCTION LOCATION AFTER THE EXACT TIME SPECIFIED FOR RECEIPT OF PROPOSALS IS "LATE" AND WILL NOT BE CONSIDERED UNLESS IT WAS THE ONLY PROPOSAL RECEIVED. LATE PROPOSALS AND MODIFICATIONS THAT ARE NOT CONSIDERED WILL BE HELD UNOPENED, UNLESS OPENED FOR IDENTIFICATION, AND THEN RETURNED TO THE PROPOSER AFTER AWARD.

.4 Technical Proposal Delivery Methods (*See marking instructions in 1.1.2 above*)

a. Mail
b. Courier (Hand Delivery)
c. Electronically

.5 Unacceptable Delivery Methods

a. Oral
b. Telephonic
c. Facsimile
d. Email

1.2 Technical Proposal Submittal Instructions

.1 Required Copies

One (1) original and five (5) copies of the written portion of the Technical Proposal shall be submitted in sealed boxes, envelopes, or other appropriate sealed containers. **One (1) electronic copy** shall be submitted and shall include the written portion of the Technical Proposal and the presentation boards (in PDF format to the link provided).

.2 Technical Proposal Format

All Technical Proposals shall be submitted in 8.5" x 11" or 11" x 17" 3-ring or spiral bound binders. Items not physically suitable for inclusion may be submitted separately with a clear proposal reference to the separately furnished items.

Technical proposal narrative shall be typed in Times New Roman or a comparable font that is easy to read utilizing 11-point font or larger.

.3 Design Builder Identification Number

Prior to the Technical Proposal submittal, the University will assign a Design Builder Identification Number to each Proposer. The Design Builder Identification Number shall be used by each Proposer to identify its Technical Proposal submittal.

Blind Evaluation: To provide an impartial review of each Proposer's Technical Proposal submittal, the Technical Evaluation Committee will conduct a Blind Evaluation. Therefore, **the entire contents of the Technical Proposal submittal shall have all references to the Proposer's identity removed**. All references that may identify the Design Build team including, but not limited to, firm or team names, staff identification, consultant identification, addresses, telephone numbers, logos, letterhead, stationary, binders, or business cards or specifics about the firm or its size and history shall be removed.

1.3 Presentation Boards

Proposer shall submit **one (1)** set of **up to, but no more than three (3)** standalone presentation boards for each building, not larger than 30" x 42" as part of the Proposal submittal. Plans submitted as part of a presentation board shall be to scale with the exception of perspectives and/or renderings.

The following drawings and perspectives shall be provided on presentation boards, including copies of boards not smaller than ½ size scale drawings and provided **ELECTRONICALLY (IN PDF FORMAT) AS INDICATED**:

.1 Site Logistics – Indicate for all phases of construction ADA path of travel [POT], pedestrian access, emergency vehicular access, proposed crane and/or helicopter logistics and placement, proposed laydown requirements.

.2 Floor/Roof Plans – Floor plans indicating scope of work and phasing that will affect the normal day-to-day business of the Student Services Building and Student Recreation Center South, demolition roof plan, new roof equipment plan with electrical.

1.4 Schematic Design Submittal Requirements

The following drawings shall be provided as bound sheets (the original shall not be smaller than 30" x 42" but additional copies can be 11" x 17") and within the technical proposal binder as 11" x 17" sheets, and on a CD (in Auto CAD or PDF format) as indicated:

.1 Architectural Floor Plans and Roof Plans

a. Scale: Varies (see below)

b. Architectural Floor and Roof Plans to include the following Drawing Requirements:

1) Floor Plans to include the following: Scale: 1/8" = 1'

i. Equipment and fixture locations

ii. Dimension structural grid

2) Roof Plan (s) to include the following: Scale: 1/8" = 1'

i. Dimensioned structural grid

ii. Roof system and openings

iii. Roof top equipment and utilities.

.2 Conceptual Structural Plan

All levels, typical floor plan shall include:

a. Scale shall not be smaller than 1/8" = 1'.

b. Drawings depicting any structural changes sufficient for University's third-party peer review.

.3 Electrical Conceptual Roof Plans, and Single Line Diagrams

a. Scale: 1/8" = 1'

b. All information in this section is to be placed over an architectural background

c. Conceptual roof plans to include the following Drawing Requirements (typical spaces do not need to be repeated).

1) Location and identification of existing feed to be extended/enlarged.

2) Location and identification of all equipment disconnects.

3) Location and identification of all relevant electrical panels.

4) Conceptual new single line power diagram.

1.5 Technical Proposal Scoring

The Technical Proposal will be scored as follows:

Description	Points Available
Executive Summary	**0**
TAB 1 – Architecture / Aesthetic Context / Roof Warranty	**50**
TAB 2 – Structural	**50**
TAB 3 – Electrical Design and Production	**100**
TAB 4 – Project Enhancements, Functionality and Added Value	**20**
TAB 5 – Schedule	**75**
TAB 6 – Deviations from Request for Proposal	**0**
Oral Presentation	**5**
Subtotal:	**300**
Best and Final Offer (if necessary)	**20**
Total:	**320**

2. TECHNICAL PROPOSAL SUBMITTAL

Each Proposer shall provide the following information in the content and format as described. Proposal shall be indexed with tabs numbered and labeled in bold type denoting the sections as follows:

EXECUTIVE SUMMARY	***0 POINTS***

Suggested Text Length: 1 – 2 pages

The Executive Summary should stand on its own to convey the primary design, program and technical elements of your proposal that clearly and collectively demonstrate why your project approach represents the overall **best value** to the University.

TAB 1	***50 POINTS***

Suggested Text Length: 1 – 2 pages

ARCHITECTURAL DESIGN / AESTHETIC CONTEXT / ROOFING WARRANTY

Proposer shall:

1. Demonstrate that the proposed design addresses:
   i. Preservation of existing architectural characteristics.
   ii. Roofing warranty extension.

Narrative may incorporate graphic information and/or presentation boards.

TAB 2	***50 POINTS***

Suggested Text Length: 1 – 3 pages

STRUCTURAL

Proposer shall:

1. Include a description of the proposed structural design and identify proposed materials and system advantages.
2. Demonstrate that the proposed structural design:
   i. Will meet or exceed the requirements of the RFP requirements, including, but not limited to the California Building Code and University of California Seismic Safety Policy.
   ii. Includes considerations for wind, vibration, and deflection control.

Narrative may incorporate graphic information and/or presentation boards.

TAB 3	***100 POINTS***

Suggested Text Length: 1 – 5 pages

ELECTRICAL DESIGN AND PRODUCTION

Proposer shall (i) indicate the University's electrical design requirements will be met or exceeded; and (ii) include descriptions of the electrical systems:

1. Electrical design narrative shall identify:
   a. How this design maximizes power production within the roof footprint of each building.
   b. Power feed pathway and power distribution.

c. Low voltage systems design and pathway.
d. Energy conservation measures included.

Narrative may incorporate graphic information and/or presentation boards.

TAB 4	***20 POINTS***

Suggested Text Length: 1 – 3 pages

PROJECT ENHANCEMENTS AND ADDED VALUE

Proposer shall demonstrate:

1. How the proposed design, equipment, controls, constructability, logistics may exceed the requirements of the base bid.
2. *Added Value.* Summarize project enhancements that provide the University with added value to the base bid requirements, such as additional features beyond the program requirements.

Narrative may incorporate graphic information and/or presentation boards.

TAB 5	***75 POINTS***

Suggested Text Length: 1 – 2 pages

SCHEDULE

Proposer shall develop and provide a Work Plan demonstrating how it intends to staff and manage the tasks and resources necessary to accomplish the Work, commencing with the Notice to Proceed and ending with the completion of Construction.

1. *Project Approach.* Identify opportunities for improvement, project constraints, mobilization, and potential obstacles that may be associated with each phase of the project and how the Proposer will address each of these challenges. The project approach shall be consistent with and supported by the other elements of the Work Plan that are listed below:
   i. Approach to key elements of project management and administration (staffing plan)
   ii. Proposed strategies for addressing project constraints and overcoming potential challenges that may be associated with each phase of the project and how the Proposer will address each of these issues
   iii. Ordering and delivery of long-lead equipment and/or controls on an expedited schedule. Performing work on a schedule that best limits day-to-day business impact to the Student Services Building and Student Recreation Center (South).
2. *Preliminary Construction Schedule.* Submit a Preliminary Schedule and supporting narrative for the project following Notice to Proceed that are consistent with its Work Plan and that:
   i. Describes the Proposer's approach to the fast-track design and construction of the project
   ii. Indicates significant contract activities including shoulder to shoulder sessions, and procurement activities and durations, including the activities required to complete the Construction Documents and obtain required approvals.
   iii. Identifies the division of the Work by construction Drawing Package and provide the proposed breakdown of drawings and specification sections to be included in the package.

TAB 6 | ***0 POINTS***

Suggested Text Length: 1 page

DEVIATIONS FROM REQUEST FOR PROPOSAL

Proposer shall submit the Deviations Matrix to summarize each instance where the Lump Sum Base Price Proposal, or Alternate Pricing deviates from the requirements established in the Proposal Documents (including, but not limited to the Basis of Design, Campus Standards and Design Criteria, and Specifications). Absent an appropriate reference in the Deviations Matrix, the University will assume that the Design Builder will comply with all the specific requirements of the Proposal Documents during both the design and construction phases of the project.

The Lump Sum Base Price Proposal and Alternate Prices shall include the cost of all proposed deviations from the Proposal Documents. Deviations from the Proposal Documents will not be allowed without prior written approval from Design and Construction Services. After the Award of Contract, proposed product substitutions shall be made according to Specification Section 01 6000, *Product Requirements*.

DEVIATIONS MATRIX[1] (TAB 6)

SPECIFICATION SECTION/CAMPUS STANDARDS AND DESIGN CRITERIA

ITEM DESCRIPTION	DESCRIPTIVE DETAILS	IMPACT OR EFFECT ON PROJECT DESIGN

[1] Suggested format

ORAL PRESENTATION — *5 POINTS*

Proposer shall make an oral presentation of its proposal following the University's evaluation of Technical Proposals and prior to the public opening of the Lump Sum Base Price Proposals. However, if at the conclusion of the evaluation of Technical Proposals, the University determines that requesting a BAFO would be in its best interests, the University will defer the oral presentation and proceed directly to a BAFO process. The University may elect to request written proposal clarifications from the Proposers prior to holding BAFO discussions.

During the oral presentation, Proposers will be allowed 30 minutes to present the most important aspects of their proposals and 30 minutes to answer questions and provide clarifications requested by the Technical Evaluation Committee. Discussions may cover any of the requirements described in the RFP.

Proposed cost shall not be discussed during the oral presentation. The University's summation of Proposal Clarifications shall be accepted by signature of selected Proposer and incorporated into their Proposal by reference.

BEST AND FINAL OFFER (BAFO) — *20 POINTS*

The University may determine that clarifications to the initial proposals and additional discussions with the Proposers are necessary to obtain proposals that are responsive with respect to program and cost requirements, and to optimize the ability to obtain best value for this project. In this case, the University will conduct discussions with each Proposer following the technical evaluation with the intent of allowing the Proposers to submit a BAFO. The University will request BAFO submittals from the Proposers to clarify and document understandings reached during discussions. Instructions for the BAFO submittals including the deadline, format, and content requirements will be issued in writing by the University.

The BAFO submittal will consist of two components:

1. A revised technical proposal or technical proposal supplement covering all additions, changes, or clarifications to the original technical submittal. Revised drawings, presentation boards and other supplements may also be submitted as appropriate and in accordance with the University's written instructions for the BAFO submittal.
2. A revised Lump Sum Base Price Proposal, Lump Sum Base Price Proposal Spreadsheet, and a new Proposal Security, in accordance with the University's written instructions for the BAFO submittal

LUMP SUM BASE PRICE PROPOSAL FORM

FOR

CAMPUS SOLAR ROOF INITIATIVE

UNIVERSITY OF CALIFORNIA, RIVERSIDE

RIVERSIDE, CALIFORNIA

May 22, 2020

PROPOSAL TO: UNIVERSITY OF CALIFORNIA, RIVERSIDE
Planning, Design & Construction
1223 University Avenue, Suite 240
Riverside, California, 92507
(951) 827-4590

PROPOSAL FROM:

_____
(Name of Firm Submitting Proposal)

_____
(Address)

_____
(City, State, Zip Code)

_____
(Telephone & Fax Number)

_____
(Date Submitted)

Note: All portions of this Price Proposal Form must be completed and must include the signed Declaration on the last page of this form before the Proposal is submitted. Failure to execute the Declaration will result in the Proposal being rejected as nonresponsive.

1.0 PROPOSER'S REPRESENTATIONS

Proposer, represents that a) it has the appropriate active Contractor's license required by the State of California; b) it has carefully read and examined the Proposal Documents for the proposed Work on this Project; c) it has examined the site of the proposed Work and all information available to Prequalified Proposers; d) it has become familiar with all the conditions related to the proposed Work, including the availability of labor, materials, and equipment; e) that all information and submittals provided as part of the prequalification process are accurate and correct. Proposer hereby offers to furnish all labor, materials, equipment, tools, transportation, and services necessary to complete the proposed Work on this Project in accordance with the Contract Documents for the sums quoted. Proposer further agrees that it will not withdraw its Proposal within 45 days after the Proposal Deadline, and that, if it is selected as the apparent lowest responsive and responsible Proposer, that it will, within 10 days after receipt of notice of selection, sign and deliver to University the Agreement in triplicate and furnish to University all items required by the Proposal Documents. If awarded the Contract, Proposer agrees to complete the proposed Work within the number of days specified in the Agreement.

2.0 ADDENDA

Proposer acknowledges that it is Proposer's responsibility to ascertain whether any Addenda have been issued and if so, to obtain copies of such Addenda from University's facility at the appropriate address stated on Page 1 of this Price Proposal Form. Proposer therefore agrees to be bound by all Addenda that have been issued for this Proposal.

3.0 **LUMP SUM BASE PROPOSAL**

BASE PROPOSAL
MAXIMUM ACCEPTANCE COST = $2,250,000 **$** ☐ , ☐☐☐ , ☐☐☐ . ☐☐ (Place figures in appropriate boxes.)

4.0 UNIT PRICES – NOT USED

5.0 DAILY RATE OF COMPENSATION FOR COMPENSABLE DELAYS – Phase 3

Proposer shall determine and provide in the space below, the daily rate of compensation for any compensable delay caused by University at any time during the performance of the Work for Phase 3:

$ ☐ , ☐☐☐ X 30 days (multiplier)

(Place Daily Rate in appropriate boxes.)

University will perform the extension of the daily rate times the multiplier.

The daily rate shown above will be the total amount of Proposer entitlement for each day of compensable delay. The number of days of compensable delay shown as a "multiplier" above is not intended as an estimate of the number of days of compensable delay anticipated by the University. The University will pay the daily rate of compensation only for the actual number of days of compensable delay, as defined in the General Conditions; the actual number of days of compensable delay may be greater or lesser than the "multiplier" shown above.

6.0 NOT USED

7.0 SELECTION OF APPARENT LOW PROPOSER

The apparent low proposer will be determined in accordance with the evaluation process attached to the Request for Proposal.

8.0 ALTERNATES **(Refer to Specification Section 01 2300)**

Provide all design, engineering, coordination, labor, materials, equipment, accessories, and Design Builder and subcontractor overhead, mark-up, and profit required for the following Alternates. State the amount by placing figures in the corresponding boxes. Failure to quote an amount or the insertion of any words that qualify the Price Proposal will result in the Proposal being rejected as nonresponsive.		
Alternate No. 1 – Life Cycle Maintenance – 25 years.	$ ☐ , ☐☐☐ , ☐☐☐ (Place figures in appropriate boxes.) University reserves the right to accept this alternate concurrent with the Notice to Proceed for Phase 1.	

9.0 PROPOSER INFORMATION

TYPE OF ORGANIZATION:

_____
(Corporation, Partnership, Individual, Joint Venture, etc.)

IF A CORPORATION, THE CORPORATION IS ORGANIZED UNDER THE LAWS OF:

THE STATE OF _____.
(State)

NAME OF PRESIDENT OF THE CORPORATION:

_____
(Insert Name)

NAME OF SECRETARY OF THE CORPORATION:

_____
(Insert Name)

IF A PARTNERSHIP, NAMES AND TITLES OF PERSONS SIGNING THE BID ON BEHALF OF PROPOSER AND ALL GENERAL PARTNERS:

PERSONS SIGNING THE BID ON BEHALF OF PROPOSER:

_____
(Insert Name and Title)

GENERAL PARTNERS:

_____
(Insert Names)

_____
(Insert Names-continued)

CALIFORNIA CONTRACTORS LICENSE(S):

_____
(Name of Licensee)

_____
(Classification) (License Number) (Expiration Date)

10.0 REQUIRED COMPLETED ATTACHMENTS

The following documents are submitted with and made a condition of this Proposal:

1. Proposal security in the form of _____
(Bid Bond or Certified Check)

12.0 DECLARATION

I, _____ (Printed name), hereby declare that I am the _____ _____ (Title) of _____ (Name of Proposer) submitting this Price Proposal Form; that I am duly authorized to execute this Price Proposal Form on behalf of Proposer; and that all information set forth in this Price Proposal Form and all attachments hereto are, to the best of my knowledge, true, accurate, and complete as of its submission date.

I declare, under penalty of perjury, that the foregoing is true and correct and that this declaration was subscribed at:_____ (Location and city), County of _____, State of _____, on _____ (Date).

_____
(Signature)

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That we, _____,as Principal,

and _____,as Surety, are held and firmly bound unto THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter called THE REGENTS, in the sum of 10% of the Lump Sum Base Proposal amount for payment of which in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, Principal has submitted a Proposal for the work described as follows:

Campus Solar Roof Initiative
Project No. 9505681, Contract Number: 950581-DB-2020-68

NOW, THEREFORE, if Principal shall not withdraw said Proposal within the time period specified after the Proposal Deadline, as defined in the Proposal Documents or within **60** days after the Proposal Deadline if no time period be specified, and, if selected as the apparent lowest responsible Proposer, Principal shall, within the time period specified in the Proposal Documents, do the following:

1. Enter into a written agreement, in the prescribed form, in accordance with the Proposal.
2. File two bonds with THE REGENTS, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by the Request for Proposal Documents.
3. Furnish certificates of insurance and all other items as required by the Request for Proposal Documents.

In the event of the withdrawal of said Proposal within the time period specified, or within **60** days if no time period be specified, or the disqualification of said Proposal due to failure of Principal to enter into such agreement and furnish such bonds, certificates of insurance, and all other items as required by the Proposal Documents, if Principal shall pay to THE REGENTS an amount equal to the difference, not to exceed the amount hereof, between the amount specified in said Proposal and such larger amount for which THE REGENTS procure the required work covered by said Proposal, if the latter be in excess of the former, then this obligation shall be null and void, otherwise to remain in full force and effect.

In the event suit is brought upon this bond by THE REGENTS, Surety shall pay reasonable attorneys' fees and costs incurred by THE REGENTS in such suit.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of_____, 20____.

Principal: _____ *(Name of Firm)*	Surety: _____ *(Name of Firm)*
By: _____ *(Signature)*	By: _____ *(Signature)*
_____ *(Printed Name)*	_____ *(Printed Name)*
Title: _____	Title: _____

Address for Notices: _____

_____

_____
(Phone)

_____
Fax)

Note: Notary acknowledgment for Surety and Surety's Power of Attorney must be attached.

DESIGN BUILDER/CONTRACTOR NAME: _____

REF NO.	TRADE DESCRIPTION	LUMP SUM BASE PRICE TOTAL ($)
00	**GENERAL CONDITIONS, OH & FEE**	
00.1	General Expense's	$ -
00.2	Supervision, Fringes, Taxes & Surcharges	
00.3	Performance & Payment Bond	
00.4	Insurance	
00.5	Fee	
00.6	Other: _____	
	Subtotal:	$ -
01	**GENERAL REQUIREMENTS**	
01.1	Design Fee (Phase 1 & 2)	$ 37,000
01.2	Testing and Inspection	
01.3	Allowances	
01.4	Commissioning	
01.5	Storm Water Pollution Prevention Plan	
01.6	Mobilization	
01.7	Temporary Facilities/Fencing	
01.80	Off Site Staging	
01.90	Hoist Facilities	
01.10	Temporary Utilities	
01.11	Cleaning	
01.12	Protection & Safety	
01.13	Demobilization	
01.14	Other: _____	
	Subtotal:	$ -

05	**METALS**	
05.1	Structural Steel	$ -
05.2	Steel Joists	
05.3	Cold Form Metal Framing	
05.4	Other: _____	
	Subtotal:	$ -

07	**THERMAL & MOISTURE PROTECTION**	
07.4	Roofing	
07.5	Flashing & Sheet Metal	
07.6	Roof Specialties & Accessories	
07.10	Other: _____	
	Subtotal:	$ -

26	**ELECTRICAL**	
26.1	Power Equipment & Circuitry	$ -
26.2	Lighting Fixtures & Controls	
26.3	Equipment - Substations, Switchgear, Transformers, Panelboards	
26.4	Emergency Power	
26.5	Site Utilities (Electrical, Communication, Data)	
26.6	Other: _____	
	Subtotal:	$ -

27	**COMMUNICATIONS**	
27.1	Communications (Telephone/Data)	$ -
27.2	Other: _____	
	Subtotal:	$ -

TOTAL LUMP SUM BASE PRICE: **#REF!**

PROPOSAL EVALUATION PROCESS

Introduction

The University intends to evaluate proposals and award a contract without discussions with Proposers. Therefore, the Proposer's initial proposals should contain its best terms from a price and technical standpoint. The University reserves the right to request a Best and Final Offer (BAFO) after the receipt of initial proposals if it determines clarifications to the initial proposals and additional discussions with the Proposers to be in the University's best interests.

Initial proposals will consist of a Technical Proposal and Lump Sum Base Price Proposal as described in this Request for Proposal (RFP). The University will evaluate and score the proposals as described below.

All responsive proposals will be evaluated to determine which one provides the University with the "best value," as defined below. The Proposer that achieves the **lowest** cost per technical point will be selected as the apparent Best Value Proposer.

Technical Evaluation

A Technical Evaluation Committee comprised of representatives of the University's Planning, Design & Construction department and others selected by the University will evaluate the proposals to determine the following:

1. Whether each Technical Proposal is responsive to the requirements of the Proposal Documents.
2. The technical score of each responsive proposal. Using the evaluation criteria identified in the Technical Proposal document, each Technical Evaluation Committee member will individually evaluate and assign technical points for each proposal.

Best Value Determination

For each responsive proposal, the Best Value Score will be calculated as follows:

$$\text{Best Value Score} = \frac{\text{Total Project Cost}}{\text{Total Proposal Points}}$$

Total Project Cost

The Total Project Cost used to determine best value for each responsive proposal will be the sum of the following:

1.		Lump Sum Base Price Proposal
2.	+	All Extended Unit Prices
3.	+	Extended Cost for Compensable Delay
4.	+	Alternate
		Total Project Cost

If the University awards a contract without discussions with the Proposers, the Total Project Cost will be calculated using the Proposer's Lump Sum Base Price Proposal. If discussions are held with the Proposers, only the final proposal revisions submittal will be used to calculate the Total Project Cost.

Notes:

1. The Lump Sum Base Price Proposal: This amount will be taken from the Lump Sum Base Price Proposal Form.
2. All Extended Unit Prices: Unit prices will be taken from the Lump Sum Base Price Proposal Form. Each unit price provided by the Proposer will be multiplied by the quantity indicated in Division 1, Section 01 2200, Unit Prices. The extended totals for all of the unit price items will be added together to determine the All Extended Unit Prices amount.
3. Extended Cost for Compensable Delay: This amount will be determined using information from the Lump Sum Base Price Proposal Form. The Proposer's Daily Rate of Compensation for Compensable Delay will be multiplied by the University's multiplier (e.g., 60 days) to determine the Extended Cost for Compensable Delay.
4. Alternates: Alternates will be taken from the Lump Sum Base Price Proposal Form.

Total Proposal Points

The Total Proposal Points used to determine best value for each responsive proposal will be determined as follows:

$$\text{Total Proposal Points} = \frac{\text{Sum of All Points Awarded by Technical Review Committee}}{\text{Number of Technical Evaluation Committee Members}}$$

Request for Best and Final Offer

The University may determine that clarifications to the initial proposals and additional discussions with the Proposers are necessary to obtain proposals that are responsive with respect to program and cost requirements, and to optimize the ability to obtain best value for this project. In this case, the University will conduct discussions with each Proposer following the technical evaluation and the public opening[1] of the Lump Sum Base Price Proposals, with the intent of allowing the Proposers to submit a BAFO. Discussions may include persuasion and alteration of assumptions and positions, and may result in amendments to the Proposal Documents as needed to align the project program and budget.

The University will request BAFO submittals from the Proposers as described in the Technical Proposal section of the RFP.

BAFO Evaluation

Each Proposer's BAFO submittal will be evaluated by the University's Technical Evaluation Committee to determine best value. The evaluation criteria and technical points available for the BAFO submittal are established by the University in the Technical Proposal section of the RFP.

Oral Presentation

Each Proposer shall make an oral presentation of its proposal following the University's evaluation of Technical Proposals and prior to the public opening of the Lump Sum Base Price Proposals. However, if at the conclusion of the evaluation of Technical Proposals, the University determines that requesting a BAFO would be at the best interest of the University, the University will defer the Oral Presentations and proceed directly to a BAFO process. The University may elect to request Proposal clarifications of the Proposers for written response prior to holding BAFO discussions. During the presentation, the Proposers shall describe the most important aspects of their proposals, and provide clarifications requested by the Technical Evaluation Committee which may include but are not limited to:

- Project Design
- Mitigation of Subsurface Risks and Negative Construction Impacts
- Design of Structural and Electrical Systems

[1] The bid opening will be held to confirm that the proposals appear to be responsive to the RFP requirements. Prices will not be read publicly.

Proposed costs shall not be discussed during the oral presentation. The University's summation of Proposal Clarifications shall be accepted by signature of selected Proposer and incorporated into their Proposal by reference.

Example Best Value Determination

An example of how the best value determination works is as follows:

Proposer	Total Proposal Points	BAFO Points, if Applicable	Total Proposal Points	Total Project Cost	Best Value Score
A	91	20	111	$56,000,000	$504,504.50 per point
B	85	15	100	$54,950,000	$549,500.00 per point
C	79	18	97	$53,800,000	$554,639.18 per point

In the example, Proposer A has the lowest Best Value Score and would be selected as the apparent Lowest Responsible Proposer.

Project No. 950581 Design/Build for Rooftop PV System *at Student Services and Student Rec. Center, South*

	Tasks	Prior Complete	May				June					July				Aug					Sept				Oct				Nov				Dec				January				Feb			
			4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	7	14	21	28	4	11	18	25	1	8	15	2
1	**Legacy and Site Conditions**																																										
	a. Confirm Structural Integrity of Student Services and Student Recreation Center, South	completed																																									
	b. Kickoff Meeting, Review Policy Plan for Design/Build	completed																																									
	c. Drawing Review	completed																																									
	d. Site Access, Power and Massing Confirmation	completed																																									
	e. Issue Probable Cost (and options)	completed																																									
2	**Stakeholder Meeting and Plan**																																										
	a. Finding / Options	completed																																									
	b. Market Review	completed																																									
3	**Design/Build Package**																																										
	a. Electrical Criteria	completed																																									
	b. Parameters for: Monitoring, Structural, Massing, EMS Interface	completed																																									
	c. Access and Construction Logistics	completed																																									
	d. Panel Efficiency / Inverter Requirements	completed																																									
	e. Contractor Pre-Qualifications and Selection Criteria	completed																																									
	f. Issue Final Design/Build Specifications	completed																																									
4	**Bidding Selection Process**																																										
	a. Confirm Basis of Design	completed																																									
	b. Pre-Qualification Advertisement	completed																																									
	c. Pre-Qualification Meeting	completed																																									
	d. Pre-Qualification Questionnaire Due	completed																																									
	e. Pre-Qualification Questionaire Evaluation	completed																																									
	f. Advertise to Pre-Qualification Design-Builders (2 weeks)																																										
	g. Zoom Pre-Proposal Conference				18-May																																						
	h. Zoom 1:1 x 2 each (2 proposers)																																										
	i. RFI's Due						1-Jun																																				
	j. Addendum Period							8-Jun																																				
	k. Proposals Due and Scrubbing								15-Jun																																			
	l. Evaluate and Score, Announce Best Value Proposer									22-Jun																																		
	m. Notice to Proceed										29-Jun																																
5	**Construction**																																										
	a. Pre-Construction Meeting											1 day																																
	b. Design Mobilization and System Design																																										
	c. Design Review																																										
	d. Construction Mobilization and Construction																																										
	e. Testing																																										
	f. Close-Out																																										

AGREEMENT

THIS AGREEMENT is made as of the _____ day of _____, 20_____, between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (the "University"),

whose facility is:	University of California, Irvine
whose address for notices is:	Planning, Design & Construction UNIVERSITY OF CALIFORNIA, RIVERSIDE 900 University Avenue Riverside, CA 92521
and Design Builder:	Firm Name
whose address for notices is: (Include Name, Title, Phone No.)	Name Street Address City, State & Zip Phone
for the Project:	Campus Solar Roof Initiative Project No. 950581 University of California Riverside County Riverside, CA 92521
University's Representative is:	John Franklin Project Manager
whose address for notices is:	Planning, Design & Construction UNIVERSITY OF CALIFORNIA, RIVERSIDE 900 University Avenue Riverside, CA 92521

University and Design Builder hereby agree as follows:

ARTICLE 1 WORK

Design Builder shall provide all work required by the Contract Documents (the "Work"). Design Builder agrees to do additional Work arising from changes ordered by the University pursuant to Article 7 of the General Conditions. The Work will be performed in Phases identified as follows:

PHASE 1	**DESIGN DEVELOPMENT DOCUMENTS**
PHASES 2	**CONSTRUCTION DOCUMENTS**
PHASES 3	**CONSTRUCTION**

ARTICLE 2 OPTIONS

The University may exercise its option for performance of the Work under Phases 2 and 3 by providing a written Notice to Proceed to the Design Builder for performance under either or both of the Phases. The Option for Phase 2 may be exercised not later than 30 days after the expiration of Phase 1 Time or the acceptance by the University of the Design Development Documents under Phase 1, whichever is later. The Option for Phase 3 may be exercised not later than 30 days after the expiration of Phase 2 Time or the acceptance by the University of the Construction Documents under Phase 2, whichever is later. If Design Builder has complied with all other terms of the Contract and the University fails to exercise its Option for Phase 3 by such calculated date, the Design Builder agrees that a time extension will be its sole and complete remedy for any damage or loss incurred as a result of the delay in exercising said Option for Phase 3.

The University's "OPTIONS" rights under this Article 2 are independent of the "Termination for Convenience" rights as set forth in Article 13, section 13.4 of the General Conditions. As such, if the University opts to not proceed with Phase 2 after the completion of Phase 1, Design Builder's right of recovery is limited to the Contract Sum for Phase 1. If the University opts to not proceed with Phase 3 after the completion of Phases 1 and 2, Design Builder's right of recovery is limited to the Contract Sum for Phases 1 and 2.

The University retains the right to terminate this Contract for convenience at any time in accordance with Article 13 of the General Conditions.

ARTICLE 3 CONTRACT DOCUMENTS

"Contract Documents" means the Advertisement For Design Builder Prequalification, Request for Proposals, Price Proposal Form, Proposal Evaluation Process, Project Directory, Preliminary Schedule, Bid Bond, Design Builder's Proposal, Notice of Selection As Apparent Best Value Proposal, this Agreement, General Conditions, Supplementary Conditions, Exhibits, Specifications, List of Drawings, Drawings, Addenda, Notice to Proceed, Change Orders, Notice of Completion, and all other documents identified in this Agreement that together form the contract between University and Design Builder for the Work (the "Contract"). The Contract constitutes the complete agreement between University and Design Builder and supersedes any previous agreements or understandings.

ARTICLE 4 CONTRACT SUM

Subject to the provisions of the Contract Documents University shall pay to Design Builder, for the performance of the Work, ${AMOUNT IN FIGURES}, the "Contract Sum", for Phase 1. The University shall pay for the performance of the Work for Phases 2 and 3, if the options for said Phases are exercised, the following amounts:

ARTICLE 4 CONTRACT SUM

Subject to the provisions of the Contract Documents. The University shall pay to Design Builder, for the performance of the Work for Phases, if the options for said Phases are exercised, the following amounts:

PHASE 1 AND 2	**$37,000**
PHASE 3	**$**
Total Contract Sum for PHASES 1, 2 AND 3	**$**

The Contract Sum includes the following Alternates Accepted by University:

University reserves the right to accept the remaining Alternates within the stipulated time as stated in Section 01 2300, beyond the starting date stated in the Notice to Proceed after the date of this Agreement:

The Contract Sum will be increased by an amount equal to the Unit Price multiplied by the actual number of units of each Unit Price item incorporated in the Work.

ARTICLE 5 CONTRACT TIME

By signing this agreement, Design Builder represents to University that i) the Phase 1 Time, Phase 2 Time, and Phase 3 Time are reasonable for completion of the Work of the respective Phase; ii) the Contract Time is reasonable for completion of the Work of all the Phases; and iii) Design Builder will complete the Work within the Contract Time.

The total time scheduled for the Work shall not exceed the durations listed in the approved project schedule, unless agreed in writing by University. The durations listed for University's review period shall be computed from the date on which University receives a clear, complete submittal.

PHASE	**CONTRACT TIME**
1 and 2	Design Builder shall commence the Work for Phases 1 and 2 on the date specified in the Notice to Proceed for Phase 1 and 2, and fully complete the work within 30 days, the **"Phase 1 and 2 Time."** The Contract Time at contract award is the Phase 1 and 2 Time.
3	The Design Builder shall commence the Work for Phase 3 on the date specified in the Notice to Proceed and fully complete the Work within **175** calendar days. If the University exercises its option for Phase3, the days specified for its performance, plus any days between the completion of Phase 1 and 2 and the exercise of the option, will be added to the Contract Time to establish a revised Contract Time for completion of Phases 1, 2 and 3.
Total Contract Time: **205** calendar days. (Total Contract Time includes **3** days for rain delays, refer to the Supplementary Conditions)	

ARTICLE 6 LIQUIDATED DAMAGES

If University has exercised its option for Phases 2 and 3 and Design Builder fails to complete the Work for Phases 2 and 3 within the Contract Time, Design Builder shall pay to University, as liquidated damages and not as a penalty, the applicable amount(s) indicated below as "Liquidated damage daily rate for Phase 3" for each day after the expiration of the Contract Time that the Work remains incomplete. After Substantial Completion, the liquidated damages daily rate for Phase 3 shall be reduced to the sum indicated below. University and Design Builder agree that if the Work is not completed within the Contract Time, University's damages would be extremely difficult or impracticable to determine and that said amounts indicated below are reasonable estimates of and reasonable sums for such damages. University may deduct any liquidated damages due from Design Builder from any amounts otherwise due to Design Builder under the Contract Documents. This provision shall not limit any right or remedy of University in the event of any other default of Design Builder other than failing to complete the Work within the Contract Time. This Article 6 will only apply if the University exercises its Option for Phases 2 and 3.

Liquidated damages daily rate for Phase 3, Construction - **$1,200.00** (seven hundred fifty dollars), on or before Substantial Completion.

Liquidated damages daily rate for Phase 3, Construction - **$250.00** (two hundred fifty dollars), after Substantial Completion.

ARTICLE 7 COMPENSABLE DELAY

If Design Builder is entitled to an increase in the Contract Sum as a result of a Compensable Delay, determined pursuant to Articles 7 and 8 of the General Conditions, the Contract Sum will be increased by the sum indicated below per day for each day for which such compensation is payable. This Article 7 will apply only if the University exercises its Option for the applicable Phase and only to the extent that Design Builder fulfills requisites proving entitlement to Compensable Delay.

Compensable delay daily rate for Phase 3, Construction - $ _____

ARTICLE 8 ASSIGNMENT

If this Agreement is terminated prior to the exercise of the University's Option for Phase 3, the Design Builder shall execute an assignment to the University of all contracts with Design Professionals for work to be performed on Phases 1 and 2.

ARTICLE 9 DUE AUTHORIZATION

The person or persons signing this Agreement on behalf of Design Builder hereby represent and warrant to University that this Agreement is duly authorized, signed, and delivered by Design Builder.

ARTICLE 10 DESIGN BUILDER'S COVENANTS AND REPRESENTATIONS

Without superseding, limiting, or restricting any other representation or warranty set forth elsewhere in the Contract Documents, or implied by operation of law, the Design Builder makes the following covenants and representations to University:

10.1 Design Builder and all of its Design Professionals and subcontractors are properly certificated, licensed and qualified to perform the Work required by the Contract Documents.

10.2 Design Builder accepts the relationship of trust and confidence with the University established by the Contract Documents. Design Builder will cooperate with University.

10.3 Design Builder and its Design Professionals have carefully examined the site of the Project and the adjacent areas, have suitably investigated the nature and location of the Construction Work and have satisfied themselves as to the general and local conditions which will be applicable, including but not limited to: (1) conditions related to site access and to the transportation, disposal, handling and storage of materials; (2) the availability of labor, water, power and roads; (3) normal weather conditions; (4) observable physical conditions at the site and existing site conditions including: size, utility capacities and connection options of external utilities; (5) the surface conditions of the ground and (6) the character and availability of the equipment and facilities which will be needed prior to and during the performance of Construction Work.

10.4 Design Builder and its Design Professionals have suitably reviewed the site survey, record documents, seismic data, preliminary geotechnical and other test reports, environmental documents and any other documentation furnished by University in the Exhibits.

10.5 Design Builder and its Design Professionals have carefully reviewed the following exhibits to the Design Build Contract: (1) Scope of Work (including Applicable Codes, Rules and Regulations, Energy Requirements, etc.); (2) the Performance Specifications; (3) Project Program; and (4) Schematic Drawings. Design Builder acknowledges that these Exhibits establish the scope, level of quality, design intent and the procedures for the development of the design to a state of 100% completion.

Design Builder agrees that (1) the Exhibits depict and describe a design for the Project which is partially complete and may vary in degree of completion from 5% to 95% depending on the particular Project; (2) it will manage, coordinate and fully complete the design; (3) Design Builder will cause its Design Professionals to describe and depict the final design for the Project, as approved by the University, in Construction Documents which will include all information required by the building trades to complete the construction (other than such details customarily developed by others during construction) and (4) it will manage and timely construct the Project in consideration for the University's payment of the Contract Sum.

10.6 Design Builder and its Design Professionals have reviewed the Preliminary Schedule attached to the Request for Proposals and agree that the design and construction tasks and milestones are reasonable and feasible, except as modified by Design Builder's Proposed Contract Schedule, approved by University. Design Builder also agrees that time is of the essence for the performance of the Work.

10.7 Design Builder agrees that all Construction Documents will be complete, coordinated, and accurate.

10.8 Design Builder agrees that all materials, equipment and furnishings incorporated into or used in the Construction Work will be of good quality, new (unless otherwise required or permitted by the Contract Documents) and free of liens, claims and security interests of third parties. If required by the University, Design Builder will furnish satisfactory evidence as to the kind and quality of the materials, equipment and furnishings.

10.9 Design Builder agrees that the Work will be of good quality, free of defects and will conform with the requirements of the Contract Documents. Work not conforming to the requirements of the Contract Documents, including substitutions in design or construction not specifically approved or authorized by the University in advance, may be considered defective.

10.10 Design Builder agrees to correct any error(s), omission(s), or deficiencies in the Contract Documents or Construction Documents at no additional cost to University; however, this provision in no way limits the liability of Design Builder.

THIS AGREEMENT is entered into by University and Design Builder as of the date set forth above.

DESIGN BUILDER

_____
(Name of Company)

Design Builder's California Contractor's License(s):

a _____
(Type of Organization)

_____
(Name of Licensee)

By: _____
(Signature)

_____
(Classification and License Number)

_____
(Print Name)

_____
(Expiration Date)

_____
(Title)

_____
(Design Builder's Employer Identification Number)

Recommended:
By University's Representative:

_____
(Signature & Date)

John Franklin
Senior Project Manager
Planning, Design & Construction
(Print Name & Title)

Funds Sufficient:
By Financial Administrative Officer:

_____
(Signature & Date)

Susan McFadden
Senior Financial Analyst
Planning, Design & Construction
(Print Name & Title)

UNIVERSITY:
By The Regents of the University of California:

_____
(Signature & Date)

Blythe R. Wilson, Architect
Director of Project Management
Planning, Design & Construction
(Print Name & Title)

Account No.: _____ Activity Code: _____
Fund: _____ Function: _____
Cost Center: _____ Project Code: _____

Attach notary acknowledgment for all signatures of Design Builder. If signed by other than the sole proprietor, a general partner, or corporate officer attach original notarized Power of Attorney or Corporate Resolution.

GENERAL CONDITIONS

(Design Build Contracts – Without UCIP)

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RECITALS

The documents included in the Request for Proposals and the Design Builder's Proposal, incorporated herein, and designated as part of the Contract Documents are provided by the University to establish the scope, level of quality and design intent, and the reporting procedures for the development and construction of the entire Project. The Design Builder shall comply with the Contract Sum, the Contract Time, the Preliminary Schedule or approved Contract Schedule as applicable, the Project Program, the performance specifications, the building massing, building heights and setbacks, public spaces, landscape design, and the general architectural character of the building described in the Criteria Documents. By incorporating the Design Builder's Proposal as a part of this Contract, the University does NOT accept any provision of the Design Builder's Proposal that is not in conformance with the criteria of the Request for Proposals.

In consideration of the mutual agreements, covenants and conditions set forth below, and the Recitals set forth above, the adequacy of which is hereby acknowledged, Design Builder and University agree as follows:

ARTICLE 1

GENERAL

1.1 BASIC DEFINITIONS

1.1.1 APPLICABLE CODE REQUIREMENTS
The term "Applicable Code Requirements" means all laws, statutes, the most recent building codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over University, Design Builder, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work.

1.1.2 APPLICATION FOR PAYMENT
The term “Application for Payment” means the submittal from Design Builder wherein payment for certain portions of the completed Work is requested in accordance with Article 9 of the General Conditions.

1.1.3 ARCHITECT OF RECORD
The term “Architect of Record” means the Design Professional identified in the Supplementary Conditions that is licensed in the State of California and employed or commissioned by the Design Builder to prepare design documents and construction documents.

1.1.4 BENEFICIAL OCCUPANCY
The term “Beneficial Occupancy” means the University's occupancy or use of any part of the Work in accordance with Article 9 of the General Conditions.

1.1.5 CEQA
The term “CEQA” means the California Environmental Quality Act, Public Resources Code Section 21000 et seq.

1.1.6 CERTIFICATE FOR PAYMENT
The term “Certificate for Payment” means the form signed by University's Representative attesting to the Design Builder's right to receive payment for certain completed portions of the Work in accordance with Article 9 of the General Conditions.

1.1.7 CERTIFICATE OF SUBSTANTIAL COMPLETION
See Article 9.7 of the General Conditions.

1.1.8 CHANGE ORDER
See Article 7.2 of the General Conditions.

1.1.9 CHANGE ORDER REQUEST
The term “Change Order Request” means a proposal for a Change Order submitted by the Design Builder to the University, either at the request of the University, or at the Design Builder’s own initiative.

1.1.10 CLAIM
See Article 4.3 of the General Conditions.

1.1.11 COMPENSABLE DELAY
The term “Compensable Delay” means a delay that entitles the Design Builder to an adjustment of the Contract Sum and an adjustment of the Contract Time pursuant to Articles 7 and 8 of the General Conditions.

1.1.12 CONSTRUCTION DOCUMENTS
The term “Construction Documents” means the plans and specifications prepared by the Design Builder for the Project, approved by the University. The Construction Documents shall set forth in detail all items necessary to complete the construction (other than such details customarily provided by others during construction) of the Project in accordance with the Contract Documents (subject to their completion following commencement of the Construction Phase). All amendments and modifications to the Plans and Specifications must be approved by the University in writing.

1.1.13 CONSTRUCTION DOCUMENTS PHASE
The term “Construction Documents Phase” means the period of time set forth in the Agreement beginning with the issuance of the approval of Design Development Phase. This is also referred to within the Contract Documents as “Phase 2” and the two terms may be used interchangeably. The scope of the Construction Documents Phase is further defined in the “Scope of Work” Exhibit. The term “Phase 2 Time” is defined in Article 5 of the Agreement.

1.1.14 CONSTRUCTION NOTICE TO PROCEED
The term “Construction Notice to Proceed” means the written notice given by the University to the Design Builder advising that the Site is available to the Design Builder and directing the Design Builder to commence the Construction Phase of the Project.

1.1.15 CONSTRUCTION PHASE
The term “Construction Phase” means the period of time set forth in the Agreement beginning with the issuance of the Construction Notice to Proceed and ending on the date of Final Completion of the Project. This term is also referred to within the Contract Documents as “Phase 3” and the two terms may be used interchangeably. The scope of the Construction Phase is further defined in the “Scope of Work” Exhibit. The term “Phase 3 Time” is defined in Article 5 of the Agreement.

1.1.16 CONSTRUCTION WORK
The term “Construction Work” means that portion of the Work consisting of the provision of labor, materials, furnishings, equipment and services in connection with the construction of the Project as set forth in the Contract Documents.

1.1.17 CONTRACT
The term “Contract” shall have the meaning identified in Article 3 of the Agreement.

1.1.18 CONTRACT DOCUMENTS
The term “Contract Documents” means all documents listed in Article 3 of the Agreement.

1.1.19 CONTRACT MILESTONE
The term “Contract Milestone” means any requirement in the Contract Documents that reflects a planned point in time for the start or completion of a portion of the Work measured from i) the date of any of the Notices to Proceed or ii) the date of another Contract Milestone defined in the Contract Documents, as applicable.

1.1.20 CONTRACT SCHEDULE
The term “Contract Schedule” means the graphical representation of a practical plan, in accordance with the Specifications, to perform and complete the Work within the Contract Time. The detailed requirements for the Contract Schedule are stated in Article 3 of the General Conditions.

1.1.21 CONTRACT SUM
The term “Contract Sum” means the amount of compensation stated in the Agreement for the performance of the Work, as adjusted by Change Order.

1.1.22 CONTRACT TIME
The term “Contract Time” means the number of days set forth in the Agreement within which Design Builder must achieve Final Completion of the Work, as adjusted by Change Order.

1.1.23 COST OF EXTRA WORK
See Article 7.3 of the General Conditions.

1.1.24 CRITERIA DOCUMENTS
The term “Criteria Documents” means, but is not limited to, the portions of the Contract Documents which constitute an outline of design requirements, Scope of Work, Project Program, Performance Specifications and Drawings.

1.1.25 DAY
The term “day,” as used in the Contract Documents, shall mean calendar day, unless otherwise specifically provided.

1.1.26 DEFECTIVE WORK
The term “Defective Work” means Work that is unsatisfactory, faulty, omitted, incomplete, deficient, or does not conform to the requirements of the Contract Documents, directives of University's Representative, or the requirements of any inspection, reference standard, test, or approval specified in the Contract Documents.

1.1.27 DESIGN BUILDER
The term “Design Builder” means the person or firm identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.

1.1.28 DESIGN BUILDER FEE
See Article 7.3 of the General Conditions.

1.1.29 DESIGN DEVELOPMENT PHASE
The term “Design Development Phase” shall mean the period of time set forth in the Agreement beginning with the issuance of the Notice to Proceed for Phase 1. This is also referred to within the Contract Documents as “Phase 1” and the two terms may be used interchangeably. The scope of the Design Development Phase is further defined in the “Scope of Work” Exhibit. The term “Phase 1 Time” is defined in Article 5 of the Agreement.

1.1.30 DESIGN MATERIALS
The term “Design Materials” shall mean any and all documents, shop drawings, electronic information, including computer programs and computer generated materials, data, plans, drawings, sketches, illustrations, specifications, descriptions, models and other information developed, prepared, furnished, delivered or required to be delivered by, or for, the Design Builder: (1) to the University under the Contract Documents; or (2) developed or prepared by or for the Design Builder specifically to discharge its duties under the Contract Documents.

1.1.31 DESIGN PROFESSIONAL
The term “Design Professional” shall mean individuals or entities that will provide Design Builder with the required architectural, engineering, and other professional services required for the coordinated design of the Project and the administration of construction.

1.1.32 DESIGN WORK
The term “Design Work” shall mean the portion of the Work consisting of the design services and design deliverables required to be provided in connection with the design of the Project as set forth in the Contract Documents.

1.1.33 DRAWINGS
The term “Drawings” means the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams. The Drawings are listed in the List of Drawings.

1.1.34 EQUIPMENT MANUFACTURER
The term “Equipment Manufacturer” shall mean any Separate Contractor that fabricates and/or supplies any University-provided equipment which is installed in the Project by the Design Builder.

1.1.35 EXCUSABLE DELAY
The term “Excusable Delay” means a delay that entitles the Design Builder to an adjustment of the Contract Time but not an adjustment of the Contract Sum, pursuant to Articles 7 and 8 of the General Conditions.

1.1.36 EXTRA WORK
The term “Extra Work” means Work beyond or in addition to the Work required by the Contract Documents.

1.1.37 FIELD ORDER
See Article 7.2 of the General Conditions.

1.1.38 FINAL COMPLETION
The term “Final Completion” means the date at which the Work has been fully completed in accordance with the requirements of the Contract Documents pursuant to Article 9.8 of the General Conditions.

1.1.39 GUARANTEE TO REPAIR PERIOD
See Article 12.2 of the General Conditions.

1.1.40 GOVERNMENTAL APPROVALS
The term “Governmental Approvals” means those governmental (including agency) actions required to be obtained by the University and necessary for the completion of the Project.

1.1.41 HAZARDOUS MATERIAL
The term “Hazardous Material” means any substance or material identified as hazardous under any California or federal statute governing handling, disposal and/or cleanup of any such substance or material.

1.1.42 INDEMNIFIED PARTIES
The term “Indemnified Parties” means the University, its agents, officers, representatives, consultants, and employees.

1.1.43 MAXIMUM ACCEPTANCE COST

The term “Maximum Acceptance Cost” means the amount identified as such in the Request for Proposals.

1.1.44 OPTIONS
See Article 2 of the Agreement.

1.1.45 PROJECT
The term “Project” means the total design and construction of the Work under the Contract and all other work, labor, equipment, and materials necessary to accomplish the Project . The Project may include design or construction work performed by University or by Separate Contractors.

1.1.46 SEPARATE CONTRACTOR
The term “Separate Contractor” means a person, or firm, under separate contract with the University performing other work related to the Project.

1.1.47 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES
See Article 3.20 of the General Conditions.

1.1.48 SPECIFICATIONS
The term “Specifications” means that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

1.1.49 SUBCONTRACTOR
The term “Subcontractor” means a person or firm that has a contract with Design Builder or with a Subcontractor of the Design Builder to perform a portion of the Work. Unless otherwise specifically provided, the term Subcontractor includes Subcontractors of all tiers.

1.1.50 SUBSTANTIAL COMPLETION
See Article 9.7 of the General Conditions.

1.1.51 SUPERINTENDENT
The term “Superintendent” means the person designated by Design Builder to represent Design Builder at the Project site, in accordance with Article 3 of the General Conditions.

1.1.52 TIER
The term “tier” means the contractual level of a Subcontractor or supplier or consultant with respect to Design Builder. For example, a first-tier Subcontractor is under subcontract with Design Builder, a second-tier Subcontractor is under subcontract with a first-tier Subcontractor, and so forth.

1.1.53 UNEXCUSABLE DELAY
The term “Unexcusable Delay” means a delay that does not entitle the Design Builder to an adjustment of the Contract Sum and does not entitle the Design Builder to an adjustment of the Contract Time.

1.1.54 UNILATERAL CHANGE ORDER
See Article 7.2 of the General Conditions.

1.1.55 UNIVERSITY
The term “University” or “the University” means The Regents of the University of California, Owner of the Project.

1.1.56 UNIVERSITY’S BUILDING OFFICIAL
The term “University’s Building Official” means the individual the University has designated to act in the capacity of the “Building Official” as defined by the California Building Standards Code. The University’s Building Official will determine whether the Work complies with Applicable Code Requirements and will determine whether and when it is appropriate to issue a Certificate of Occupancy.

1.1.57 UNIVERSITY'S REPRESENTATIVE
The term “University's Representative” means the person or firm identified as such in the Agreement.

1.1.58 UNIVERSITY’S RESPONSIBLE ADMINISTRATOR
The term “University’s Responsible Administrator“ means the person, or his or her authorized designee, who is authorized to execute the Agreement, Change Orders, Field Orders, and other applicable Contract Documents on behalf of the University.

1.1.59 WORK
The term "Work" means all labor, materials, equipment, tools, and services, including Design Professional services, and other requirements of the Contract Documents as modified by Change Order, whether completed or partially completed, provided or to be provided by Design Builder to fulfill Design Builder's obligations . The Work may constitute the whole or a part of the Project.

1.2 OWNERSHIP AND USE OF CONTRACT DOCUMENTS

1.2.1. The Contract Documents, and all copies thereof, furnished to, or provided by, Design Builder are the property of the University. The University and Design Builder explicitly agree that all materials and documents developed in the performance of this Contract are the property of the University. The University shall have the right to use all drawings, designs, specifications, notes and any other documentation and other work developed in the performance of this Contract for the Project, or in connection with the Project, including without limitation future additions, alterations, connections, repairs, information, reference, use or occupancy and the right to re-use details of the design on any other University work, all without the Design Builder's consent and at no additional cost to the University.

1.2.2 University will defend, indemnify and save harmless Design Builder Professional, its officers, agents and employees from any costs or claims for damages arising from University's use on other projects of the Contract Documents, the Drawings and Specifications, or the designs depicted in them, if any of the foregoing have been provided to the University by the Design Builder.

1.2.3 Notwithstanding Article 1.2.2 above, University will not defend, indemnify or save harmless Design_Builder Professional, its officers, agents, or employees from any costs or claims asserted or imposed by any person or entity claiming that University's use of the Contract Documents, the Drawings and Specifications, or the designs depicted in them is contrary to or in violation of any copyright, patent, trade secret, trade name, trademark, or any proprietary, contractual or legal right pertaining to their use.

1.3 INTERPRETATION

1.3.1 The intent of the Contract Documents is to include all necessary criteria to establish the scope and quality for completion of the Work by the Design Builder. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Design Builder shall be required to the extent consistent with, and reasonably inferable from, the Contract Documents.

1.3.2 In the case of conflict between terms of the Contract Documents, the following order of precedence shall apply:

.1 The Agreement shall control over the Supplementary Conditions.

.2 The Supplementary Conditions shall control over the General Conditions.

.3 The General Conditions shall control over the Exhibits.

.4 Where no order of precedence is stated, the more expensive of the requirements shown or specified shall be controlling.

1.3.3 The University and Design Builder acknowledge that the Contract Documents may differ in some respect(s) from the other documents included in the Proposal Documents upon which the Design Builder based its response(s) to the Request for Proposals. The University and Design Builder explicitly agree that documents having the higher quality requirements control over any conflicting requirements of other documents.

1.3.4 Organization of the Specifications into various subdivisions and the arrangement of the Drawings shall not control Design Builder in dividing the Work among Subcontractors or in establishing the extent of work to be performed by any trade.

1.3.5 Unless otherwise stated in the Contract Documents, technical words and abbreviations contained in the Contract Documents are used in accordance with commonly understood design professional and construction industry meanings; and non-technical words and abbreviations are used in accordance with their commonly understood meanings.

1.3.6 The Contract Documents may omit modifying words such as "all" and "any," and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. The use of the word "including," when following any general statement,

shall not be construed to limit such statement to specific items or matters set forth immediately following such word or to similar items or matters, whether or not non-limiting language (such as "without limitation," "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement.

1.3.7 Whenever the context so requires, the use of the singular number shall be deemed to include the plural and *vice versa*. Each gender shall be deemed to include any other gender, and each shall include corporation, partnership, trust, or other legal entity, whenever the context so requires. The captions and headings of the various subdivisions of the Contract Documents are intended only for reference and convenience and in no way define, limit, or prescribe the scope or intent of the Contract Documents or any subdivision thereof.

ARTICLE 2

UNIVERSITY

2.1 FEE AND PERMIT REQUIREMENTS

2.1.1 University is not subject to any requirement to obtain or pay for local building permits, inspection fees, plan checking fees, or certain utility fees. Except as otherwise provided in the Contract Documents, University will obtain and pay for any utility permits, demolition permits, easements, and government approvals for the use or occupancy of permanent structures required in connection with the Work.

2.1.2 Design Builder will be furnished, free of charge, such copies of the Contract Documents as University deems reasonably necessary for execution of the Work.

2.2 ACCESS TO PROJECT SITE

2.2.1 University will provide, as reasonably required by the Work, but in no event later than the date designated in the Construction Notice to Proceed, access to the lands and facilities upon which the construction Work is to be performed, including such access to other lands and facilities designated in the Contract Documents for use by Design Builder.

2.3 UNIVERSITY'S RIGHT TO STOP THE WORK

2.3.1 If Design Builder fails to correct Defective Work as required by Article 12.2 of the General Conditions or fails to perform the Work in accordance with the Contract Documents, University or University's Representative may direct Design Builder to stop the Work, or any portion thereof, until the cause for such order has been eliminated by Design Builder. Design Builder shall not be entitled to any adjustment of Contract Time or Contract Sum as a result of any such order. University and University's Representative have no duty or responsibility to Design Builder or any other party to exercise the right to stop the Work.

2.4 UNIVERSITY'S RIGHT TO CARRY OUT THE WORK

2.4.1 If Design Builder fails to carry out the Work in accordance with the Contract Documents, fails to provide sufficient labor, materials, equipment, tools, and services, with respect to either the design or construction phases, to maintain the Contract Schedule, or otherwise fails to comply with any material term of the Contract Documents, and, after receipt of written notice from University, fails within 2 days, excluding Saturdays, Sundays and legal holidays, or within such additional time as the University may specify, to correct such failure, University may, without prejudice to other remedies University may have, correct such failure at Design Builder's expense. In such case, University will be entitled to deduct from payments then or thereafter due Design Builder the cost of correcting such failure, including without limitation compensation for the additional services and expenses of University's consultants made necessary thereby. If payments then or thereafter due Design Builder are not sufficient to cover such amounts, Design Builder shall pay the additional amount to University.

2.5 UNIVERSITY'S RIGHT TO REPLACE UNIVERSITY'S REPRESENTATIVE

2.5.1 University may at any time and from time to time, without prior notice to or approval of Design Builder, replace University's Representative with a new University's Representative. Upon receipt of notice from University informing Design Builder of such replacement and identifying the new University's Representative, Design Builder shall recognize such person or firm as University's Representative for all purposes under the Contract Documents.

ARTICLE 3

DESIGN BUILDER

3.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY DESIGN BUILDER; SINGLE POINT RESPONSIBILITY OF DESIGN BUILDER

3.1.1 In addition to the examination and reviews performed, and obligations assumed, incidental to making the representations set forth in Article 10 of the Agreement, Design Builder shall carefully study and compare each of the Contract Documents with the others and with information furnished by University, and shall promptly report in writing to University's Representative any errors, inconsistencies, or omissions in the Contract Documents or inconsistencies with Applicable Code Requirements observed by Design Builder.

3.1.2 Design Builder is responsible for the design and construction of the Project and shall provide all services pursuant to this Contract in a manner consistent with the standard of care under California law applicable to those who specialize in providing such services for projects of the type, scope, and complexity of the Project (including its contracting mode). The Design Builder shall be solely responsible for any and all design errors including, but without limitation, errors, inconsistencies or omissions in the Construction Documents. Design Builder shall take field measurements, verify field conditions, and carefully compare with the Contract Documents such field measurements, conditions, and other information known to Design Builder before commencing the Work. Errors, inconsistencies, or omissions discovered at any time shall be promptly reported in writing to University's Representative.

3.1.3 If Design Builder performs any design and/or construction activity which it knows, or should know, involves an error, inconsistency, or omission referred to in Articles 3.1.1 and 3.1.2 above, without notifying and obtaining the written consent of University's Representative, Design Builder shall be responsible for the resultant losses, including, without limitation, the costs of correcting Defective Work.

3.1.4 The University does not assume any obligation to employ the Design Builder's services or pay Design Builder royalties of any type as to future programs that may result from the Work performed under this Contract.

3.1.5 Design Builder shall be responsible for all plotting, printing, copying and distribution cost of any and all documents required in connection with the Work.

3.1.6 Design Builder agrees that it has single point responsibility for the design and construction of this Project.

3.2 DESIGN, SUPERVISION AND CONSTRUCTION PROCEDURES

3.2.1 Design Builder shall supervise, coordinate, and direct the Work using Design Builder's best skill and attention. Design Builder shall be solely responsible for, and have control over, the entire design effort, construction means, methods, techniques, sequences, procedures, and the coordination of all portions of the Work, including, but without limitation, landscape and site work, utilities, and building systems.

3.2.2 Design Builder shall be responsible to University for acts and omissions of Design Builder's agents, employees, and Subcontractors, and their respective agents and employees.

3.2.3 Design Builder shall not be relieved of its obligation to perform the Work in accordance with the Contract Documents either by acts or omissions of University or University's Representative in the administration of the Contract, or by tests, inspections, or approvals required, or performed, by persons or firms other than Design Builder.

3.2.4 Design Builder shall be responsible for inspection of all portions of the Work, including those portions already performed under this Contract, to determine that such portions conform to the requirements of the Contract Documents and are ready to receive subsequent Work.

3.2.5 To facilitate communications and the management of the design process, the Design Builder shall establish and maintain a local office for the duration of the design process.

3.2.6 The Design Builder is not required to produce the entire Construction Documents package in the local office; however, the Design Builder shall provide the appropriate management and design staff in the local office to provide the University with the current status of, and the capability to properly update, the design documents.

3.2.7 The Design Builder is required to deliver to the University, if requested, any and all design materials including, but not limited to, calculations, preliminary drawings, construction drawings, shop drawings, electronic

media data, tenant improvement documents, sketches, illustrations, specifications, descriptions, models, mock-ups, and other information developed, prepared, furnished, or delivered in the prosecution of the design work.

3.2.8 Design Builder shall at all times participate in, and implement, the CEQA mitigation process and ensure performance as required in the Contract Documents.

3.2.9 Design Builder is responsible for preparation of the Construction Documents for the entire Project.

3.2.10 Design Builder is responsible for construction of the entire Project as required by the Contract Documents.

3.2.11 Design Builder shall at all times maintain good discipline and order among its employees and subcontractors. Design Builder shall provide competent, fully qualified personnel to perform the Work.

3.3 LABOR AND MATERIALS

3.3.1 Unless otherwise provided in the Contract Documents, Design Builder shall provide and pay for all professional services, other services, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other things necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4 DESIGN BUILDER'S WARRANTY

3.4.1 Design Builder warrants to University that all labor, materials, equipment and furnishings used in, or incorporated into, the Construction Work will be of good quality, new (unless otherwise required or permitted by the Contract Documents), and all Work will be free of liens, claims and security interests of third parties; that the Work will be of the highest quality and free from defects and that all Work will conform with the requirements of the Contract Documents. If required by University's Representative, Design Builder shall furnish satisfactory evidence of compliance with this warranty. Further, the type, quality and quantum of such evidence shall be within the sole discretion of the University's Representative. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

3.5 TAXES

3.5.1 Design Builder shall pay all sales, consumer, use, income, payroll and similar taxes for the Work or portions thereof provided by Design Builder.

3.6 PERMITS, FEES, AND NOTICES

3.6.1 Except for the permits and approvals which are to be obtained by University or the requirements with respect to which University is not subject as provided in Article 2.1.1 of the General Conditions, Design Builder shall secure, and pay for, all permits, approvals, government fees, licenses, and inspections necessary for the proper execution and performance of the Work. Design Builder shall deliver to University all original licenses, permits, and approvals obtained by Design Builder in connection with the Work prior to the final payment or upon termination of the Contract, whichever is earlier.

3.7 APPLICABLE CODE REQUIREMENTS

3.7.1 Design Builder shall perform the Work in accordance with the following Applicable Code Requirements and all code requirements listed in the Scope of Work:

.1 All laws, statutes, the most recent building codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over University, Design Builder, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work.

.2 Applicable sections in the State of California Labor Code.

.3 All Applicable Code Requirements relating to nondiscrimination, payment of prevailing wages, payroll records, apprentices, and work day.

3.7.2 Design Builder shall comply with and give notices required by all Applicable Code Requirements, including all environmental laws and all notice requirements under the State of California Safe Drinking Water and Enforcement Act of 1986 (State of California Health and Safety Code Section 25249.5, and applicable sections that follow).

Design Builder shall promptly notify University's Representative in writing if Design Builder becomes aware during the performance of the Work that the Contract Documents are at variance with Applicable Code Requirements.

3.7.3 If Design Builder performs Work which it knows or should know is contrary to Applicable Code Requirements, without prior notice to University and University's Representative, Design Builder shall be responsible for such Work and any resulting damages including, without limitation, the costs of correcting Defective Work.

3.8 SUPERINTENDENT

3.8.1 Design Builder shall employ a competent Superintendent satisfactory to University who shall be in attendance at the Project site at all times during the performance of the Construction Work. Superintendent shall represent Design Builder and communications given to, and received from, Superintendent shall be binding on Design Builder. Failure to maintain a Superintendent on the Project site at all times Work is in progress shall be considered a material breach of this Contract, entitling University to terminate the Contract or, alternatively, issue a stop Work order until the Superintendent is on the Project site. If, by virtue of issuance of said stop Work order, Design Builder fails to complete the Contract on time, Design Builder will be assessed Liquidated Damages in accordance with the Agreement.

3.8.2 The Superintendent approved for the Project must be able to read, write and verbally communicate in English. The Superintendent may not perform the Work of any trade, pick-up materials, or perform any Work not directly related to the supervision and coordination of the Construction Work at the Project site when Work is in progress. In addition, the Design Builder will provide all Key Personnel shown in the Exhibits for the time periods stipulated.

3.9 TOXIC MATERIALS

3.9.1 The Design Builder is responsible for unforeseen site conditions and toxic materials to the extent described in the Contract Documents and/or that could be reasonably inferred by the Design Builder based on its experience and expertise on similar projects in urban areas.

3.10 HAZARDOUS MATERIALS

3.10.1 The Design Builder agrees that it is solely responsible for investigating and performing remedial actions on all hazardous materials and other related environmental requirements located on the Project site. For the purposes of this Contract, Hazardous Materials shall also include, but are not limited to, Underground storage tanks. Any Hazardous Materials that are encountered beyond those described in the Contract Documents or Proposal Documents, or which reasonably could not have been discovered within the time permitted, may properly be the subject of a Change Order Request. The University agrees that the Design Builder cannot be considered a hazardous materials generator of any such materials in existence on the Site at the time it is given possession of the Site. "Underground Storage Tank" shall have the definition assigned to that term by Section 9001 of RCRA, 42 U.S.C. Section 6991, and also shall include: any tank of one thousand one hundred (1, 100) gallons or less capacity used for storing motor fuel; any tank used for storing heating oil for consumption on the premises where stored; any septic tank; and any pipes connected to the above items.

3.10.2 The University shall not be responsible for any Hazardous Material brought to the site by the Design Builder.

3.10.3 If the Design Builder: (i) introduces and/or discharges a Hazardous Material onto the site in a manner not specified by the Contract Documents; and/or (ii) disturbs a Hazardous Material identified in the Contract Documents, the Design Builder shall hire a qualified remediation contractor at Design Builder's sole cost to eliminate the condition as soon as possible. Under no circumstance shall the Design Builder perform Work for which it is not qualified. University, in its sole discretion, may require the Design Builder to retain at Design Builder's cost an independent testing laboratory.

3.10.4 If the Design Builder encounters a Hazardous Material which may cause foreseeable injury or damage, Design Builder shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such material or substance (except in an emergency situation); and (iii) notify University (and promptly thereafter confirm such notice in writing).

3.10.5 Subject to Design Builder's compliance with Article 3.10.4, the University shall verify the presence or absence of the Hazardous Material reported by the Design Builder, except as qualified under Section 3.10.2 and 3.10.4, and, in the event such material or substance is found to be present, verify that the levels of the hazardous material are below OSHA Permissible Exposure Levels and below levels which would classify the material as a state of California or federal hazardous waste. When the material falls below such levels, Work in the affected area shall

resume upon direction by the University. The Contract Time and Sum shall be extended appropriately as provided in Articles 7 and 8.

3.10.6 The University shall indemnify and hold harmless the Design Builder from and against claims, damages, losses and expenses, arising from a Hazardous Material on the Project site, if such Hazardous Material: (i) was not shown on the Contract Documents or Information Available to Bidders; (ii) was not brought to the site by Design Builder; and (iii) exceeded OSHA Permissible Exposure Levels or levels which would classify the material as a state of California or federal hazardous waste. The indemnity obligation in this Article shall not apply to:

.1 Claims, damages, losses or expenses arising from the breach of contract, negligence or willful misconduct of Design Builder, its suppliers, its Subcontractors of all tiers and/or any persons or entities working under Design Builder; and

.2 Claims, damages, losses or expenses arising from a Hazardous Material subject to Article 3.10.3.

3.10.7 In addition to the requirements in Article 3.28, Design Builder shall indemnify and hold harmless the University from and against claims, damages, losses and expenses, arising from a Hazardous Material on the Project site, if such Hazardous Material exceeded OSHA Permissible Exposure Levels or levels which would classify the material as a state of California or federal hazardous waste, and was either i) shown on the Contract Documents or Information Available to Bidders; or (ii) brought to the site by Design Builder. Nothing in this paragraph shall obligate the Design Builder to indemnify University in the event of the sole negligence of the University, its officers, agents, or employees.

3.11 CONSTRUCTION DOCUMENTS

3.11.1 Construction Documents

.1 Upon receipt of the Notice to Proceed for Phase 2, the Design Builder shall instruct the Architect of Record to commence the design of the building systems and the preparation of the Construction Documents. The Construction Documents shall provide information customarily necessary in documents for projects of similar size, complexity, and quality. The Construction Documents shall include all information required by the building trades to complete the construction of the Project, other than such details customarily developed by others during construction. The University's review of the construction documents shall be conducted in accordance with the approved Contract Schedule with procedures set forth in Article 3.16 of the General Conditions relating to Schedule**.** Such review shall not relieve the Design Builder from its responsibilities under this Contract. Such review shall not be deemed an approval or waiver by the University of any deviation from, or of the Design Builder's failure to comply with, any provision or requirement of the Contract Documents, unless such deviation or failure has been identified as such in writing in the document submitted by the Design Builder and approved by the University.

.2 However, it is acknowledged by the parties hereto that inherent in a design build concept, bridging or otherwise, the production and review of Construction Documents may be a continuing process with portions thereof completed at different times. The Design Builder will limit the Construction Document packages for construction to a reasonable number, not more than that stipulated in the Supplementary Conditions, unless approved in writing by the University. Contract Schedule shall indicate the times for the University to review the completion of each such portion of the Construction Documents and a reasonable time for review of same.

.3 The Design Builder shall submit completed packages of the Construction Documents for review by the University of California, the California State Fire Marshal, and the California State Architect at the times indicated on the Contract Schedule and as defined in the Scheduling Specification. Review meetings between the Design Builder and the University of California to review the Construction Document packages, shall be scheduled and held so as not to delay the Work. After reviewing the Construction Documents package for conformance to the Criteria Documents, the University will issue a Construction Notice to Proceed to the Design Builder.

.4 The Construction Documents for hazardous and/or toxic abatement efforts and demolition activity shall be of sufficient clarity and shall be fully detailed when submitted to the University for review.

3.11.2 Shop Drawings, Product Data, Samples, Materials, and Equipment

.1 Shop drawings means drawings, submitted to Design Builder by subcontractors, manufacturers, supplier or distributors, showing in detail the proposed fabrication and assembly of building elements and the installation (*e.g.*, form, fit, and attachment details) of materials or equipment.

.2 Design Builder shall coordinate all submittals and review them for accuracy, completeness, and compliance with the requirements of the Contract Documents and the Design Builder's Construction Documents and shall indicate its approval thereon as evidence of such coordination and review.

.3 Materials and equipment incorporated in the Work shall match the approved samples within tolerances appropriate to the items, and as may be described in the Contract Documents.

.4 The Design Builder shall submit shop drawings approved by the Architect of Record and samples of submittals that relate to finish materials and products.

.5 Any variation in quality must be approved by the University.

3.11.3 Field Engineering

.1 The Design Builder shall retain and pay expenses of a civil engineer or land surveyor to establish on the Site the required reference points and benchmarks, establish building lines and elevations, check for building framing, plumbness, and establish on building frame the required basic grid lines. The engineer or land surveyor shall be licensed in the State of California.

.2 The Design Builder shall locate and protect control points prior to starting Work on the Project site and preserve permanent reference points during construction, and shall require the engineer or surveyor to replace control points which become lost or destroyed.

3.11.4 Geotechnical and Survey

.1 The University has provided the Design Builder with a geotechnical report which includes supporting data, findings and recommendations; and also with a legal description and a project survey that are included in the Contract Documents. The Design Work shall be consistent with both the findings and recommendations of the geotechnical report and legal description and project survey.

.2 The Design Builder shall verify the location and depth (elevation) of all existing utilities and services before performing any excavation Work.

3.12 MONTHLY REPORTS

3.12.1 The Design Builder shall prepare and submit to the University, during both the Construction Documents Phase and the Construction Phase, monthly reports on the Work accomplished during the prior monthly period. Such reports shall be prepared in a manner and in a format approved by the University. Reports shall be furnished at the time of submission of each monthly application for payment. The monthly report shall also set forth the Design Builder's projected progress for the forthcoming month.

3.13 OTHER REPORTS

3.13.1 The Design Builder will cooperate with the University in preparing, or causing to be prepared, all or part of, periodic project reports required by the State Public Works Board and other state or federal agencies.

3.14 NOTICES OF LABOR DISPUTE

3.14.1 If Design Builder has knowledge that any actual or potential labor dispute is delaying, or threatens to delay, the timely performance of the Work, Design Builder shall immediately give notice including all relevant information to the University.

3.14.2 Design Builder agrees to insert the substance of this Article including this Article 3.14.2, in any subcontract to which a labor dispute may delay the timely performance of the Work, except that each subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the subcontractor shall immediately notify the next higher tier subcontractor or Design Builder, as the case may be, of all relevant information concerning the dispute.

3.15 GUARANTEE

3.15.1 The Design Builder unconditionally guarantees the Work will be completed in accordance with the requirements of the Contract Documents, and will remain free of defects in workmanship and materials for a period of two (2) years from the date of Final Completion, unless a longer guarantee period is specifically called for in the Contract Documents. The Design Builder shall repair or replace any and all work, together with any adjacent work that may have been damaged or displaced, which was not in accordance with the requirements of the Contract Documents, or that may be defective in its workmanship or material within the guarantee period specified in the Contract Documents, without any expense whatsoever to the University; ordinary wear and tear and abuse excepted.

3.15.2 The Design Builder further agrees, within fourteen (14) days, or as such shorter period as may be designated for emergency repairs, after being notified in writing by the University, of any work not in accordance with the requirements of the Contract Documents or any defects in the Work, that the Design Builder shall commence and execute, with due diligence, all work necessary to fulfill the terms of the guarantee. If the University finds that the Design Builder fails to perform any of the work under the guarantee, the University may elect to have the work completed at the Design Builder's expense and the Design Builder will pay costs of the work upon demand. The University will be entitled to all costs, including reasonable attorneys' fees and consultants' expenses necessarily incurred upon the Design Builder's refusal to pay the above costs.

3.15.3 Notwithstanding the foregoing Article 3.15.2, in the event of an emergency constituting an immediate hazard to health or safety of University employees, property, or licensees, the University may undertake, at the Design Builder's expense and without prior notice, all work necessary to correct such hazardous condition(s) when it is caused by work of the Design Builder not being in accordance with the requirements of the Contract Documents.

3.16 SCHEDULES REQUIRED OF DESIGN BUILDER

3.16.1 The Preliminary Schedule provided with the Request for Proposal provides the Design Builder schedule information to illustrate all Contract Milestones and any anticipated overlap of Phases. The Design Builder shall develop its required Contract schedules for review and approval by University based on and consistent with such Preliminary Schedule.

3.16.2 Design Builder shall submit an initial Contract Schedule and updated Contract Schedules to University's Representative in the form and within the time limits required by the Contract Documents, or, if no such time period is specified, within a reasonable period of time. University's Representative will determine acceptability of the Contract Schedule and updated Contract Schedules within the time limits required by the Contract Documents, or if no such time period is specified, within a reasonable period of time. If University's Representative deems the Contract Schedule or updated Contract Schedule unacceptable, it shall specify in writing to Design Builder the basis for its objection.

3.16.3 The Contract Schedule and updated Contract Schedules shall represent a practical plan to complete the Work within the Contract Time. . Schedules showing the Work completed in less than the Contract Time as reflected in the Preliminary Schedule may be acceptable if judged by University's Representative to be practical. Schedules showing the Work completed beyond the Contract Time may be submitted under the following circumstances:

.1 If accompanied by a Change Order Request seeking an adjustment of the Contract Time consistent the requirements of paragraph 8.4 for Adjustment of the Contract Time for Delay.; or

.2 If the Contract Time has passed, or if it is a practical impossibility to complete the Work within the Contract Time, then the updated Contract Schedule or fragnet schedule shall show completion at the earliest practical date.

University's Representative will timely review the updated Contract Schedule or Fragnet Schedule submitted by Design Builder. If University's Representative determines that additional supporting data are necessary to fully evaluate the updated Contract Schedule or Fragnet Schedule, University's Representative will request such additional supporting data in writing. Such data shall be furnished no later than 10 days after the date of such request. University's Representative will render a decision promptly and in any case within 30 days after the later of the receipt of the updated Contract Schedule or Fragnet Schedule or the deadline for furnishing such additional supporting data. Failure of University's Representative to render a decision by the applicable deadline will be deemed a decision denying approval of the updated Contract Schedule or Fragnet Schedule. Acceptance of any schedule showing completion beyond the Contract Time by University's Representative shall not change the Contract Time and is without prejudice to any right of the University. The Contract Time, not the Contract Schedule, shall control in the determination of liquidated damages payable by Design Builder under Article 4 and Article 5 of the Agreement and in the determination of any delay under Article 8 of the General Conditions.

3.16.4 If a Contract Schedule showing the Work completed in less than the Contract Time is accepted, Design Builder shall not be entitled to extensions of the Contract Time for Excusable Delays or Compensable Delays or to adjustments of the Contract Sum for Compensable Delays until such delays extend the Final Completion of the Work beyond the expiration of the Contract Time.

3.16.5 Design Builder shall prepare and keep current, to the reasonable satisfaction of University's Representative, a schedule of submittals that is in the form contained in the Exhibits, as required by the Specifications, and that is coordinated with the Contract Schedule.

3.16.6 The Contract Schedule and the updated Contract Schedules shall meet the following requirements:

.1 Schedules must be suitable for monitoring progress of the Work.

.2 Schedules must provide necessary data about the timing of University decisions and University furnished items.

.3 Schedules must be in sufficient detail to demonstrate adequate planning of the Work.

.4 Schedules must represent a practical plan to perform and complete the Work within the Contract Time.

3.16.7 University's Representative's review of the form and general content of the Contract Schedule and updated Contract Schedules is for the purpose of determining if the above-listed requirements have been satisfied.

3.16.8 Design Builder shall plan, develop, supervise, control, and coordinate the performance of the Work so that its progress and the sequence and timing of Work will permit its completion withi the Contract Time, any Contract milestones and any Contract phases.

3.16.9 In preparing the Preliminary Contract Schedule, the Contract Schedule, and updated Contract Schedules, Design Builder shall obtain such information and data from Subcontractors as may be required to develop a reasonable and appropriate schedule for performance of the work and shall provide such information and data to the University's Representative upon request. Design Builder shall continuously obtain from Subcontractors information and data about the planning for, and progress of, the Work and the delivery of equipment, shall coordinate and integrate such information and data into updated Contract Schedules, as appropriate, and shall monitor the progress of the Work and the delivery of equipment.

3.16.10 Design Builder shall act as the expediter of potential and actual delays, interruptions, hindrances, or disruptions for its own forces and those forces of Subcontractors, regardless of tier.

3.16.11 Design Builder shall cooperate with University's Representative in the development of the Contract Schedule and updated Contract Schedules. Design Builder shall plan and schedule all of its Work based on the assumption that the University will exercise its Option for Phase 3 within 30 days of the completion of Phase 2 unless otherwise directed in writing by the University. After the University exercises its Option for Phase 3, the Design Builder shall modify its Contract Schedule to reflect the actual date that the University exercises its Option for Phase 3.

3.16.12 University's Representative's acceptance of or its review comments about any schedule or scheduling data shall not relieve Design Builder from its sole responsibility to plan for, perform, and complete the Work within the Contract Time. Acceptance of or review comments about any schedule shall not transfer responsibility for any schedule to University's Representative or University nor imply their agreement with (1) any assumption upon which such schedule is based or (2) any matter underlying or contained in such schedule. Failure of University's Representative to discover errors or omissions in schedules that it has reviewed, or to inform Design Builder that Design Builder, Subcontractors, or others are behind schedule, or to direct or enforce procedures for complying with the Contract Schedule shall not relieve Design Builder from its sole responsibility to perform and complete the Work within the Contract Time and shall not be a cause for an adjustment of the Contract Time or the Contract Sum.

3.17 AS-BUILT DOCUMENTS

3.17.1 Design Builder shall maintain one (1) set of As-built drawings and specifications, which shall be kept up-to-date during the Work of the Contract. All changes which are incorporated into the Work which differ from the documents as drawn and written and approved shall be noted on the As-built set. Notations shall reflect the actual materials, equipment and installation methods used for the Work; each revision shall be initialed and dated by Superintendent. Prior to filing of the Notice of Completion, each drawing and the specification cover shall be signed by Design Builder and dated, attesting to the completeness of the information noted therein. As-built Documents shall be turned over to the University's Representative and shall become part of the Record Documents as required by the Scope of Work.

3.18 DOCUMENTS AND SAMPLES AT PROJECT SITE

3.18.1 Design Builder shall maintain the following at the Project site:

.1 One as-built copy of the Contract Documents, in good order and marked to record current changes and selections made during construction.

.2 The current accepted Contract Schedule.

.3 Shop Drawings, Product Data, and Samples.

.4 All other required submittals.

These documents shall be available to University's Representative and shall be delivered to University's Representative for submittal to University upon the earlier of Final Completion or termination of the Contract.

3.19 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.19.1 Definitions:

.1 *Shop Drawings* are drawings, diagrams, schedules, and other data specially prepared for the Work by Design Builder or a Subcontractor to illustrate some portion of the Work.

.2 *Product Data* are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by Design Builder to illustrate or describe materials or equipment for some portion of the Work.

.3 *Samples* are physical examples that illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

3.19.2 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate, for those portions of the Work for which submittals are required, how Design Builder proposes to conform to the information given and the design concept expressed in the Contract Documents.

3.19.3 Design Builder shall review, approve, and submit to University's Representative Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of University or of Separate Contractors. Submittals made by Design Builder that are not required by the Contract Documents may be returned without action by University's Representative.

3.19.4 Design Builder shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been reviewed by University's Representative and no exceptions have been taken by University's Representative. Such Work shall be in accordance with approved submittals and the Contract Documents.

3.19.5 By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, Design Builder represents that it has determined or verified materials and field measurements and conditions related thereto, and that it has checked and coordinated the information contained within such submittals with the requirements of the Contract Documents and Shop Drawings for related Work.

3.19.6 If Design Builder discovers any conflicts, omissions, or errors in Shop Drawings or other submittals, Design Builder shall notify University's Representative and receive instruction before proceeding with the affected Work. Design Builder shall be responsible to correct to the satisfaction of University, any conflicts, omissions, or errors in Shop Drawings or other submittals.

3.19.7 Design Builder shall not be relieved of responsibility for deviations from requirements of the Contract Documents by University's Representative's review of Shop Drawings, Product Data, Samples, or similar submittals, unless Design Builder has specifically informed University's Representative in writing of such deviation at the time of submittal and University's Representative has given written approval of the specific deviation. Design Builder shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by University's Representative's review, acceptance, comment, or approval thereof.

3.19.8 Design Builder shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by University's Representative on previous submittals.

3.19.9 University will review first resubmittal of Shop Drawing at its cost. University reserves the right to reduce the Contract Sum by Change Order for its cost for any subsequent reviews of Shop Drawing resubmittals.

3.20 USE OF SITE AND CLEAN UP

3.20.1 Design Builder shall confine operations at the Project site to areas permitted by law, ordinances, permits, and the Contract Documents. Design Builder shall not unreasonably encumber the Project site with materials or equipment.

3.20.2 Design Builder shall, during performance of the Work, keep the Project site and surrounding area free from the accumulation of excess dirt, waste materials, and rubbish caused by Design Builder. Design Builder shall remove all excess dirt, waste material, and rubbish caused by the Design Builder; tools; equipment; machinery; and surplus materials from the Project site and surrounding area at the completion of the Work.

3.20.3 Personnel of Design Builder and Subcontractors shall not occupy, live upon, or otherwise make use of the Project site during any time that Work is not being performed at the Project site, except as otherwise provided in the Contract Documents.

3.21 CUTTING, FITTING, AND PATCHING

3.21.1 Design Builder shall do all cutting, fitting, or patching of the Work required to make all parts of the Work come together properly and to allow the Work to receive or be received by work of Separate Contractors shown upon, or reasonably implied by, the Contract Documents.

3.21.2 Design Builder shall not endanger the Work, the Project, or adjacent property by cutting, digging, or otherwise. Design Builder shall not cut or alter the work of any Separate Contractor without the prior consent of University's Representative.

3.22 ACCESS TO WORK BY UNIVERSITY

3.22.1 University, University's Representative, their consultants, and other persons authorized by University will at all times have access to the Work wherever it is in preparation or progress. Design Builder shall provide safe and proper facilities for such access and for inspection.

3.23 ROYALTIES AND PATENTS

3.23.1 Design Builder shall pay all royalties and license fees required for the performance of the Work. Design Builder shall defend suits or claims resulting from Design Builder's or any Subcontractor's infringement of patent rights and shall indemnify, defend and hold harmless University and University's Representative from losses on account thereof.

3.24 DIFFERING SITE CONDITIONS

3.24.1 If Design Builder encounters any of the following conditions at the site, Design Builder shall immediately notify the University's Representative in writing of the specific differing conditions before they are disturbed and before any affected Work is performed, and permit investigation of the conditions:

.1 Subsurface or latent physical conditions at the site which differ materially from those indicated in this Contract, or if not indicated in this Contract, in the Information Available to Bidders; or

.2 Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

3.24.2 Design Builder shall be entitled to an adjustment to the Contract Sum and/or Contract Time as the result of extra costs and/or delays resulting from a materially differing site condition, if and only if Design Builder fulfills the following conditions:

.1 Design Builder fully complies with Article 3.24.1 above; and

.2 Design Builder fully complies with Article 4 of the General Conditions (including the timely filing of a Change Order Request and all other requirements for Change Orders Requests and Claims).

3.24.3 Adjustments to the Contract Sum and/or Contract Time shall be subject to the procedures and limitations set forth in Articles 7 and 8 of the General Conditions.

3.25 CONCEALED, UNFORESEEN, OR UNKNOWN CONDITIONS OR EVENTS

3.25.1 Except and only to the extent provided otherwise in Articles 3.24, and Articles 7 and 8 of the General Conditions, by signing the Agreement, Design Builder agrees:

.1 To bear the risk of concealed, unforeseen or unknown conditions and events, if any, which may be encountered in performing the Contract; and

.2 That Design Builder's Price Proposal Form for the Contract was made with full knowledge of this risk.

In agreeing to bear the risk of concealed, unforeseen or unknown conditions and events, Design Builder understands that, except and only to the extent provided otherwise in Articles 3.24, 7 and 8 of the General Conditions, concealed, unforeseen or unknown conditions shall not excuse Design Builder from its obligation to achieve full completion of the Work within the Contract Time, and shall not entitle the Design Builder to an adjustment of the Contract Sum.

3.25.2 If, as the result of concealed, unforeseen or unknown conditions or events, the University issues a Change Order or Field Order that changes design details from those details depicted in the Criteria Documents, Design Builder shall be entitled, subject to compliance with all the provisions of the Contract, including those set forth in Articles 4, 7 and 8 of the General Conditions, to an adjustment of the Contract Sum and/or Contract Time, for the cost and delay resulting from implementing the changes to the design. Except as provided in this Article 3.25.2, or as may be expressly provided otherwise in the Contract, there shall be no adjustment of the Contract Sum and/or Contract Time as a result of concealed, unforeseen or unknown conditions or events.

3.25.3 Design Builder shall, as a condition precedent to any adjustment in Contract Sum or Contract Time under this Article 3.25.3, fully comply with Article 4 of the General Conditions (including the timely filing of a Change Order Request and all other requirements for Change Orders Requests and Claims).

3.26 INFORMATION AVAILABLE TO BIDDERS

3.26.1 Any information provided pursuant to REQUEST FOR PROPOSALS is subject to the following provisions:

.1 The information is made available for the convenience of Proposers and is not a part of the Contract.

.2 The Design Builder may rely on written descriptions of physical conditions included in the information to the extent such reliance is reasonable.

.3 Other components of the information, including but not limited to recommendations, may not be relied upon by Design Builder. University shall not be responsible for any interpretation of or conclusion drawn from the other components of the information by the Design Builder.

3.27 LIABILITY FOR AND REPAIR OF DAMAGED WORK

3.27.1 Design Builder shall be liable for any and all damages and losses to the Project (whether by fire, theft, vandalism, earthquake or otherwise) prior to University's acceptance of the Project as fully completed except that

Design Builder shall not be liable for earthquake in excess of magnitude 3.5 on the Richter Scale, tidal wave, or flood, provided that the damages or losses were not caused in whole or in part by the negligent acts or omissions of Design Builder, its officers, agents or employees (including all Subcontractors and suppliers of all tiers). As used herein, "flood" shall have the same meaning as in the builder's risk property insurance.

3.27.2 Design Builder shall promptly repair and replace any Work or materials damaged or destroyed for which the Design Builder is liable under Article 3.27.1 above.

3.28 INDEMNIFICATION

3.28.1 Design Builder shall indemnify, defend and hold harmless University, University's consultants, University's Representative, University's Representative's consultants, and their respective directors, officers, agents, and employees from and against losses (including without limitation the cost of repairing defective work and remedying the consequences of defective work) arising out of, resulting from, or relating to the following:

.1 The failure of Design Builder to perform its obligations under the Contract.

.2 The inaccuracy of any representation or warranty by Design Builder given in accordance with or contained in the Contract Documents.

.3 Any claim of damage or loss by any Subcontractor against University arising out of any alleged act or omission of Design Builder or any other Subcontractor, or anyone directly or indirectly employed by Design Builder or any Subcontractor.

.4 Any claim of damage or loss resulting from Hazardous Materials introduced, discharged, or disturbed by Design Builder as required per Article 3.10.7.

3.28.2 The University shall not be liable or responsible for any accidents, loss, injury (including death) or damages happening or accruing during the term of the performance of the Work herein referred to or in connection therewith, to persons and/or property, and Design Builder shall fully indemnify, defend and hold harmless University and protect the University from and against the same as provided in paragraph 3.28.1 above. In addition to the liability imposed by law upon the Design Builder for damage or injury (including death) to persons or property by reason of the negligence of the Design Builder, its officers, agents, employees or Subcontractors, which liability is not impaired or otherwise affected hereby, the Design Builder shall defend, indemnify, hold harmless, release and forever discharge the University, its officers, employees, and agents from and against and waive any and all responsibility of same for every expense, liability, or payment by reason of any damage or injury (including death) to persons or property suffered or claimed to have been suffered through any negligent act, omission, or willful misconduct of the Design Builder, its officers, agents, employees, or any of its Subcontractors, or anyone directly or indirectly employed by either of them or from the condition of the premises or any part of the premises while in control of the Design Builder, its officers, agents, employees, or any of its Subcontractors or anyone directly or indirectly employed by either of them, arising out of the performance of the Work called for by this Contract. Design Builder agrees that this indemnity and hold harmless shall apply even in the event of negligence of University, its officers, agents, or employees, regardless of whether such negligence is contributory to any claim, demand, loss, damage, injury, expense, and/or liability; but such indemnity and hold harmless shall not apply (i) in the event of the sole negligence of University, its officers, agents, or employees; or (ii) to the extent that the University shall indemnify and hold harmless the Design Builder for Hazardous Materials pursuant to Article 3.10.6.

3.28.3 In claims against any person or entity indemnified under this Article 3.28 that are made by an employee of Design Builder or any Subcontractor, a person indirectly employed by Design Builder or any Subcontractor, or anyone for whose acts Design Builder or any Subcontractor may be liable, the indemnification obligation under this Article 3.28 shall not be limited by any limitation on amount or type of damages, compensation, or benefits payable by or for Design Builder or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

3.28.4 The indemnification obligations under this Article 3.28 shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

3.28.5 Design Builder shall indemnify University from and against losses resulting from any claim of damage made by any Separate Contractor against University arising out of any alleged acts or omissions of Design Builder, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts either of them may be liable.

3.28.6 Design Builder shall indemnify Separate Contractors from and against losses arising out of the negligent acts, omissions, or willful misconduct of Design Builder, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts either of them may be liable.

3.28.7 Design Builder shall indemnify, defend, and hold harmless University and its Regents, officers, employees, agents, and representatives (collectively, "Indemnitee"), against all liability, demands, claims, costs, damages, injury including death, settlements, and expenses (including without limitation, interest and penalties) incurred by Indemnitee arising out of the performance of services or Design Builder's other obligations under this Contract, but only in proportion to and to the extent such losses are caused by or result from (1) the negligent acts or omissions of Design Builder, its officers, agents, employees, subcontractors, consultants, or any person or entity for whom Design Builder is responsible (collectively, "Indemnitor"); (2) the breach by Indemnitor of any of the provisions of this Contract; or (3) willful misconduct by Indemnitor.

3.28.8 The indemnification obligations under this Article 3.28 shall not be limited by any assertion or finding that (1) the person or entity indemnified is liable by reason of non-delegable duty, or (2) the losses were caused in part by the negligence of, breach of contract by, or violation of law by Indemnitee. The obligation to defend shall arise regardless of any claim or assertion that Indemnitee caused or contributed to the losses. Indemnitor's reasonable defense costs (including attorney and expert fees) incurred in providing a defense for Indemnitees shall be reimbursed by University except to the extent such defense costs arise, under principles of comparative fault, from Indemnitor's (a) negligent acts or omissions; (b) breach of any of the provisions of this Contract; or (c) willful misconduct.

3.28.9 Design Builder shall indemnify, defend, and save harmless Indemnitee from and against all loss, cost, expense, royalties, claims for damages or liability, in law or in equity, including, without limitation, attorney's fees, court costs, and other litigation expenses that may at any time arise or be set up for any infringement (or alleged infringement) of any patent, copyright, trade secret, trade name, trademark or any other proprietary right of any person or entity in consequence of the use on the Project by Indemnitee of the Design Materials or Construction Documents (including any method, process, product, concept specified or depicted) supplied by Indemnitor in the performance of this Contract.

3.28.10 Nothing in this Contract, including the provisions of this Article 3, shall constitute a waiver or limitation of any rights which Indemnitee may have under applicable law, including without limitation, the right to implied indemnity.

ARTICLE 4

ADMINISTRATION OF THE CONTRACT

4.1 ADMINISTRATION OF THE CONTRACT BY UNIVERSITY'S REPRESENTATIVE

4.1.1 University's Representative will provide limited administration of the Contract as provided in the Contract Documents and will be the representative of University. University's Representative will have authority to act on behalf of University only to the extent provided in the Contract Documents.

The University shall designate, from time to time, one or more representatives authorized to act on the University's behalf with respect to the Project, together with the scope of his/her respective authority. Functions for which this Contract provides will be performed by the University may be delegated by the University only by written notice to the Design Builder from the University. The Design Builder shall not be entitled to rely on directions (nor shall it be required to follow the directions) from anyone outside the scope of that person's authority as set forth in written authorization pursuant to this Contract. Directions and decisions made by University's Representative within his/her respective authority shall be binding on the University.

4.1.2 During the term of this Contract, University's Representative shall have the right to review Design Builder's Design Professionals' Work at such intervals as deemed appropriate by University's Representative. However, no actions taken during such review or site visit by University's Representative shall relieve Design Builder of any of its obligations of single-point responsibility for the design and construction of this Project nor form the basis for a Claim if such actions extend the Contract Completion Date beyond the Contract Time.

4.1.3 University's Representative will not have control over, will not be in charge of, and will not be responsible for design or construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely Design Builder's responsibility.

4.1.4 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, University and Design Builder shall communicate through University's Representative. Except when direct communication has been specifically authorized in writing by University's Representative, communications by Design Builder with University's consultants and University's Representative's consultants shall be through University's Representative. Communications by University and University's Representative with Subcontractors will be through Design Builder. Communications by Design Builder and Subcontractors with Separate Contractors shall be through University's Representative. Design Builder shall not rely on oral or other non-written communications.

4.1.5 Based on University's Representative's Project site visits, review of Design Work, and evaluations of Design Builder's Applications For Payment, University's Representative will recommend amounts, if any, due Design Builder and will issue Certificates For Payment in such amounts.

4.1.6 University's Representative will have the authority to reject the Work, or any portion thereof, which does not conform to the Contract Documents. University's Representative will have the authority to stop the Work, or any portion thereof. Whenever University's Representative considers it necessary, or advisable, for implementation of the intent of the Contract Documents, University's Representative will have the authority to require additional inspection or testing of the Work in accordance with the Contract Documents, whether or not such Work is fabricated, installed, or completed. However, no authority of University's Representative conferred by the Contract Documents nor any decision made in good faith either to exercise, or to not exercise such authority, will give rise to a duty or responsibility of University or University's Representative to Design Builder, or any person or entity claiming under, or through, Design Builder.

4.1.7 University's Representative will have the authority to conduct inspections as provided in the Contract Documents, to take Beneficial Occupancy and to determine the dates of Substantial Completion and Final Completion; will receive for review and approval any records, written warranties, and related documents required by the Contract Documents and assembled by Design Builder; and will issue a final Certificate For Payment upon Design Builder's compliance with the requirements of the Contract Documents.

4.1.8 University's Representative will be, in the first instance, the interpreter of the requirements of the Contract Documents and the judge of performance thereunder by Design Builder. Should Design Builder discover any conflicts, omissions, or errors in the Construction Documents or the Contract Documents; have any questions about the interpretation or clarification of the Contract Documents; question whether Work is within the scope of the Contract Documents; then, before proceeding with the Work affected, Design Builder shall notify University's Representative in writing and request interpretation, or clarification. University's Representative's response to

questions and requests for interpretations, clarifications, instructions, or decisions will be made with reasonable promptness. Should Design Builder proceed with the Work affected before receipt of a response from University's Representative, any portion of the Work which is not done in accordance with University's Representative's interpretations, clarifications, instructions, or decisions shall be removed or replaced and Design Builder shall be responsible for all resultant losses.

4.2 DESIGN BUILDER CHANGE ORDER REQUESTS

4.2.1 Design Builder may request changes to the Contract Sum and/or Contract Time for Extra Work, materially differing site conditions, or delays to Final Completion of the Work.

4.2.2 Conditions precedent to obtaining an adjustment of the Contract Sum and/or Contract Time payment of money, or other relief with respect to the Contract Documents, for any other reason, are:

.1 Timely submission of a Change Order Request that meets the requirements of Articles 4.2.3.1 and 4.2.3.2 below; and

.2 If requested, timely submission of additional informational requested by the University's Representative pursuant to Article 4.2.3.3 below.

4.2.3 Change Order Request:

4.2.3.1 A Change Order Request will be deemed timely submitted if, and only if, it is submitted within 7 days of the date the Design Builder discovers, or reasonably should discover the circumstances giving rise to the Change Order Request, unless additional time is allowed in writing by University's Representative for submission of the Change Order Request, provided that if:

.1 The Change Order Request includes compensation sought by a Subcontractor; AND

.2 The Design Builder requests in writing to the University's Representative, within the 7-day time period, additional time to permit Design Builder to conduct an appropriate review of the Subcontractor Change Order Request, then the time period for submission of the actual Change Order Request shall be extended by the number of days specified in writing by the University's Representative.

4.2.3.2 A Change Order Request must state that it is a Change Order Request, state and justify the reason for the request, and specify the amount of any requested adjustment of the Contract Sum, Contract Time, and/or other monetary relief. If the Design Builder requests an adjustment to the Contract Sum or other monetary relief, the Design Builder shall submit the following with the Change Order Request:

.1 A completed Cost Proposal in the form contained in the Exhibits meeting the requirements of Article 7 of the General Conditions; OR

.2 A partial Cost Proposal and a declaration of what required information is not then known to Design Builder. If Design Builder failed to submit a completed Cost Proposal with the Change Order Request, Design Builder shall submit a completed Cost Proposal meeting the requirements of Article 7 within 7 days of the date the Design Builder submitted the Change Order Request unless additional time is allowed by the University's Representative.

4.2.3.3 Upon request of University's Representative, Design Builder shall submit such additional information as may be requested by University's Representative for the purpose of evaluating the Change Order Request. Such additional information may include:

.1 If Design Builder seeks an adjustment of the Contract Sum or other monetary relief, actual cost records for any changed or extra costs (including without limitation, payroll records, material and rental invoices and the like), shall be submitted by the deadline established by the University's Representative, who may require such actual cost records to be submitted and reviewed, on a daily basis, by the University's Representative and/or representatives of the University's Representative.

.2 If Design Builder seeks an adjustment of the Contract Time, written documentation demonstrating Design Builder's entitlement to a time extension under Article 8.4, which shall be submitted within 15 days of the date requested unless the University's Representative requires an earlier submission. If requested, Design Builder may submit a fragnet in support of its request for a time extension. The University may, but is not obligated to, grant a time extension on the basis of a fragnet alone which, by

its nature, is not a complete schedule analysis. If deemed appropriate by University Representative, Design Builder shall submit a more detailed schedule analysis in support of its request for a time extension.

.3 If Design Builder seeks an adjustment of the Contract Sum or other monetary relief for delay, written documentation demonstrating Design Builder's entitlement to such an adjustment under Article 7.3.9 of the General Conditions, which shall be submitted within 15 days of the date requested.

.4 Any other information requested by the University's Representative for the purpose of evaluating the Change Order Request, which shall be submitted by the deadline established by the University's Representative.

4.2.4 University's Representative will make a decision on a Change Order Request, within a reasonable time, after receipt of a Change Order Request. In the event the Change Order Request is submitted pursuant to Article 8.4.1, the University's Representative shall promptly review and accept or reject it within thirty (30) days. A final decision is any decision on a Change Order Request which states that it is final. If University's Representative issues a final decision denying a Change Order Request in whole or in part, Design Builder may contest the decision by filing a timely Claim under the procedures specified in Article 4.4 of the General Conditions.

4.2.5 Design Builder may file a written demand for a final decision by University's Representative on all or part of any Change Order Request as to which the University's Representative has not previously issued a final decision pursuant to Article 4.2.4 of the General Conditions; such written demand may not be made earlier than the 30th day after submission of the Change Order Request. Within 30 days of receipt of the demand, University's Representative will issue a final decision on the Change Order Request. The University's Representative's failure to issue a decision within the 30-day period shall be treated as the issuance, on the last day of the 30-day period, of a final decision to deny the Change Order Request in its entirety.

4.3 CLAIMS

4.3.1 The term "Claim" means a written demand or assertion by Design Builder seeking an adjustment or interpretation of the terms of the Contract Documents, payment of money, extension of time, or other relief with respect to the Contract Documents, including a determination of disputes or matters in question between University and Design Builder arising out of or related to the Contract Documents or the performance of the Work. However, the term "Claim" shall not include, and the Claims procedures provided under this Article 4, including but not limited to arbitration, shall not apply to the following:

.1 Claims respecting penalties for forfeitures prescribed by statute or regulation that a government agency is specifically authorized to administer, settle, or determine.

.2 Claims respecting personal injury, death, reimbursement, or other compensation arising out of or resulting from liability for personal injury or death.

.3 Claims by University, except as set forth in Articles, 4.5, 4.6, and 4.7 of the General Conditions.

.4 Claims respecting stop payment notices.

4.3.2 A Claim arises upon the issuance of a written final decision denying in whole or in part Design Builder's Change Order Request pursuant to Articles 4.2.4 and 4.2.5 of the General Conditions.

4.3.3 A Claim must include the following:

.1 A statement that it is a Claim and a request for a decision pursuant to Article 4.5 of the General Conditions.

.2 A detailed factual narrative of events fully describing the nature and circumstances giving rise to the Claim, including but not limited to, necessary dates, locations, and items of work affected.

.3 A certification, executed by Design Builder, that the claim is filed in good faith. The certification must be made on the Claim Certification form, included in the Exhibits to the Contract. The language of the Claim Certification form may not be modified.

.4 A certification, executed by each Subcontractor claiming not less than 5% of the total monetary amount sought by the claim, that the subcontractor's portion of the claim is filed in good faith. The certification must be made on the Claim Certification form, included in the Exhibits to the Contract. The language of the Claim Certification form may not be modified.

.5 A statement demonstrating that a Change Order Request was timely submitted as required by Article 4.2.4 of the General Conditions.

.6 If a Cost Proposal or declaration was required by Article 4.2.3 of the General Conditions, a statement demonstrating that the Cost Proposal or the declaration was timely submitted as required by Article 4.2.3 of the General Conditions.

.7 A detailed justification for any remedy or relief sought by the Claim, including to the extent applicable, the following:

.1 If the Claim involves Extra Work, an estimate of the costs must of the amounts claimed, including the items specified in Article 7.3.2 of the General Conditions. The cost breakdown must be provided even if the costs claimed have not been incurred when the Claim is submitted. To the extent costs have been incurred when the Claim is submitted, the Claim must include actual cost records (including without limitation, payroll records, material and rental invoices and the like) demonstrating that costs claimed have actually been incurred. To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records must be submitted on a current basis not less than once a month during any periods costs are incurred. A cost record will be considered current if submitted within 30 days of the date the cost reflected in the record is incurred. At the request of the University's Representative, claimed extra costs may be subject to further verification procedures (such as having an inspector verify the performance of alleged Extra Work on a daily basis). The cost breakdown must include an itemization of costs for i) labor including workers' names, classifications, regular hours and overtime hours worked, dates worked, and other pertinent information; ii) materials stored or incorporated in the work including invoices, purchase orders, location of materials either stored or incorporated into the work, dates materials were transported to the project or incorporated into the work, and other pertinent information; and iii) itemization of machinery and equipment including make, model, hours of use, dates of use and equipment rental rates of any rented equipment.

.2 Design Builder shall be responsible for all errors and omissions contained within the Construction Documents.

.3 If the Claim involves an extension of the Contract Time, written documentation demonstrating the Design Builder's entitlement to a time extension under Article 8.4 of the General Conditions, including the specific dates for which a time extension is sought and the specific reasons for entitlement of a time extension.

.4 If the Claim involves an adjustment of the Contract Sum for delay, written documentation demonstrating the Design Builder's entitlement to such an adjustment under Article 7.3.9 of the General Conditions, including but not limited to, a detailed time impact analysis of the Contract Schedule. The Contract Schedule must demonstrate Design Builder's entitlement to such an adjustment under Article 7.3.9 of the General Conditions.

4.4 ASSERTION OF CLAIMS

4.4.1 Claims by Design Builder shall be first submitted to University's Representative for decision.

4.4.2 Notwithstanding the making of any Claim or the existence of any dispute regarding any Claim, unless otherwise directed by University's Representative, Design Builder shall not cause any delay, cessation, or termination in or of Design Builder's performance of the Work, but shall diligently proceed with performance of the Work in accordance with the Contract Documents.

4.4.3 Design Builder shall submit a Claim in writing, together with all supporting data specified in Article 4.3.3 of the General Conditions, to University's Representative as soon as possible but not later than 30 days after the date the Claim arises under Article 4.3.2 of the General Conditions, provided that after written notification to the University's Representative within such time period, the time period for submission of the Claim shall be extended by the number of days specified in writing by the University's Representative where the Claim includes compensation sought by a Subcontractor and the Design Builder requests an extension of time to permit it to discharge its

responsibilities to conduct an appropriate review of the Subcontractor claim.

4.4.4 Design Builder agrees that strict compliance with the requirements of Articles 4.2, 4.3, and 4.4 of the General Conditions are conditions precedent to Design Builder's right to an informal conference to meet and confer to resolve a Claim, mediate a Claim, or arbitrate or litigate a Claim. Design Builder specifically agrees to assert no Claims via an informal conference, mediation, arbitration or litigation unless there has been strict compliance with Articles 4.2, 4.3, and 4.4 of the General Conditions. The failure of Design Builder to strictly comply with the requirements of Articles 4.2, 4.3 and 4.4 of the General Conditions constitutes a failure by Design Builder to exhaust its administrative remedies with the University, thereby denying any court or arbitration panel of jurisdiction to adjudicate the Claim.

4.5 DECISION OF UNIVERSITY'S REPRESENTATIVE ON CLAIMS

4.5.1 University's Representative will timely review Claims submitted by Design Builder. If University's Representative determines that additional supporting data are necessary to fully evaluate a Claim, University's Representative will request such additional supporting data in writing. Such data shall be furnished no later than 10 days after the date of such request. University's Representative will render a decision promptly and in any case within 30 days after the later of the receipt of the Claim or the deadline for furnishing such additional supporting data; provided that, if the amount of the Claim is in excess of $50,000, the aforesaid 30-day period shall be 45 days. Failure of University's Representative to render a decision by the applicable deadline will be deemed a decision denying the Claim on the date of the deadline, unless, upon receipt of a Claim, Contractor and University mutually agree to extend the time periods provided herein, or unless otherwise extended by law. The decision of University's Representative will be final and binding unless appealed in accordance with Articles 4.5.2, 4.6, and 4.7 of the General Conditions.

The University's Representative's decision on a Claim or dispute will include a written statement both identifying all disputed and undisputed portions of the Claim and substantially including the following:

“This is a decision under Article 4.5 of the General Conditions of your contract. If you are dissatisfied with the decision, and if you complied with the procedural requirements for asserting claims specified in Article 4 of the General Conditions of your contract, you may have the right to demand in writing an informal conference to meet and confer for settlement of any remaining issues in dispute, following which, if still dissatisfied, you may demand in writing a further resolution via nonbinding mediation, after which you have the right to arbitrate or litigate this decision. If you fail to take appropriate action within 30 days of the date of this decision, the decision shall become final and binding and not subject to further appeal.”

4.5.2 If either Contractor or University disputes University’s Representative’s decision on a Claim, then, within 30 days after the decision of University’s Representative on the Claim, or, if no decision has been issued, within 30 days from the date of the applicable deadline in Article 4.5.1 for University Representative to render a decision, such party (the “Disputing Party”) must provide written notice demanding an informal conference to meet and confer. University shall schedule the conference within 30 days upon receipt of the notice demanding an informal conference. The parties will attempt in good faith to resolve any controversy or Claim arising out of or relating to this Contract by negotiation at the conference.

4.6 MEDIATION

4.6.1 Within 10 business days following the informal conference to meet and confer stated in Article 4.5.2, if the Claim or any portion of the Claim remains in dispute, the University shall provide a written statement identifying the disputed and undisputed portions of the Claim. Within 30 days of receipt of the statement, if either Contractor or University disputes any portion of the Claim, then the Disputing Party must provide written notice to the non-disputing party demanding non-binding mediation. The Contractor and the University shall share the associated costs equally and shall mutually agree to a mediator within 10 business days. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim, with each party bearing the fees and costs of its respective mediator. Mediation shall include, but not be limited to, neutral evaluation, a dispute review board, or other negotiation or evaluation through an independent third party or board. The Contractor and the University may mutually agree to waive any individual mediation in writing and proceed to arbitration or litigation pursuant to this Contract.

4.7 LITIGATION AND ARBITRATION

4.7.1 Either party may provide a written notice of its election to arbitrate or provide written notice of its election to litigate the Claim within 30 days after the mediation pursuant to Article 4.6.1, or, if the parties mutually agreed in writing to waive mediation, within 30 days after the agreement is signed by both parties.

4.7.2 If a notice of election to arbitrate or litigate is not given by either party within 30 days pursuant to Article 4.7.1, University's Representative's decision on the Claim will be final and binding and not subject to appeal or challenge.

4.7.3 If the Disputing Party gives timely notice of its election to arbitrate the University's Representative's decision on a Claim, Disputing Party shall have the right, within 120 days after a Notice of Completion, or a Notice of Cessation, as applicable, is filed for the Contract, to make a demand for arbitration in accordance with Article 4.7. Failure to perfect a Claim for which a timely election to arbitrate has been made by the timely filing of a demand for arbitration and timely payment of all applicable and required fees to AAA shall result in the University's Representative's decision on said Claim becoming final and binding and not subject to appeal or challenge. If the Disputing Party makes a timely demand for arbitration, and the amount of the Claim in question, when combined with all other Claims, if any, which are the subject of previously filed demands for arbitration that have not been resolved by settlement or arbitration award, is $100,000 or more, then the other party may elect to litigate all such Claims by filing a written notice with the American Arbitration Association ("AAA") within 30 days after its receipt of notice from AAA of the Disputing Party's demand for arbitration of the Claim that raises the total amount of Claims subject to arbitration to $100,000 or more. If the other party fails to give notice of its election to litigate within such 30-day period, it shall be deemed to have consented to arbitration and waived the right to litigate. If after commencement of arbitration the amount of unresolved Claims in arbitration are allowed to be increased to $100,000 or more, through an AAA-allowed amendment or otherwise, either party may elect to litigate within 30 days following the date that the electing party first receives written notification from AAA that total Claims in arbitration equal or exceed $100,000. If neither party gives notice of its election to litigate within such 30-day period as applicable, then both parties shall be deemed to have consented to arbitration and waived the right to litigate.

4.7.4 A demand for arbitration pursuant to Article 4.7.3 of the General Conditions shall be in writing and shall include a copy of the Claim presented to University's Representative pursuant to Article 4.4 of the General Conditions, a copy of the decision of University's Representative pursuant to Article 4.5 of the General Conditions, if any, a copy of the University's written statement identifying the portion of the Claim that remained in dispute following the informal conference pursuant to Article 4.6.1, and a summary of the remaining portions of the Claim in dispute. The demand shall state the amount in controversy, if any, and state the remedy sought. The demand shall identify the University's Responsible Administrator as the representative of the responding party and the Office of the General Counsel as counsel for the responding party. The demand shall be filed with the AAA and shall not be deemed to have been made until all applicable fees have been paid to the AAA by the demanding party. Copies of the demand and attachments shall be sent to University's Responsible Administrator as the representative of the responding party and the University's Office of General Counsel as attorney for the responding party, at the addresses set forth in the Project Directory, at the time the demand for arbitration is initiated with the AAA.

4.7.5 Except as modified by this Article 4.7, arbitration shall be initiated and conducted in accordance with the Construction Industry Arbitration Rules of the AAA then in effect. The following additional modifications shall be made to the aforesaid AAA rules:

.1 Civil discovery shall be permitted for the production of documents and taking of depositions. Other discovery may be permitted at the discretion of the arbitrator. All disputes regarding discovery shall be decided by the arbitrator.

.2 University's Representative and/or University's consultants, shall, if required by agreement with University, upon demand by University join in and be bound by the Arbitration. University's Representative and University's consultants will have the same rights in any arbitration proceeding as are afforded by the AAA rules to Design Builder and University.

.3 Design Builder's sureties shall be bound by any arbitration award and may join in any arbitration proceeding.

.4 Except as provided in Articles 4.7.5.2. and 4.7.5.3 above, no Subcontractor or other person shall have a right or obligation to join in, or be a party to, any arbitration proceeding provided for in this Article 4 either directly, by joinder, by consolidation or actions, by counterclaim or cross-claim, or otherwise without the express written consent of University, Design Builder, and the joining party.

.5 If more than one demand for arbitration is made by a party with respect to Claims referred to University's Representative, all such Claims shall be consolidated into a single arbitration unless the parties otherwise agree in writing.

.6 If total Claims are less than $50,000, AAA expedited procedures as modified by this Article 4 shall apply. If total Claims are between $50,000 and $100,000 they shall be heard by a single arbitrator who shall be an attorney. If total Claims are in excess of $100,000 and are submitted to arbitration, either by agreement or by failure to elect litigation, the controversy shall be heard by a panel of three arbitrators, one of whom shall be an attorney.

.7 No arbitrator shall be appointed and no discovery may be commenced prior to the date of Final Completion unless University and Design Builder otherwise agree.

.8 The exclusive forum for determining arbitrability shall be the Superior Court of the State of California. AAA shall not submit to any arbitrator any matter concerning the arbitrability of the dispute if the arbitrability is contested.

.9 If the expedited procedures of the AAA are applicable, the AAA shall submit simultaneously to each party an identical list of 7 proposed arbitrators drawn from the National Panel of Commercial Arbitrators, and each party may strike 3 names from the list on a peremptory basis and return the list to AAA within 10 days from the date of receipt.

4.7.6 Unless University and Design Builder otherwise agree in writing, the arbitration decision shall be binding upon the parties, made under and in accordance with the laws of the State of California, supported by substantial evidence, and in writing. If the total of all Claims or cross-Claims submitted to arbitration is in excess of $50,000, the award shall contain the basis for the decision, findings of fact, and conclusions of law. Any arbitration award shall be subject to confirmation, vacation, or correction under the procedures and on the grounds specified in the California Code of Civil Procedure including without limitation Section 1296. The expenses and fees of the arbitrators and the administrative fees of the AAA shall be divided among the parties equally. Each party shall pay its own counsel fees, witness fees, and other expenses incurred for its own benefit.

4.7.7 University may, but is not required to, assert as a counterclaim any matter arising out of the claims asserted by Design Builder in the arbitration. University's failure to assert any such counterclaim in the arbitration shall be without prejudice to the University's right to assert the counterclaim in litigation or other proceeding.

4.7.8 Any litigation shall be filed in the Superior Court of the State of California for the County in which the contract was to be performed.

4.8 WAIVER

4.8.1 A waiver of, or failure by, University or University's Representative to enforce any requirement in this Article 4 in connection with any Claim shall not constitute a waiver of, and shall not preclude the University or University's Representative from enforcing, such requirements in connection with any other Claims.

4.8.2 The Design Builder agrees and understands that no oral approval, either express or implied, of any Claim shall be binding upon University unless and until such approval is ratified by execution of a written Change Order.

ARTICLE 5

SUBCONTRACTORS

5.1 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.1.1 Design Builder shall submit to the University's Representative after selecting Subcontractors, an updated Expanded List of Subcontractors, along with their respective addresses, telephone numbers, e-mail addresses and contractor's license numbers. The Expanded List of Subcontractors shall be provided no later than thirty (30) days after the date which University provides Letter of Design Review. If the Project is to proceed on a fast track/phased basis as identified in the exhibits, then a Letter of Design Review will be issued by the University for each such design submittal associated with a particular phase and identified in the exhibits. Failure to identify Subcontractors within the time period(s) above shall commit the Design Builder to carrying out the Construction Work with its own forces.

5.1.2 The University has the right to request all documentation that supports the Design Builder's selection of a Subcontractor. The University shall have the right of final approval as to the qualification(s) of a Subcontractor to perform its designated scope of work. Within the University's sole discretion, any Subcontractor may be deemed not qualified to perform work on the Project if

University or University's Representative determines that the Subcontractor fails to meet the requirements of the Contract Documents, or for any other reason.

5.1.3 The Subcontractors listed by Design Builder shall only be substituted in strict accordance with the "Subletting and Subcontracting Fair Practices Act" and upon the written consent of the University. Only upon compliance with the "Subletting and Subcontracting Fair Practices Act" and with the written consent of the University shall a substitution be made.

5.1.4 Any increase in the cost of the Work resulting from the replacement or substitution of a Subcontractor pursuant to above Article 5.1.3 or as required by the University or University's Representative pursuant to above Article 5.1.2, shall be borne solely by Design Builder. Design Builder shall not be entitled to any increase in Contract Sum or an extension of Contract Time due to such replacement or substitution.

5.2 SUBCONTRACTUAL RELATIONS

5.2.1 Any part of the Work performed for Design Builder by a first-tier Subcontractor shall be pursuant to a written subcontract. Each such subcontract shall require the Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to Design Builder by the terms of the Contract Documents, to assume toward Design Builder all the obligations and responsibilities which Design Builder assumes towards University by the Contract Documents, and to perform such portion of the Work in accordance with the Contract Documents. Each such subcontract shall preserve and protect the rights of University under the Contract Documents, with respect to the Work to be performed by Subcontractor, so that subcontracting thereof will not prejudice such rights. Design Builder shall cause each such subcontract to expressly include the following requirements:

.1 Subcontractor waives all rights that Subcontractor may have against University for damages caused by fire or other perils covered by builder's risk property insurance carried by Design Builder or University, except for such rights Subcontractor may have to the proceeds of such insurance held by University under Article 11 of the General Conditions.

.2 University, and entities and agencies designated by University, will have access to and the right to audit and the right to copy, at University's cost, all of Subcontractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Subcontractor shall preserve all such records and other items for a period of at least 3 years after Final Completion.

.3 Subcontractor recognizes the rights of University under Article 5.3 of the General Conditions, Contingent Assignment of Subcontracts, and agrees, upon notice from University that University has elected to accept said assignment and to retain Subcontractor pursuant to the terms of the subcontract, to complete the unperformed obligations under the subcontract and, if requested by University, to execute a written agreement confirming that Subcontractor is bound to University under the terms of the subcontract.

.4 Design Builder is responsible for reviewing and coordinating the Work of and among his subcontractors and Design Professionals. This review and coordination includes, but is not limited to, resolution of any inconsistencies, errors or omissions.

5.2.2 Upon the request of University, Design Builder shall promptly furnish to University a true, complete, and executed copy of any subcontract.

5.2.3 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and University, except when, and only to the extent that, University elects to accept the assignment of the subcontract with such Subcontractor pursuant to Article 5.3 of the General Conditions, Contingent Assignment of Subcontracts.

5.3 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.3.1 Design Builder hereby assigns to University all its interest in first-tier subcontracts now or hereafter entered into by Design Builder for performance of any part of the Work. The assignment will be effective upon acceptance by University in writing and only as to those subcontracts which University designates in writing. University may accept said assignment at any time during the course of the Work and prior to Final Completion in the event of a suspension or termination of Design Builder's rights under the Contract Documents. Such assignment is part of the consideration to University for entering into the Contract with Design Builder and may not be withdrawn prior to Final Completion.

ARTICLE 6

CONSTRUCTION BY UNIVERSITY OR BY SEPARATE CONTRACTORS

6.1 UNIVERSITY'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 University reserves the right to award separate contracts for, or to perform with its own forces, construction or operations related to the Work or other construction or operations at or affecting the Project site, including portions of the Work which have been deleted by Change Order. Design Builder shall cooperate with University's forces and Separate Contractors.

6.1.2 University will provide coordination of the activities of University's forces and of each Separate Contractor with the Work of Design Builder. Design Builder shall participate with University and Separate Contractors in joint review of construction schedules and Project requirements when directed to do so. Design Builder shall make necessary revisions to the Contract Schedule after such joint review.

6.2 MUTUAL RESPONSIBILITY

6.2.1 Design Builder shall afford University and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities. Design Builder shall connect, schedule, and coordinate its construction and operations with the construction and operations of University and Separate Contractors as required by the Contract Documents.

6.2.2 If a portion of the Work is dependent upon the proper execution or results of other construction or operations by University or Separate Contractors, Design Builder shall inspect such other design or construction or operations before proceeding with that portion of the Work. Design Builder shall promptly report to University's Representative apparent discrepancies or defects which render the other design, construction or operations unsuitable to receive the Work. Unless otherwise directed by University's Representative, Design Builder shall not proceed with the portion of the Work affected until apparent discrepancies or defects have been corrected. Failure of Design Builder to so report within a reasonable time after discovering such discrepancies or defects shall constitute an acknowledgment that the other construction or operations by University or Separate Contractors is suitable to receive the Work, except as to defects not then reasonably discoverable.

6.3 UNIVERSITY'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises between Design Builder and Separate Contractors as to the responsibility under their respective contracts for maintaining the Project site and surrounding areas free from waste materials and rubbish, University may clean up and allocate the cost between those firms it deems to be responsible.

ARTICLE 7

CHANGES IN THE WORK

7.1 CHANGES

7.1.1 University may, from time to time, order or authorize additions, deletions, and other changes in the Work by Change Order or Field Order without invalidating the Contract and without notice to sureties. Absence of such notice shall not relieve such sureties of any of their obligations to University.

7.1.2 Design Builder may request a Change Order under the procedures specified in Article 4.2 of the General Conditions.

7.1.3 A Field Order may be issued by University, does not require the agreement of Design Builder, and shall be valid with or without the signature of Design Builder.

7.1.4 Design Builder shall proceed promptly with any changes in the Work, unless otherwise provided in the relevant Change Order or Field Order.

7.2 CHANGES DEFINITIONS

7.2.1 A Change Order is a Contract Document (as shown in the Exhibits) which has been signed by both University and Design Builder, and states their agreement, as applicable, to any of the following:

.1 A change in the Work.

.2 The amount of an adjustment of the Contract Sum.

.3 The amount of an adjustment of the Phase 2 Fee or Phase 3 Fee.

.4 The amount of an adjustment of the Contract Time.

.5 The amount of an adjustment of the Phase 2 Time or Phase 3 Time.

.6 A modification to any other Contract term or condition.

7.2.2 A Unilateral Change Order may also be issued by University, without Design Builder's signature, where University determines that a change in the Work requires an adjustment of the Contract Sum or Contract Time as University believes to be properly due Design Builder, even though no agreement has been reached between University and Design Builder with regard to such change in the Work.

7.2.3 A Field Order (as shown in the Exhibits) is a Contract Document issued by the University that orders the Design Builder to perform Work. A Field Order may, but need not, constitute a change in the Work and may, but need not, entitle Design Builder to an adjustment of the Contract Sum or Contract Time.

7.3 CHANGE ORDER PROCEDURES

7.3.1 Design Builder shall provide a Change Order Request and Cost Proposal pursuant to Article 4.2 of the General Conditions and this Article 7.3. Adjustments of the Contract Sum resulting from Extra Work and Deductive Work shall be determined using one of the methods described in this Article 7.3. Adjustments of the Contract Time shall be subject to the provisions in Article 8 of the General Conditions. Design Builder's obligation to provide Cost Proposals shall be subject to the following:

.1 The obligation of Design Builder to provide Cost Proposals is not Extra Work, and shall not entitle the Design Builder to an adjustment of the Contract Sum or Contract Time.

.2 The failure of Design Builder to timely provide a Cost Proposal pursuant to Article 4.2 of the General Conditions and this Article 7.3.1 is a material breach of the Contract. Design Builder shall be responsible for any delay in implementing a change for which Design Builder failed to timely provide a Cost Proposal consistent with the requirements of Article 4.2 of the General Conditions and this Article 7.3.1.

7.3.2 The term "Cost of Extra Work" as used in this Article 7.3 shall mean actual costs incurred or to be incurred by Design Builder and each Subcontractor regardless of tier involved, to the extent not otherwise disallowed under Article 7.3.3, and shall be limited to the following (to the extent the Design Builder demonstrates that the costs are both reasonable and actually incurred, if such costs have been incurred):

.1 Straight-time wages or salaries for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of performance of the Extra Work.

.2 Fringe Benefits and Payroll Taxes for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of performance of the Extra Work.

.3 Overtime wages or salaries, specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of performance of the Extra Work.

.4 Fringe Benefits and Payroll Taxes for overtime Work specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of performance of the Extra Work.

.5 Costs of materials and consumable items which are furnished and incorporated into the Extra Work, as approved by University's Representative. Such costs shall be charged at the lowest price available to the Design Builder but in no event shall such costs exceed competitive costs obtainable from other

subcontractors, suppliers, manufacturers, and distributors in the area of the Project site. All discounts, rebates, and refunds and all returns from sale of surplus materials and consumable items shall accrue to University and Design Builder shall make provisions so that they may be obtained.

.6 Sales taxes on the costs of materials and consumable items which are incorporated into and used in the performance of the Extra Work pursuant to Article 7.3.2.5 above.

.7 Rental charges for necessary machinery and equipment, whether owned or hired, as authorized in writing by University's Representative, exclusive of hand tools, used directly in the performance of the Extra Work. Such rental charges shall not exceed the current Equipment Rental Rates published by the California Department of Transportationfor the area in which the work is performed. Such rental rates are found at http://www.dot.ca.gov/hq/construc/equipmnt.html . Design Builder shall attach a copy of said schedule to the Cost Proposal. The charges for any machinery and equipment shall cease when the use thereof is no longer necessary for the Extra Work.

.8 Additional costs of royalties and permits due to the performance of the Extra Work.

.9 Cost for revisions in the Design Development Documents or Construction Documents, when such revisions are inconsistent with approvals or instructions previously given by University. Revisions made necessary by adjustments in University's program or project budget such costs to be computed at the hourly rates specified in the Design Professional Rate Schedule in the Exhibits.

.10 The cost for Insurance and Bonds shall not exceed 2% of items .1 through .9 above.

University and Design Builder may agree upon rates to be charged for any of the items listed in this Article 7.3.2. Such agreed upon rates shall be subject to audit pursuant to Article 15.7 of the General Conditions. Design Builder shall promptly refund to University any amounts (including associated mark-ups) in excess of the actual costs of such items.

7.3.3 Cost of Extra Work shall not include any of the following:

.1 Supervision
.2 Superintendent(s).
.3 Assistant Superintendent(s).
.4 Project Engineer(s).
.5 Project Manager(s).
.6 Scheduler(s).
.7 Estimator(s).
.8 Small tools (Replacement value does not exceed $300).
.9 Office expenses including staff, materials and supplies.
.10 On-site or off-site trailer and storage rental and expenses.
.11 Site fencing.
.12 Utilities including gas, electric, sewer, water, telephone, facsimile, copier equipment.
.13 Data processing personnel and equipment.
.14 Federal, state, or local business income and franchise taxes.
.15 Overhead and Profit.
.16 Costs and expenses of any kind or item not specifically and expressly included in Article 7.3.2 above.
.17 Costs in Article 7.3.2.9 in excess of the hourly rates included in the Design Professional Rate Schedule.

7.3.4 The term "Design Builder Fee" shall mean the full amount of compensation, both direct and indirect (including without limitation all overhead and profit), to be paid to Design Builder for its own Work and the Work of all Subcontractors, for all costs and expenses not included in the Cost of Extra Work, whether or not such costs and expenses are specifically referred to in Article 7.3.3 above. The Design Builder Fee shall not be compounded.

The Design Builder Fee shall be computed as follows when the change impacts the Construction Work, or for the portion of the change that is related to Construction Work:

.1 Fifteen percent (15%) of the cost of that portion of the Extra Work to be performed by the Design Builder with its own forces.

.2 Fifteen percent (15%) of the cost of that portion of the Work to be performed by a Subcontractor with its own forces, plus 5% for the Design Builder. Total combined Design Builder and Subcontractor fee shall not exceed 20%.

.3 Fifteen percent (15%) of the cost of that portion of the Work to be performed by a sub-subcontractor with its own forces, or any lower tier of Subcontractor, plus 5% for the Subcontractor, plus 5% for the Design Builder. Total combined Design Builder, Subcontractor and all sub-subcontractor fee shall not exceed 25%.

.4 Notwithstanding the foregoing, the Design Builder Fee for additional Design Work under 7.3.2.9 of the General Conditions shall be 5% of the cost of such additional Design Work performed by a Design Professional. The cost of such additional Design Work shall be computed using the hourly rates in the Exhibits. The fee for the Design Professional Subcontractors shall be the overhead/profit rate specified in the Design Professional Rate Schedule.

7.3.5 Compensation for Extra Work shall be computed on the basis of one or more of the following:

.1 Where the Work involved is covered by Unit Prices contained in the Contract Documents, by application of the Unit Prices to the quantities of the items involved.

.2 Where the Work involved is not covered by Unit Prices contained in the Contract Documents, by application of the Unit Prices agreed upon by University and Design Builder.

.3 Where the Work involved requires revisions to the Design Development Documents or the Construction Documents when such revisions are inconsistent with approvals or instructions previously given by University, including revisions made necessary by adjustments in University's program or project budget, by application of the hourly rates reflected in the Design Professional Rate Schedule.

.4 Where Articles 7.3.5.1, 7.3.5.2 and 7.3.5.3 above are not applicable, a mutually agreed upon lump sum supported by a Cost Proposal pursuant to Article 7.3.1 of the General Conditions.

.5 If University and Design Builder cannot agree upon a lump sum , by Cost of Extra Work plus Design Builder Fee applicable to such Extra Work.

7.3.6 As a condition to Design Builder's right to an adjustment of the Contract Sum, pursuant to Article 7.3.5.5 above, Design Builder must keep daily detailed and accurate records itemizing each element of cost and shall provide substantiating records and documentation, including time cards and invoices. Such records and documentation shall be submitted to and approved by University's Representative on a daily basis.

7.3.7 For Work to be deleted by Change Order, the reduction of the Contract Sum shall be computed on the basis of one or more of the following:

.1 Unit Prices stated in the Contract Documents.

.2 Unit Prices agreed upon by University and Design Builder.

.3 Where Unit Prices are not applicable, a lump sum agreed upon by University and Design Builder, based upon the actual costs which would have been incurred in performing the deleted portions of the Work as calculated in accordance with Articles 7.3.2 and 7.3.3 above and supported by a Cost Proposal pursuant to Article 7.3.1 above.

7.3.8 If any one Change involves both Extra Work and Deleted Work in the same portion of the Work, a Design Builder Fee will not be allowed if the deductive cost exceeds the additive cost. If the additive cost exceeds the deductive cost, a Design Builder Fee will be allowed only on the difference between the two amounts.

7.3.9 The Contract Sum will be adjusted for a delay if, and only if, Design Builder demonstrates that all of the following four conditions are met:

.1 Condition Number One: The delay results in an extension of the Contract Time pursuant to Article 8.4.1 of the General Conditions.

.2 Condition Number Two: The delay is caused solely by one, or more of the following:

.1 An error or omission in the Contract Documents caused by University and not as a result of Design Builder's failure to conform to criteria documents, performance standards, Construction Documents, or Contract Documents; or

.2 The University's decision to change the scope of the Work, where such decision is not the result of any default or misconduct of the Design Builder; or

.3 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the Design Builder; or

.4 The failure of the University (including the University acting through its consultants, Design Professionals, Separate Contractors or the University's Representative) to perform any Contract obligation where the failure to so perform is not the result of any default or misconduct of the Design Builder.

.5 A materially differing site condition pursuant to Article 3.24 of the General Conditions.

.3 Condition Number Three: The delay is not concurrent with a delay that is caused by an event other than those listed in Article 7.3.9.2 above.

.4 Condition Number Four: The delay is not caused, in whole or in part, by an event which occurs during the performance of Phase 1.

7.3.10 For each day of delay that meets all four conditions prescribed in Article 7.3.9 above, the Contract Sum will be adjusted by the daily rate included in the Agreement and specifically identified as the rate to be paid to Design Builder for Compensable Delays as agreed upon for the applicable Phase. Pursuant to Article 9.7.4 of the General Conditions, said daily rate shall not apply to delays occurring after Substantial Completion.

7.3.11 Except as provided in Articles 7 and 8, Design Builder shall have no claim for damage or compensation for any delay, interruption, hindrance, or disruption.

7.3.12 If for any reason one or more of the conditions prescribed in Article 7.3.9 above is held legally unenforceable, the remaining conditions must be met as a condition to obtaining an adjustment of the Contract Time under Article 7.3.10 above.

7.4 FIELD ORDERS

7.4.1 Field Orders issued by the University's Representative shall be subject to the following:

.1 A Field Order may state that it does or does not constitute a change in the Work.

.2 If the Field Order states that it does not constitute a change in the Work and the Design Builder asserts that the Field Order constitutes a change in the Work, in order to obtain an adjustment of the Contract Sum or Contract Time for the Work encompassed by the Field Order, Design Builder must follow all procedures set forth in Article 4 of the General Conditions, starting with the requirement of submitting a timely Change Order Request within 7 days of Design Builder's receipt of the Field Order; failure to strictly follow those procedures is a bar to any Claim for an adjustment of the Contract Sum or Contract Time arising from performance of the Work described in the Field Order.

.3 If the Field Order states that it does constitute a change in the Work, the Work described in the Field Order shall be considered Extra Work and the Design Builder shall be entitled to an adjustment of the Contract Sum and Contract Time, calculated under and subject to Design Builder's compliance with the procedures for verifying and substantiating costs and delays in Articles 7 and 8 of the General Conditions.

.4 In addition, if the Field Order states that it does constitute a change in the Work, the Field Order may or may not contain University's estimate of adjustment of Contract Sum and/or Contract Time. If the Field Order contains an estimate of adjustment of Contract Sum or Contract Time, the Field Order is subject to the following:

.1 The Design Builder shall not exceed the University's estimate of adjustment to Contract Sum or Contract Time without written authorization by University's Representative.

.2 If the Design Builder asserts that the change in the Work encompassed by the Field Order may entitle Design Builder to an adjustment of Contract Sum or Contract Time in excess of the University's estimate, in order not to be bound by University's estimate Design Builder must follow all procedures set forth in Article 4 of the General Conditions, starting with the requirement of submitting a timely Change Order Request within 7 days of Design Builder's receipt of the Field Order; failure to strictly follow those procedures is a bar to any Claim for an adjustment of the Contract Sum or Contract Time, in excess of the University's estimate, arising from performance of the Work described in the Field Order.

7.4.2 Upon receipt of a Field Order, Design Builder shall promptly proceed to perform the Work as ordered in the Field Order notwithstanding any disagreement by the Design Builder concerning whether the Work is extra.

7.5 VARIATION IN QUANTITY OF UNIT PRICE WORK

7.5.1 University has the right to increase or decrease the quantity of any Unit price item for which an estimated quantity is stated in the Bid Form.

7.6 WAIVER

7.6.1 A waiver of, or failure by, University or University's Representative to enforce any requirement in this Article 7, including, without limitation, the requirements in Articles 7.3.6, 7.3.8, 7.3.9, 7.3.10, 7.3.11, or 7.3.12 in connection with any adjustment of the Contract Sum, will not constitute a waiver of, and will not preclude the University, or University's Representative, from enforcing such requirements in connection with any other adjustments of the Contract Sum.

7.6.2 The Design Builder agrees and understands that no oral approval, either express or implied, of any adjustment of the Contract Sum by University or its agents shall be binding upon University unless and until such approval is ratified by execution of a written change order.

ARTICLE 8

CONTRACT TIME

8.1 COMMENCEMENT OF THE WORK

8.1.1 The date of commencement of the Phase of the Work shall be set forth in the applicable Notice To Proceed. The date of commencement of the Work shall not be postponed by the failure of Design Builder, Subcontractors, or of persons or firms for whom Design Builder is responsible, to act.

8.2 PROGRESS AND COMPLETION

8.2.1 By signing the Agreement:

.1 Design Builder represents to University that the Contract Time is reasonable for performing the Work and that Design Builder is able to perform the Work within the Contract Time.

.2 Design Builder agrees that University is purchasing the right to have the Design Builder present on the Project site for the full duration of the Contract Time applicable to the Construction Phase, even if Design Builder could finish the Contract in less than the Contract Time.

8.2.2 Design Builder shall not, except by agreement or instruction of University in writing, commence operations on the Project site or elsewhere prior to the effective date of insurance required by Article 11 of the General Conditions to be furnished by Design Builder. The dates of commencement and Final Completion of the Work shall not be changed by the effective date of such insurance.

8.2.3 Design Builder shall proceed expeditiously with adequate forces and shall achieve Final Completion of the Work within the Contract Time. If University's Representative determines and notifies Design Builder that Design Builder's progress is such that Design Builder will not achieve Final Completion of the Work within the Contract Time, Design Builder shall immediately and at no additional cost to University, take all measures necessary, including

working such overtime, additional shifts, Sundays, or holidays as may be required to ensure that Design Builder will achieve Final completion of the Work within the Contract Time. Upon receipt of such notice from University's representative, Design Builder shall immediately notify University's Representative of all measures to be taken to ensure Final Completion of the Work within the Contract Time. Design Builder shall reimburse University for any extra costs or expenses (including the reasonable value of any services provided by University's employees) incurred by University as the result of such measures.

8.3 DELAY

8.3.1 Except and only to the extent provided otherwise in Articles 7 and 8 of the General Conditions, by signing the Agreement, Design Builder agrees:

.1 To bear the risk of delays to the Work; and

.2 That Design Builder's Proposal for the Contract was made with full knowledge of this risk.

In agreeing to bear the risk of delays to the Work, Design Builder understands that, except and only to the extent provided otherwise in Articles 7 and 8 of the General Conditions, the occurrence of events that delay the Work shall not excuse Design Builder from its obligation to achieve Final Completion of the Work within the Contract Time, and shall not entitle the Design Builder to an adjustment of the Contract Sum.

8.4 ADJUSTMENT OF THE CONTRACT TIME FOR DELAY

8.4.1 Subject to Article 8.4.2 below, the Contract Time will be extended for each day of delay for which Design Builder demonstrates that all of the following four conditions have been met; a time extension will not be granted for any day of delay for which Design Builder fails to demonstrate compliance with the four conditions:

.1 Condition Number One: The delay is critical. A delay is critical if and only to the extent it delays a work activity that cannot be delayed without delaying Final Completion of the Work to a date that is beyond the Contract Time.

.2 Condition Number Two: Within 7 days of the date the Design Builder discovers or reasonably should discover an act, error, omission or unforeseen condition or event causing the delay is likely to have an impact on the critical path of the Project, (even if the Design Builder has not yet been delayed when the Design Builder discovers or reasonably should discover the critical path impact of the act, error, omission or unforeseen condition giving rise to the delay) the Design Builder submits a timely and complete Change Order Request that meets the requirements of Article 4.2 of the General Conditions.

.3 Condition Number Three: The delay is not caused by:

.1 A concealed, unforeseen or unknown condition or event except for a materially differing site condition pursuant to Article 3.24 of the General Conditions; or

.2 The financial inability, misconduct or default of the Design Builder, a Subcontractor or supplier; or

.3 The unavailability of materials or parts; or

.4 An error or omission in the Contract Documents caused by Design Builder or Design Builder's Design Consultants.

.4 Condition Number Four: The delay is caused by:

.1 Fire; or

.2 Strikes, boycotts, or like obstructive actions by labor organizations; or

.3 Acts of God (As used herein, "Acts of God" shall include only earthquakes in excess of a magnitude of 3.5 on the Richter Scale and tidal waves); or

.4 A materially differing site condition pursuant to Article 3.24 of the General Conditions; or

.5 An error or omission in the Contract Documents caused by the University; or

.6 The University's decision to change the scope of the Work, where such decision is not the result of any default or misconduct of the Design Builder; or

.7 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the Design Builder; or

.8 The failure of the University (including the University acting through its consultants, Design Professionals, Separate Contractors or the University's Representative) to perform any Contract obligation unless such failure is due to Design Builder's default or misconduct.

.9 "Adverse weather" but only for such days of adverse weather, or on-site conditions caused by adverse weather, that are in excess of the number of days specified in the Supplementary Conditions. In order for a day to be considered a day of adverse weather for the purpose of determining whether Design Builder is entitled to an adjustment in Contract Time, both of the following conditions must be met:

.1 The day must be a day in which, as a result of adverse weather, less than one half day of critical path work is performed by Design Builder; and

.2 The day must be identified in the Contract Schedule as a scheduled work day.

8.4.2 If and only if a delay meets all four conditions prescribed in Article 8.4.1 above, then a time extension will be granted for each day that Final Completion of the Work is delayed beyond the Contract Time, subject to the following:

.1 When two or more delays (each of which meet all four conditions prescribed in Article 8.4.1 above) occur concurrently on the same day, and each such concurrent delay by itself without consideration of the other delays would be critical, then all such concurrent delays shall be considered critical. For the purpose of determining whether and to what extent the Contract Time should be adjusted pursuant to this Article 8.4.2, such concurrent critical delays shall be treated as a single delay for each such day.

.2 Design Builder shall be entitled to a time extension for a day of delay that meets all four requirements of Article 8.4.1 above if the delay is concurrent with a delay that does not meet all four conditions of Article 8.4.1 above.

8.4.3 If for any reason one or more of the four conditions prescribed in Article 8.4.1 above is held legally unenforceable, then all remaining conditions must be met as a condition to obtaining an extension of the Contract Time under Article 8.4.2 above.

8.5 COMPENSATION FOR DELAY

8.5.1 To the maximum extent allowed by law, any adjustment of the Contract Sum as the result of delays shall be limited to the amounts specified in Article 7 of the General Conditions. Such adjustment shall, to the maximum extent allowed by law, constitute payment in full for all delay related costs (including costs for disruption, interruption and hindrance, general conditions, on and off-site overhead and profit) of Design Builder, its Suppliers and Subcontractors of all tiers and all persons and entities working under or claiming through Design Builder in connection with the Project.

8.5.2 By signing the Agreement, the parties agree that the University is buying the right to do any or all of the following, which are reasonable and within the contemplation of the parties:

.1 To order changes in the Work, regardless of the extent and number of changes, including without limitation:

.1 Changes to correct errors or omissions caused by University, if any, in the Contract Documents.

.2 Changes resulting from the University's decision to change the scope of the Work subsequent to execution of the Contract.

.3 Changes due to unforeseen conditions.

.2 To suspend the Work or any part thereof.

.3 To delay the Work, including without limitation, delays resulting from the failure of the University or the University's Representative to timely perform any Contract obligation and delays for University's convenience.

8.6 WAIVER

8.6.1 A waiver of, or failure by, University or University's Representative to enforce any requirement in this Article 8, including without limitation the requirements in Article 8.4 above, in connection with any or all past delays shall not constitute a waiver of, and shall not preclude the University or University's Representative from enforcing, such requirements in connection with any present or future delays.

8.6.2 Design Builder agrees and understands that no oral approval, either express or implied, of any time extension by University or its agents shall be binding upon University unless and until such approval is ratified by execution of a written Change Order.

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 COST BREAKDOWN

9.1.1 Within 10 days after receipt of the Construction Notice to Proceed for Phase 3, Design Builder shall submit to University's Representative a Cost Breakdown of the Contract Sum in the form contained in the Exhibits. The Cost Breakdown shall itemize as separate line items the cost of each work activity and all associated costs, including but not limited to warranties, as-built documents, overhead expenses, and the total allowance for profit. Insurance and bonds shall each be listed as separate line items. The total of all line items shall equal the Contract Sum. The Cost Breakdown, when approved by the University's Representative, shall become the basis for determining the cost of Work performed for Design Builder's Applications for Payment.

9.2 PROGRESS PAYMENT

9.2.1 University agrees to pay monthly to Design Builder, subject to Article 9.4.3 of the General Conditions, an amount equal to 95% of the sum of the following:

.1 Cost of the Construction Work in permanent place as of the date of the Design Builder's Application For Payment.

.2 Cost of materials not yet incorporated in the Construction Work, subject to Article 9.3.5 of the General Conditions.

.3 Less amounts previously paid.

.4 During the Design Work, the University shall pay Design Builder monthly a uniform amount prorated, based on the Contract Time and Contract Sum associated with either Design Development or Construction Documents Phase.

Under this Article 9.2.1, University may, but is not required to, pay Design Builder more frequently than monthly.

9.2.2 After Substantial Completion and subject to Article 9.4.3 of the General Conditions, University will make any of the remaining progress payments in full.

9.3 APPLICATION FOR PAYMENT

9.3.1 On or before the 10th day of the month or such other date as is established by the Contract Documents, Design Builder shall submit to University's Representative an itemized Application For Payment, for the cost of the Work in permanent place, as approved by University's Representative, which has been completed in accordance with the Contract Documents, less amounts previously paid. The Application For Payment shall be prepared as follows:

.1 Use the form contained in the Exhibits.

.2 Itemize in accordance with the Cost Breakdown as applicable.

.3 Include such data substantiating Design Builder's right to payment as University's Representative may reasonably require, such as invoices, certified payrolls, daily time and material records, and, if securities are deposited in lieu of retention pursuant to Article 9.5 of the General Conditions, a certification of the market value of all such securities as of a date not earlier than 5 days prior to the date of the Application For Payment as applicable.

.4 Itemize retention.

9.3.2 Applications For Payment shall not include requests for payment on account of (1) changes which have not been authorized by Change Orders or (2) amounts Design Builder does not intend to pay a Subcontractor because of a dispute or other reason.

9.3.3 If required by University, an Application For Payment shall be accompanied by (1) a summary showing payments that will be made to Subcontractors covered by such application and conditional releases upon progress payment or final payment and (2) unconditional waivers and releases of claims and stop notices, in the form contained in the Exhibits, from each Subcontractor listed in the preceding Application For Payment covering sums disbursed pursuant to that preceding Application For Payment.

9.3.4 Design Builder warrants that, upon submittal of an Application For Payment, all Work, for which Certificates For Payment have been previously issued and payment has been received from University, shall be free and clear of all claims, stop notices, security interests, and encumbrances in favor of Design Builder, Subcontractors, or other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment relating to the Work.

9.3.5 At the sole discretion of University, University's Representative may approve for inclusion in the Application For Payment the cost of materials not yet incorporated in the Construction Work but already delivered and suitably stored either at the Project site or at some other appropriate location acceptable to University's Representative. In such case, Design Builder shall furnish evidence satisfactory to University's Representative (1) of the cost of such materials; and (2) that such materials are under the exclusive control of Design Builder. Only materials to be incorporated in the Work will be considered for payment. Any payment shall not be construed as acceptance of such materials nor relieve Design Builder from sole responsibility for the care and protection of such materials; nor relieve Design Builder from risk of loss to such materials from any cause whatsoever; nor relieve Design Builder from its obligation to complete the Work in accordance with the Contract; nor act as a waiver of the right of University to require fulfillment of all terms of the Contract. Nothing contained within this Article 9.3.5 shall be deemed to obligate University to agree to payment for any non-incorporated materials or any part thereof, payment being in the sole and absolute discretion of University.

9.4 CERTIFICATE FOR PAYMENT

9.4.1 If Design Builder has submitted an Application For Payment in accordance with Article 9.3 above, University's Representative shall, not later than 5 working days after the date of receipt of the Application For Payment, issue to University, with a copy to Design Builder, a Certificate For Payment for such amount as University's Representative determines to be properly due.

9.4.2 If any such Application For Payment is determined not to be in accordance with Article 9.3 above, University will inform Design Builder as soon as practicable, but not later than 5 working days after receipt. Thereafter, Design Builder shall have 3 days to revise and resubmit such Application For Payment; otherwise University's Representative may issue a Certificate For Payment in the amount that University's Representative determines to be properly due without regard to such Application For Payment.

9.4.3 Approval of all or any part of an Application For Payment may be withheld, a Certificate For Payment may be withheld, and all or part of a previous Certificate For Payment may be nullified and that amount withheld from a current Certificate For Payment on account of any of the following:

.1 Defective Work not remedied.

.2 Third-party claims against Design Builder or University arising from the acts or omissions of Design Builder or Subcontractors.

.3 Stop notices.

.4 Failure of Design Builder to make timely payments due Subcontractors.

.5 A reasonable doubt that the Work can be completed for the balance of the Contract Sum then unpaid.

.6 Damage to University or Separate Contractor for which Design Builder is responsible.

.7 Reasonable evidence that the Work will not be completed within the Contract Time; and that the unpaid balance of the Contract Sum would not be adequate to cover University's damages for the anticipated delay.

.8 Failure of Design Builder to maintain and update as-built documents.

.9 Failure of Design Builder to submit schedules or their updates as required by the Contract Documents.

.10 Failure to provide conditional or unconditional releases from any Subcontractor or supplier, if such waiver(s) have been requested by University's Representative.

.11 Performance of Work by Design Builder without properly processed Shop Drawings.

.12 Liquidated damages assessed in accordance with the Agreement.

.13 Failure to provide updated Reports of Subcontractor Information and Self-Certifications, as applicable.

.14 Failure to provide a Final Distribution of Contract Dollars with final Application for Payment.

.15 Any other failure of Design Builder to perform its obligations under the Contract Documents.

9.4.4 Subject to the withholding provisions of Article 9.4.3 of the General Conditions, University will pay Design Builder the amount set forth in the Certificate For Payment no later than 10 days after the issuance of the Certificate For Payment.

9.4.5 Neither University nor University's Representative will have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

9.4.6 Neither a Certificate For Payment nor a progress payment made by University will constitute acceptance of Defective Work.

9.5 DEPOSIT OF SECURITIES IN LIEU OF RETENTION AND DEPOSIT OF RETENTION INTO ESCROW

9.5.1 At the request and expense of Design Builder, a substitution of securities may be made for any monies retained by University under Article 9.2 to ensure performance under the Contract Documents. Securities equivalent in value to the retention amount required by the Contract Documents for each Certificate For Payment shall be deposited by Design Builder with a state or federally chartered bank in the State of California ("Escrow Agent"), which shall hold such securities pursuant to the escrow agreement referred to in Article 9.5.3 until retention is due in accordance with Article 9.8. Securities shall be valued as often as conditions of the securities market warrant, but in no case less than once per month. Design Builder shall deposit additional securities so that the current market value of the total of all deposited securities shall be at least equal to the total required amount of retention.

9.5.2 Alternatively to Article 9.5.1 above, and at the request and expense of Design Builder, University will deposit retention directly with Escrow Agent. Design Builder may direct the investment of such deposited retention into interest bearing accounts or securities, and such deposits or securities shall be held by Escrow Agent upon the same terms provided for securities deposited by Design Builder. Design Builder and its surety shall bear the risk of failure of the Escrow Agent selected.

9.5.3 A prerequisite to the substitution of securities in lieu of retention or the deposit of retention into escrow shall be the execution by Design Builder, University, and Escrow Agent of an Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention in the form contained in the Exhibits. The Design Builder shall submit the Selection of Retention Options and the Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention not later than the date when 50% of the Work has been completed. The terms of such escrow agreement are incorporated into the requirements of this Article 9.5.

9.6 BENEFICIAL OCCUPANCY

9.6.1 University reserves the right, at its option and convenience, to occupy or otherwise make use of any part of the Construction Work at any time prior to Substantial Completion or Final Completion upon 10 days' notice to Design

Builder. Such occupancy or use is herein referred to as "Beneficial Occupancy." Beneficial Occupancy shall be subject to the following conditions:

.1 University's Representative will make an inspection of the portion of the Project to be beneficially occupied and prepare a list of items to be completed or corrected prior to Final Completion. Prior to Beneficial Occupancy, University will issue a Certificate of Beneficial Occupancy on University's form.

.2 Beneficial Occupancy by University shall not be construed by Design Builder as an acceptance by University of that portion of the Construction Work which is to be occupied.

.3 Beneficial Occupancy by University shall not constitute a waiver of existing claims of University or Design Builder against each other.

.4 Design Builder shall provide, in the areas beneficially occupied and on a 24 hour and 7 day week basis as required, utility services, heating, and cooling for systems which are in operable condition at the time of Beneficial Occupancy. All responsibility for the operation and maintenance of equipment shall remain with Design Builder while the equipment is so operated. Design Builder shall submit to University an itemized list of each piece of equipment so operated with the date operation commences. The Guarantee to Repair Periods, as defined in Article 12.2, will commence upon the occupancy date stated in the Certificate of Beneficial Occupancy except that the Guarantee to Repair Periods for that part of equipment or systems that serve portions of the Work for which University has not taken Beneficial Occupancy or issued a Certificate of Substantial Completion shall not commence until the University has taken Beneficial Occupancy for that portion of the Work or has issued a Certificate of Substantial Completion with respect to the entire Project.

.5 University will pay all normal operating and maintenance costs resulting from its use of equipment in areas beneficially occupied.

.6 University will pay all utility costs which arise out of the Beneficial Occupancy.

.7 Design Builder shall not be responsible for providing security in areas beneficially occupied.

.8 University will use its best efforts to prevent its Beneficial Occupancy from interfering with the conduct of Design Builder's remaining Work.

.9 Design Builder shall not be required to repair damage caused by University in its Beneficial Occupancy.

.10 Except as provided in this Article 9.6, there shall be no added cost to University due to Beneficial Occupancy.

.11 Design Builder shall continue to maintain all insurance required by the Contract in full force and effect.

9.7 SUBSTANTIAL COMPLETION

9.7.1 "Substantial Completion" means the stage in the progress of the Construction Work, as determined by University's Representative, when the Construction Work is complete and in accordance with the Contract Documents except only for completion of minor items which do not impair University's ability to occupy and fully utilize the Construction Work for its intended purpose and a Certificate of Occupancy has been issued by the University's Building Official.

9.7.2 When Design Builder gives notice to University's Representative that the Construction Work is substantially complete, unless University's Representative determines that the Construction Work is not sufficiently complete to warrant an inspection to determine Substantial Completion, University's Representative will inspect the Construction Work. If the University's Representative determines that the Work is not substantially completed the University's Representative will prepare and give to Design Builder a comprehensive list of items to be completed or corrected before establishing Substantial Completion. Design Builder shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of Design Builder to complete all Construction Work in accordance with the Contract Documents. Upon notification that the items on the list are completed or corrected, as applicable, the University's Representative will make an inspection to determine whether the Construction Work is substantially complete. Costs for additional inspection by University's Representative shall be deducted from any monies due and payable to Design Builder.

9.7.3 When University's Representative determines that the Construction Work is substantially complete, University's Representative will arrange for inspection by University's Building Official and other officials, as appropriate, for the purpose of issuing a Certificate of Occupancy. After a Certificate of Occupancy has been issued by the University's Building Official, the University's Representative will prepare a Certificate of Substantial Completion on University's form as contained in the Exhibits, which, when signed by University, shall establish the date of Substantial Completion and the responsibilities of University and Design Builder for security, maintenance, utilities, insurance, and damage to the Construction Work. The University's Representative will prepare and furnish to the Design Builder a comprehensive "punch list" of items to be completed or corrected prior to Final Completion.

9.7.4 Unless otherwise provided in the Certificate of Substantial Completion, the Guarantee To Repair Period for the Work covered by the Certificate of Substantial Completion, shall commence on the date of Substantial Completion of the Construction Work except that Substantial Completion shall not commence the Guarantee to Repair Period for any equipment or systems that:

.1 Are not operational (equipment or systems shall not be considered operational if they cannot be used the intended service; or

.2 Are not accepted by the University.

The Guarantee To Repair Period for equipment or systems which become fully operational and accepted subsequent to Substantial Completion will begin on the date of their written acceptance by University.

9.7.5 The daily rate included in the Agreement and specifically identified as the rate to be paid to Design Builder for Compensable Delays shall not apply to any delays occurring after the Work is substantially completed.

9.8 **FINAL COMPLETION, FINAL PAYMENT, AND RELEASE OF RETENTION**

9.8.1 Upon receipt of notice from Design Builder that the Work is ready for final inspection, University's Representative will make such inspection. Final Completion shall be when University's Representative determines that the Work is fully completed and in accordance with the Contract Documents, including without limitation, satisfaction of all "punch list" items, and determines that a Certificate of Occupancy has been issued by the University's Building Official. University will file a Notice of Completion within 15 days after Final Completion. After receipt of the final Application For Payment, if University's Representative determines that Final Completion has occurred, University's Representative will issue the final Certificate For Payment.

9.8.2 Final payment and retention shall be released to Design Builder, as set forth in Article 9.8.3, after:

.1 Design Builder submits the final Application For Payment and all submittals required in accordance with Article 9.3;

.2 Design Builder submits all guarantees and warranties procured by Design Builder from Subcontractors, all operating manuals for equipment installed in the Project, as-built documents, and all other submittals required by the Contract Documents;

.3 Design Builder submits the Final Distribution of Contract Dollars in the form contained in the Exhibits; and

.4 University's Representative issues the final Certificate For Payment.

At its sole discretion, after Final Completion, University may waive the requirement that Design Builder submit a final Application For Payment before making final payment and/or release of retention to Design Builder.

9.8.3 Final payment shall be paid not more than 10 days after University's Representative issues the final Certificate For Payment. Retention shall be released to Design Builder 35 days after the filing of the Notice of Completion.

9.8.4 Acceptance of final payment by Design Builder shall constitute a waiver of all claims, except claims for retention and claims previously made in writing and identified by Design Builder as unsettled at the time of the final Application For Payment.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 Design Builder shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 Design Builder shall take adequate precautions for safety of and shall provide adequate protection to prevent damage, injury, or loss to the following:

.1 Employees involved in the Construction Work and other persons who may be affected thereby.

.2 The Construction Work in place and materials and equipment to be incorporated therein, whether in storage on or off the Project site, under care, custody, or control of Design Builder or Subcontractors.

.3 Other property at the Project site and adjoining property.

10.2.2 Design Builder shall erect and maintain, as required by existing conditions and performance of the Work, adequate safeguards for safety and protection, including providing adequate lighting and ventilation, posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

10.2.3 When use or storage of explosives, other hazardous materials, equipment, or unusual methods are necessary for execution of the Construction Work, Design Builder shall exercise the utmost care and carry on such activities only under the supervision of properly qualified personnel.

10.2.4 Design Builder shall designate a responsible member of Design Builder's organization at the Project site whose duty shall be the prevention of accidents. That person shall be the Superintendent, unless otherwise designated by Design Builder in writing to University and University's Representative.

10.2.5 Design Builder shall not load, or permit any part of the Construction Work or the Project site to be loaded, so as to endanger the safety of persons or property.

10.3 EMERGENCIES

10.3.1 In an emergency affecting the safety of persons or property, Design Builder shall act to prevent or minimize damage, injury, or loss. Design Builder shall promptly notify University's Representative, which notice may be oral followed by written confirmation, of the occurrence of such an emergency and Design Builder's action.

ARTICLE 11

INSURANCE AND BONDS

11.1 DESIGN BUILDER'S INSURANCE

11.1.1 Design Builder shall, at its expense, purchase and maintain in full force and effect such insurance as will protect itself and University from claims, such as for bodily injury, wrongful death, and property damage, which may arise out of or result from the Work required by the Contract Documents, whether such Work is done by Design Builder, by any Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The amounts of such insurance and any additional insurance requirements are specified in the Supplementary Conditions. See Article 3.27 of the General Conditions regarding the scope and extent of Design Builder’s liability for repair of damaged Work.

11.1.2 The following policies and coverage shall be furnished by Design Builder:

.1 COMMERCIAL FORM GENERAL LIABILITY INSURANCE covering all Work done by or on behalf of Design Builder and providing insurance for bodily injury, wrongful death, personal injury, property damage, and contractual liability. Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limit shall apply separately to

Work required of Design Builder by these Contract Documents. However, if the insurance under this Article 11.1.2.1 is written on a claims-made form, coverage shall survive for a period of not less than 3 years following termination of this Contract. Coverage shall provide for a retroactive date of placement coinciding with the effective date of this Contract.

.2 BUSINESS AUTOMOBILE LIABILITY INSURANCE on an "Occurrence" form covering owned, hired, leased, and non-owned automobiles used by or on behalf of Design Builder and providing insurance for bodily injury and property damage.

.3 WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE as required by Federal and State of California law. Design Builder shall also require all of its Subcontractors to maintain this insurance coverage.

.4 PROFESSIONAL LIABILITY INSURANCE to insure its activities in connection with this Contract and shall obtain, keep in force, and maintain as required by the Supplementary Conditions. However, if the insurance under this Article 11.1.2.4 is written on a claims-made basis, it shall be maintained continuously for a period no less than three (3) years following termination of this Contract or Final Completion, whichever occurs later. The insurance shall have a retroactive date of placement prior to or coinciding with the date services are first provided that are governed by the terms of this Contract and shall include, without limitation coverage for professional services as called for in this Contract.

11.1.3 The coverages required under this Article 11 shall not in any way limit the liability of Design Builder.

11.1.4 Certificates of Insurance, as evidence of the insurance required by these Contract Documents and on the form contained in the Exhibits, shall be submitted by Design Builder to University. The Certificates of Insurance shall provide for no cancellation or modification of coverage without prior written notice to University, in accordance with policy provisions.

11.1.5 In the event Design Builder does not comply with these insurance requirements, University may, at its option, provide insurance coverage to protect University; and the cost of such insurance shall be paid by Design Builder and may be deducted from the Contract Sum.

11.1.6 Design Builder's insurance as required by Article 11.1.2 above, shall, by endorsement to the policies and the Certificates of Insurance, include the following:

.1 The Regents of the University of California, The University of California, University, and each of their Representatives, consultants, officers, agents, employees, and each of their Representative's consultants, regardless of whether or not identified in the Contract Documents or to the Contractor in writing, will be included as additional insureds on the Contractor's General Liability insurance for and relating to the Work to be performed by the Contractor and Subcontractors. Additional Insured provision or endorsement shall be at least as broad as the CG 20 10 04 13 in combination with the CG 20 37 04 13 (or earlier versions of CG 20 10 and CG 20 37 or Form B - CG 20 10 11 85 by itself), as published by Insurance Services Offices (ISO) and shall be included with Certificates of Insurance. The additional insured requirement shall not apply to Worker's Compensation and Employer's Liability insurance.

Further, the amount of insurance available to the University shall be for the full amount of the loss up to the available policy limits and shall not be limited to any minimum requirements stated in the Contract Documents.

.2 A Severability of Interest Clause that shall be primary insurance as respects The Regents of the University of California, its officers, agents and employees. Any insurance or self-insurance maintained by The Regents of the University of California shall be excess of and non-contributory with this insurance. The provision shall state that, "The term 'insured' is hereby used severally and not collectively, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurers' liability."

.3 A Cross Liability Clause stating that, "In the event of claims being made under any of the coverages of the policies referred to herein by one or more insureds hereunder for which another insured hereunder may be liable, then the policies shall cover such insureds against whom a claim is made or may be made in the same manner as if separate policies had been issued to each insured hereunder. Nothing contained herein, however, shall operate to increase the insurers' limits of liability as set forth in the insuring agreements."

.4 University, University's consultants, University's Representative, and University's Representative's consultants will not by reason of their inclusion as insureds incur liability to the insurance carriers for payment of premiums for such insurance.

.5 Coverage provided is primary and is not in excess of or contributing with any insurance or self-insurance maintained by University, University's consultants, University's Representative, and University's Representative's consultants. This provision, however, shall only apply as per the stipulations of Article 11.1.6.1 above.

.6 The Professional Liability insurance policy shall include Contractual Liability Coverage or endorsements to the insurance policies for Contractual Liability Coverage for liability that would exist in the absence of the contract.

11.1.7 The form and substance of all insurance policies required to be obtained by Design Builder shall be subject to approval by University. All policies required by above Articles 11.1.2.1, 11.1.2.2, 11.1.2.3 and 11.1.2.4 shall be issued by companies with ratings and financial classifications as specified in the Supplementary Conditions.

11.1.8 Design Builder shall, by mutual agreement with University and at University's cost, furnish any additional insurance as may be required by University. Design Builder shall provide Certificates of Insurance evidencing such additional insurance.

11.1.9 The Certificate of Insurance shall show (1) all companies affording coverage, and (2) the name of the insured exactly in the manner as shown on the Price Proposal Form. The name of the insured must be the name under which the entity is licensed by the Design Builders State License Board.

11.1.10 If insurance company refuses to use the Certificate of Insurance form as contained in Exhibits, it must provide a Certificate of Insurance evidencing compliance with this Article and Special Provisions 1 and 2 on the Certificate of Insurance Exhibit by including an endorsement to its form covering Special Provisions 1 and 2 exactly as these provisions appear on the Certificate of Insurance Exhibit.

11.1.11 At the request of University, Design Builder shall submit to University copies of the policies obtained by Design Builder.

11.2 BUILDER'S RISK PROPERTY INSURANCE

11.2.1 If and only if the Lump Sum Base Proposal exceeds $300,000 at the time of award of Phase 3 of the Contract, University will provide its standard builder's risk property insurance, subject to the deductibles, terms and conditions, exclusions, and limitations as contained in the provisions of the policy. A copy of the University's standard builder's risk property insurance policy is available at the University's Facility office. In addition, a summary of the provisions of the policy is included as an Exhibit to the Contract. Design Builder agrees that the University’s provision of its standard builder’s risk property insurance policy meets the University’s obligation to provide builder’s risk property insurance under the Contract and, in the event of a conflict between the provisions of the policy and any summary or description of the provisions contained herein or otherwise, the provisions of the policy shall control and shall be conclusively presumed to fulfill the University’s obligation to provide such insurance. The proceeds under such insurance policies taken out by University insuring the Construction Work and materials will be payable to University and Design Builder as their respective interests, from time to time, may appear. Design Builder shall be responsible for the deductible amount in the event of a loss. In addition, nothing in this Article 11.2 shall be construed to relieve Design Builder of full responsibility for loss of or damage to materials not incorporated in the Construction Work, and for Design Builder's tools and equipment used to perform the Work, whether on the Project site or elsewhere, or to relieve Design Builder of its responsibilities referred to under this Article 11. “Materials incorporated in the Work,” as used in this Article 11.2, shall mean materials furnished while in transit to, stored at, or in permanent place at the Project site.

11.2.2 Insurance policies referred to under this Article 11.2 shall:

.1 Include a provision that the policies are primary and do not participate with, nor are excess over, any other valid collectible insurance carried by Design Builder.

.2 Include a waiver of subrogation against Design Builder, its agents, and employees.

11.2.3 Builder's risk insurance coverage under this Article 11.2 will expire on the date of Final Completion recited in a Notice of Completion filed pursuant to Article 9.8.1. Should a Notice of Completion be filed more than 10 days after the date of Final Completion, the date of Final Completion recited in the Notice of Completion will govern.

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 Design Builder shall furnish bonds covering the faithful performance of the Contract (Performance Bond) and payment of obligations arising thereunder (Payment Bond) on the forms contained in the Exhibits.

11.3.2 The Payment Bond and Performance Bond shall each be in the amount of the Lump Sum Base Proposal.

11.3.3 The Payment Bond and Performance Bond shall be in effect on the date the Contract is signed by University.

11.3.4 Design Builder shall promptly furnish such additional security as may be required by University to protect its interests and those interests of persons or firms supplying labor or materials to the Work. Design Builder shall furnish supplemental Payment and Performance Bonds each in the amount of the current Contract Sum at the request of the University.

11.3.5 Surety companies used by Design Builder shall be, on the date the Contract is signed by University, listed in the latest published State of California, Department of Insurance list of "Insurers Admitted to Transact Surety Insurance in This State."

11.3.6 The premiums for the Payment Bond and Performance Bond shall be paid by Design Builder.

ARTICLE 12

UNCOVERING AND CORRECTION OF CONSTRUCTION WORK

12.1 UNCOVERING OF WORK

12.1.1 If a portion of the Construction Work is covered contrary to University's Representative's request or direction, or contrary to the requirements of the Contract Documents, it must, 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.

12.1.2 If a portion of the Construction Work has been covered, which is not required by the 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 Construction Work and it shall be uncovered and replaced by Design Builder. If such Construction Work is in accordance with the Contract Documents, the costs of uncovering and replacing the Construction Work shall be added to the Contract Sum by Change Order; and if the uncovering and replacing of the Construction Work extends the Contract Time, an appropriate adjustment of the Contract Time shall be made by Change Order. If such Construction Work is not in accordance with the Contract Documents, Design Builder shall pay such costs and shall not be entitled to an adjustment of the Contract Time or the Contract Sum.

12.2 CORRECTION OF DEFECTIVE WORK AND GUARANTEE TO REPAIR PERIOD

12.2.1 The term "Guarantee To Repair Period" means a period of 2 years, unless a longer period of time is specified, commencing as follows:

.1 For any Construction Work not described as incomplete in the Certificate of Substantial Completion, on the date of Substantial Completion.

.2 For space beneficially occupied or for separate systems fully utilized prior to Substantial Completion pursuant to Article 9.6 of the General Conditions, from the first date of such Beneficial Occupancy or actual use, as established in a Certificate of Beneficial Occupancy.

.3 For all Construction Work other than .1 or .2 above, from the date of Final Completion.

12.2.2 Design Builder shall (1) correct Defective Work that becomes apparent during the progress of the Work or during the Guarantee To Repair Period, and (2) replace, repair, or restore to University's satisfaction any other parts

of the Work and any other real or personal property which is damaged or destroyed as a result of Defective Work or the correction of Defective Work. Design Builder shall promptly commence such correction, replacement, repair, or restoration upon notice from University's Representative or University, but in no case later than 10 days after receipt of such notice; and Design Builder shall diligently and continuously prosecute such correction to completion. Design Builder shall bear all costs of such correction, replacement, repair, or restoration, and all losses resulting from such Defective Work, including additional testing, inspection, and compensation for University's Representative's services and expenses. Design Builder shall perform corrective Work at such times that are acceptable to University and in such a manner as to avoid, to the extent practicable, disruption to University's activities.

12.2.3 If immediate correction of Defective Work is required for life safety or the protection of property and is performed by University or Separate Contractors, Design Builder shall pay to University all reasonable costs of correcting such Defective Work. Design Builder shall replace, repair, or restore to University's satisfaction any other parts of the Construction Work and any other real or personal property which is damaged or destroyed as a result of such Defective Work or the correction of such Defective Work.

12.2.4 Design Builder shall remove from the Project site portions of the Construction Work and materials which are not in accordance with the Contract Documents and which are neither corrected by Design Builder nor accepted by University.

12.2.5 If Design Builder fails to commence correction of Defective Work within 10 days after notice from University or University's Representative or fails to diligently prosecute such correction to completion, University may correct the Defective Work in accordance with Article 2.4 of the General Conditions; and, in addition, University may remove the Defective Work and store salvageable materials and equipment at Design Builder's expense.

12.2.6 If Design Builder fails to pay the costs of such removal and storage as required by above Articles 12.2.4 and 12.2.5 within 10 days after written demand, University may, without prejudice to other remedies, sell such materials at auction or at private sale, or otherwise dispose of such material. Design Builder shall be entitled to the proceeds of such sale, if any, in excess of the costs and damages for which Design Builder is liable to University, including compensation for University's Representative's services and expenses. If such proceeds of sale do not cover costs and damages for which Design Builder is liable to University, the Contract Sum shall be reduced by such deficiency. If there are no remaining payments due Design Builder or the remaining payments are insufficient to cover such deficiency, Design Builder shall promptly pay the difference to University.

12.2.7 Design Builder's obligations under this Article 12 are in addition to, and not in limitation of, its warranty under Article 3.4 of the General Conditions or any other obligation of Design Builder under the Contract Documents. Enforcement of Design Builder's express warranties and guarantees to repair contained in the Contract Documents shall be in addition to and not in limitation of any other rights or remedies University may have under the Contract Documents or at law or in equity for Defective Work. Nothing contained in this Article 12 shall be construed to establish a period of limitation with respect to other obligations of Design Builder under the Contract Documents. Establishment of the Guarantee To Repair Period relates only to the specific obligation of Design Builder to correct the Work and in no way limits either Design Builder's liability for Defective Work or the time within which proceedings may be commenced to enforce Design Builder's obligations under the Contract Documents.

ARTICLE 13

TERMINATION OR SUSPENSION OF THE CONTRACT

13.1 TERMINATION BY DESIGN BUILDER

13.1.1 Subject to below Article 13.1.2, Design Builder shall have the right to terminate the Contract only upon the occurrence of one of the following:

.1 Provided that University has not commenced reasonable action to remove any order of a court within the 90 day period, the Work is stopped for 90 consecutive days, through no act or fault of Design Builder, any Subcontractor, or any employee or agent of Design Builder or any Subcontractor, due to an issuance of an order of a court or other public authority having jurisdiction or due to an act of government, such as a declaration of a national emergency making material unavailable.

.2 University fails to perform any material obligation under the Contract Documents and fails to cure such default within 30 days, or University has not commenced to cure such default within 30 days where such cure will require a reasonable period beyond 30 days and diligently prosecutes the same to completion, after receipt of notice from Design Builder stating the nature of such default(s).

.3 Repeated suspensions by University, other than such suspensions as are agreed to by Design Builder under Article 13.3 below, which constitute in the aggregate more than 20% of the Contract Time.

13.1.2 Upon the occurrence of one of the events listed in Article 13.1.1 above, Design Builder may, upon 10 days additional notice to University and University's Representative, and provided that the condition giving rise to Design Builder's right to terminate is continuing, terminate the Contract.

13.1.3 Upon termination by Design Builder, University will pay to Design Builder the sum determined by Article 13.4.4 of the General Conditions. Such payment will be the sole and exclusive remedy to which Design Builder is entitled in the event of termination of the Contract by Design Builder pursuant to this Article 13.1; and Design Builder will be entitled to no other compensation or damages and expressly waives the same.

13.2 TERMINATION BY UNIVERSITY FOR CAUSE

13.2.1 University will have the right to terminate the Contract for cause at any time after the occurrence of any of the following events:

.1 Design Builder becomes insolvent or files for relief under the bankruptcy laws of the United States.

.2 Design Builder makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.

.3 A receiver is appointed to take charge of Design Builder's property.

.4 The commencement or completion of any Work activity on the critical path is more than 30 days behind the date set forth in the Contract Schedule for such Work activity as a result of an Unexcusable Delay. For a Contract with a Contract Time of less than 300 days, the 30-day period shall be reduced to the number of days commensurate with 10% of the Contract Time.

.5 Design Builder abandons the Work.

13.2.2 Upon the occurrence of any of the following events, University will have the right to terminate the Contract for cause if Design Builder fails to promptly commence to cure such default and diligently prosecute such cure within 5 days after notice from University, or within such longer period of time as is reasonably necessary to complete such cure:

.1 Design Builder persistently or repeatedly refuses or fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.

.2 Design Builder fails to make prompt payment of amounts properly due Subcontractors after receiving payment from University.

.3 Design Builder disregards Applicable Code Requirements.

.4 Design Builder persistently or materially fails to execute the Work in accordance with the Contract Documents.

.5 Design Builder is in default of any other material obligation under the Contract Documents.

.6 Design Builder persistently or materially fails to comply with applicable safety requirements.

13.2.3 Upon any of the occurrences referred to in Articles 13.2.1 and 13.2.2 above, University may, at its election and by notice to Design Builder, terminate the Contract and take possession of the Project site and all materials, supplies, equipment, tools, and construction equipment and machinery thereon owned by Design Builder; accept the assignment of any or all of the subcontracts; and then complete the Work by any method University may deem expedient. If requested by University, Design Builder shall remove any part or all of Design Builder's materials, supplies, equipment, tools, and construction equipment and machinery from the Project site within 7 days of such request; and if Design Builder fails to do so, University may remove or store, and after 90 days sell, any of the same at Design Builder's expense.

13.2.4 If the Contract is terminated by University as provided in this Article 13.2, Design Builder shall not be entitled to receive any further payment until the expiration of 35 days after Final Completion and acceptance of all Work by University.

13.2.5 If the unpaid balance of the Contract Sum exceeds the cost of completing the Work, including all additional costs and expenses made necessary thereby, including costs for University staff time, plus all losses sustained, including any liquidated damages provided under the Contract Documents, such excess shall be paid to Design Builder. If such costs, expenses, losses, and liquidated damages exceed the unpaid balance of the Contract Sum, Design Builder shall pay such excess to University.

13.2.6 No termination or action taken by University after termination shall prejudice any other rights or remedies of University provided by law or by the Contract Documents upon such termination; and University may proceed against Design Builder to recover all losses suffered by University.

13.3 SUSPENSION BY UNIVERSITY FOR CONVENIENCE

13.3.1 University may, at any time and from time to time, without cause, order Design Builder, in writing, to suspend, delay, or interrupt the Work in whole or in part for such period of time, up to 90 days, as University may determine, with such period of suspension to be computed from the date of delivery of the written order. Such order shall be specifically identified as a "Suspension Order" under this Article 13.3. The Work may be stopped for such further period as the parties may agree. Upon receipt of a Suspension Order, Design Builder shall, at University's expense, comply with its terms and take all reasonable steps to minimize costs allocable to the Work covered by the Suspension Order during the period of Work stoppage. Within 90 days after the issuance of the Suspension Order, or such extension to that period as is agreed upon by Design Builder and University, University shall either cancel the Suspension Order or delete the Work covered by such Suspension Order by issuing a Change Order.

13.3.2 If a Suspension Order is canceled or expires, Design Builder shall continue with the Work. A Change Order will be issued to cover any adjustments of the Contract Sum or the Contract Time necessarily caused by such suspension. Any Claim by Design Builder for an adjustment of the Contract Sum or the Contract Time shall be made within 21 days after the end of the Work suspension. Design Builder agrees that submission of its claim within said 21 days is an express condition precedent to its right to Arbitrate or Litigate such a claim.

13.3.3 The provisions of this Article 13.3 shall not apply if a Suspension Order is not issued by University. A Suspension Order shall not be required to stop the Work as permitted or required under any other provision of the Contract Documents.

13.4 TERMINATION BY UNIVERSITY FOR CONVENIENCE

13.4.1 University may, at its option, terminate this Contract, in whole or from time to time in part, at any time by giving notice to Design Builder. Upon such termination, Design Builder agrees to waive any claims for damages, including loss of anticipated profits, on account thereof; and, as the sole right and remedy of Design Builder, University shall pay Design Builder in accordance with Article 13.4.4 below.

13.4.2 Upon receipt of notice of termination under this Article 13.4, Design Builder shall, unless the notice directs otherwise, do the following:

.1 Immediately discontinue the Work to the extent specified in the notice.

.2 Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of such portion of the Work as is not discontinued.

.3 Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.

.4 Thereafter, do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment on the Project site or in transit thereto.

13.4.3 Upon such termination, the obligations of the Contract shall continue as to portions of the Work already performed and, subject to Design Builder's obligations under Article 13.4.2 above, as to bona fide obligations assumed by Design Builder prior to the date of termination.

13.4.4 Upon such termination, University shall pay to Design Builder the sum of the following:

.1 The amount of the Contract Sum allocable to the portion of the Work properly performed by Design Builder as of the date of termination, less sums previously paid to Design Builder.

.2 incorporation in the Work.

.3 Plus any proven losses with respect to materials and equipment directly resulting from such termination.

.4 Plus reasonable demobilization costs.

.5 Plus reasonable costs of preparing a statement of the aforesaid costs, expenses, and losses in connection with such termination.

The above payment shall be the sole and exclusive remedy to which Design Builder is entitled in the event of termination of the Contract by University pursuant to this Article 13.4; and Design Builder will be entitled to no other compensation or damages and expressly waives same.

ARTICLE 14

STATUTORY AND OTHER REQUIREMENTS

14.1 NONDISCRIMINATION

14.1.1 For purposes of this Article 14.1, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.1.2 Design Builder shall comply and shall ensure that all Subcontractors comply with Sections 12900 through 12996 of the State of California Government Code.

14.1.3 Design Builder agrees as follows during the performance of the Work:

.1 Design Builder shall provide equal treatment to, and shall not willfully discriminate against or allow harassment of any employee or applicant for employment on the basis of: race; color; religion; sex; age; ancestry; national origin; sexual orientation; physical or mental disability; veteran's status; medical condition (as defined in Section 12926 of the State of California Government Code and including cancer-related medical conditions and or genetic characteristics); genetic information (as defined in the Genetic Information Nondiscrimination Act of 2008 and including family medical history); marital status; gender identity, pregnancy, or citizenship (within the limits imposed by law or University's policy) or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994). Design Builder will also take affirmative action to ensure that any such employee or applicant for employment is not discriminated against on any of the bases identified above. Such equal treatment shall apply, but not be limited to the following: employment; upgrade; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Design Builder also agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The Design Builder will, in all solicitations or advertisements for employees placed by or on behalf of the Design Builder, state that qualified applicants will receive consideration for employment without regard to: race; color; religion; sex; age; ancestry; national origin; sexual orientation; physical or mental disability; veteran's status; medical condition (as defined in Section 12926 of the State of California Government Code and including cancer-related medical conditions and or genetic characteristics); genetic information (as defined in the Genetic Information Nondiscrimination Act of 2008 and including family medical history); marital status; gender identity, pregnancy, or citizenship (within the limits imposed by law or University's policy) or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994). For purposes of this provision: (1) "Pregnancy" includes pregnancy, childbirth, and medical conditions related to pregnancy and childbirth; and (2) "Service in the uniformed services" includes membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services.

.2 Design Builder and all Subcontractors will permit access to their records of employment, employment advertisements, application forms, and other pertinent data and records by University or any

appropriate agency of the State of California designated by University for the purposes of investigation to ascertain compliance with this Article 14.1. The outcome of the investigation may result in the following:

.1 A finding of willful violation of the provisions of this Contract or of the Fair Employment Practices Act may be regarded by University as (1) a basis for determining that Design Builder is not a "responsible bidder" as to future contracts for which such Design Builder may submit bids, or (2) a basis for refusing to accept or consider the bids of Design Builder for future contracts.

.2 University may deem a finding of willful violation of the Fair Employment Practices Act to have occurred upon receipt of written notice from the Fair Employment Practices Commission that it has (1) investigated and determined that Design Builder has violated the Fair Employment Practices Act, and (2) issued an order under the State of California Government Code Section 12970 or obtained an injunction under Government Code Section 12973.

.3 Upon receipt of such written notice from the Fair Employment Practices Commission, University may notify Design Builder that, unless it demonstrates to the satisfaction of University within a stated period that the violation has been corrected, Design Builder's Proposals on future projects will not be considered.

.4 Design Builder agrees that, should University determine that Design Builder has not complied with this Article 14.1, Design Builder shall forfeit to University, as a penalty, for each day or portion thereof, for each person who was denied employment as a result of such non-compliance, the penalties provided in Article 14.2 below for violation of prevailing wage rates. Such penalty amounts may be recovered from Design Builder; and University may deduct any such penalty amounts from the Contract Sum.

.5 Nothing contained in this Article 14.1 shall be construed in any manner so as to prevent University from pursuing any other remedies that may be available at law.

.6 Design Builder shall meet the following standards for compliance and provide University with satisfactory evidence of such compliance upon University's request, which shall be evaluated in each case by University:

.1 Design Builder shall notify its Superintendent and other supervisory personnel of the nondiscrimination requirements of the Contract Documents and their responsibilities thereto.

.2 Design Builder shall notify all sources of employee referrals (including unions, employment agencies, and the State of California Department of Employment) of the nondiscrimination requirements of the Contract Documents by sending to such sources and by posting the Notice of Equal Employment Opportunity (EEO).

.3 Design Builder or its representative shall, through all unions with whom it may have agreements, develop agreements that (1) define responsibilities for nondiscrimination in hiring, referrals, upgrading, and training and (2) implement an affirmative nondiscrimination program, in terms of the unions' specific areas of skill and geography, such that qualified minority women, non-minority women, and minority men shall be available and given an equal opportunity for employment.

.4 Design Builder shall notify University of opposition to the nondiscrimination requirements of the Contract Documents by individuals, firms, or organizations during the term of the Contract.

.7 Design Builder shall include the provisions of the foregoing Articles 14.1.3.2.1 through 14.1.3.2.6 in all subcontracts with Subcontractors, so that such provisions will be binding upon each such Subcontractor.

14.2 PREVAILING WAGE RATES

14.2.1 For purposes of this Article 14.2, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.2.2 Design Builder shall comply and shall ensure that all Subcontractors comply with prevailing wage law pursuant to the State of California Labor Code, including but not limited to Sections 1770, 1771, 1771.1, 1772, 1773,

1773.1, 1774, and 1775, 1776, 1777.5, and 1777.6 of the State of California Labor Code. Compliance with these sections is required by this Contract. The Work under this Contract is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations.

14.2.3 The State of California Department of Industrial Relations has ascertained the general prevailing *per diem* wage rates in the locality in which the Construction Work is to be performed for each craft, classification, or type of worker required to perform the Work. A copy of the general prevailing *per diem* wage rates will be on file at University's principal facility office and will be made available to any interested party upon request. Design Builder shall post a copy of the general prevailing per diem wage rates as well as job site notices as prescribed by regulation at the job site. By this reference, such schedule is made part of the Contract Documents. Design Builder shall pay not less than the prevailing wage rates, as specified in the schedule and any amendments thereto, to all workers employed by Design Builder in the execution of the Construction Work. Design Builder shall cause all subcontracts to include the provision that all Subcontractors shall pay not less than the prevailing rates to all workers employed by such Subcontractors in the execution of the Construction Work. Design Builder shall forfeit to University, as a penalty, not more than $200 for each calendar day or portion thereof for each worker that is paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for any portion of the Work done by Design Builder or any Subcontractor. The amount of this penalty shall be determined pursuant to applicable law. Such forfeiture amounts may be deducted from the Contract Sum or sought directly from the surety under its Performance Bond if there are insufficient funds remaining in the Contract Sum. Design Builder shall also pay to any worker who was paid less than the prevailing wage rate for the work or craft for which the worker was employed for any portion of the Construction Work, for each day, or portion thereof, for which the worker was paid less than the specified prevailing *per diem* wage rate, an amount equal to the difference between the specified prevailing *per diem* wage rate and the amount which was paid to the worker. Review of any civil wage and penalty assessment shall be made pursuant to section 1742 of the California Labor Code.

14.3 PAYROLL RECORDS

14.3.1 For purposes of this Article 14.3, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.3.2 Design Builder and all Subcontractors shall keep an accurate payroll record, showing the name, address, social security number, job classification, straight time and overtime hours worked each day and week, and the actual *per diem* wages paid to each journeyworker, apprentice, worker, or other employee employed in connection with the Construction Work. All payroll records shall be certified as being true and correct by Design Builder or Subcontractors keeping such records; and the payroll records shall be available for inspection at all reasonable hours at the principal office of Design Builder on the following basis:

.1 A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or the employee's authorized representative on request.

.2 A certified copy of all payroll records shall be made available for inspection upon request to University, the State of California Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the State of California Division of Industrial Relations.

.3 A certified copy of all payroll records shall be made available upon request by the public for inspection or copies thereof made; provided, however, that the request by the public shall be made to either University, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. The public shall not be given access to such records at the principal offices of Design Builder or Subcontractors. Any copy of the records made available for inspection as copies and furnished upon request to the public or any public agency by University shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Design Builder awarded the Contract or performing the Contract shall not be marked or obliterated.

14.3.3 Design Builder shall file a certified copy of the payroll records with the entity that requested the records within 10 days after receipt of a written request. Design Builder shall inform University of the location of such payroll records for the Project, including the street address, city, and county; and Design Builder shall, within 5 working days, provide notice of change of location of such records. In the event of noncompliance with the requirements of this Article 14.3 or with the State of California Labor Code Section 1776, Design Builder shall have 10 days in which to comply following receipt of notice specifying in what respects Design Builder must comply. Should noncompliance still be evident after the 10- day period, Design Builder shall forfeit to University, as a penalty, $100 for each day, or portion thereof, for each worker, until strict compliance is accomplished. Such forfeiture amounts may be deducted from the Contract Sum.

14.4 APPRENTICES

14.4.1 For purposes of this Article 14.4, the term Subcontractor shall not include suppliers, manufacturers, and distributors.

14.4.2 Only apprentices, as defined in the State of California Labor Code Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4, Division 3, of the State of California Labor Code, are eligible to be employed by Design Builder and Subcontractors as apprentices. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and written apprentice agreements under which the apprentice is training and in accordance with prevailing wage law pursuant to the Labor Code, including but not limited to Section 1777.5. The Design Builder bears responsibility for compliance with this section for all apprenticeable occupations.

14.4.3 Every apprentice shall be paid the standard wage to apprentices, under the regulations of the craft or trade at which the apprentice is employed, and shall be employed only at the Construction Work in the craft or trade to which the apprentice is indentured.

14.4.4 When Design Builder or Subcontractors employ workers in any apprenticeship craft or trade on the Work, Design Builder or Subcontractors shall 1) send contract award information to the applicable joint apprenticeship committee that can supply apprentices to the site of the public work, and 2) apply to the joint apprenticeship committee, which administers the apprenticeship standards of the craft or trade in the area of the Project site, for a certificate approving Design Builder or Subcontractors under the apprenticeship standards for the employment and training of apprentices in the area of the Project site. The committee will issue a certificate fixing the number of apprentices or the ratio of apprentices to journeypersons who shall be employed in the craft or trade on the Construction Work. The ratio will not exceed that stipulated in the apprenticeship standards under which the joint apprenticeship committee operates; but in no case shall the ratio be less than1 hour of **apprentice** work for every 5 hours of journeyperson work, except as permitted by law. Design Builder or Subcontractors shall, upon the issuance of the approval certificate in each such craft or trade, employ the number of apprentices, or the ratio of apprentices to journeypersons fixed in the certificate issued by the joint apprenticeship committee, or present an exemption certificate issued by the Division of Apprenticeship Standards.

14.4.5 “Apprenticeship craft or trade,” as used in this Article 14.4, shall mean a craft or trade determined as an apprenticeship occupation in accordance with rules and regulations prescribed by the Apprenticeship Council.

14.4.6 If Design Builder or Subcontractors employ journeyworkers or apprentices in any apprenticeship craft or trade in the area of the Project site, and there exists a fund for assisting to allay the cost of the apprenticeship program in the trade or craft, to which fund or funds other contractors in the area of the Project site are contributing, Design Builder and Subcontractors shall contribute to the fund or funds in each craft or trade in which they employ journeyworkers or apprentices on the Construction Work in the same amount or upon the same basis and in the same manner done by the other contractors. Design Builder may include the amount of such contributions in computing its Proposal for the Contract; but if Design Builder fails to do so, it shall not be entitled to any additional compensation therefore from University.

14.4.7 In the event Design Builder willfully fails to comply with this Article 14.4, it will be considered in violation of the requirements of the Contract.

14.4.8 Nothing contained herein shall be considered or interpreted as prohibiting or preventing the hiring by Design Builder or Subcontractors of journeyworker trainees who may receive on-the-job training to enable them to achieve journeyworker status in any craft or trade under standards other than those set forth for apprentices.

14.5 CONSTRUCTION WORK-DAY

14.5.1 Design Builder shall not permit any worker to labor more than 8 hours during any 1 day or more than 40 hours during any 1 calendar week, except as permitted by law and in such cases only upon such conditions as are provided by law. Design Builder shall forfeit to University, as a penalty, $25 for each worker employed in the execution of this Contract by Design Builder, or any Subcontractor, for each day during which such worker is required or permitted to work more than 8 hours in any 1 day and 40 hours in any 1 calendar week in violation of the terms of this Article 14.5 or in violation of the provisions of any law of the State of California. Such forfeiture amounts may be deducted from the Contract Sum. Design Builder and each Subcontractor shall keep, or cause to be kept, an accurate record showing the actual hours worked each day and each calendar week by each worker employed on the Project, which record shall be kept open at all reasonable hours to the inspection of University, its officers and agents, and to the inspection of the appropriate enforcement agency of the State of California.

14.6 PATIENT HEALTH INFORMATION (if applicable)

Design Builder acknowledges that its employees, agents, subcontractors, consultants and others acting on its behalf may come into contact with Patient Health Information ("PHI") while performing work at the Project Site. This contact is most likely rare and brief (e.g. walking through a clinic where patient files may be visible, overhearing conversations between physicians while working or touring a hospital, noticing a relative or acquaintance receiving treatment in a University facility, etc.). Design Builder shall immediately notify University Representative of any such contact. Any and all forms of PHI should not be examined closer, copied, photographed, recorded in any manner, distributed or shared. Design Builder will adopt procedures to ensure that its employees, agents and subcontractors refrain from such activity. If Design Builder, its employees, agents or subcontractors do further examine, copy, photograph, record in any manner, distribute or share this information, Design Builder will report such actions immediately to the University Representative. Design Builder will immediately take all steps necessary to stop any such actions and will ensure that no further violations of this contractual responsibility will occur. Design Builder will report to University Representative within five (5) days after Design Builder gives University Representative notice of the event/action of the steps taken to prevent future occurrences.

ARTICLE 15

MISCELLANEOUS PROVISIONS

15.1 GOVERNING LAW

15.1.1 This Contract shall be governed by the laws of the State of California.

15.2 SUCCESSORS AND ASSIGNS

15.2.1 University and Design Builder respectively bind themselves and their successors, permitted assigns, and legal representatives to the other party and to the successors, permitted assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract, in whole or in part, without prior written consent of the other party. Notwithstanding any such assignment, each of the original contracting parties shall remain legally responsible for all of its obligations under the Contract.

15.3 RIGHTS AND REMEDIES

15.3.1 All University's rights and remedies under the Contract Documents will be cumulative and in addition to, and not in limitation of, all other rights and remedies of University under the Contract Documents or otherwise available at law or in equity.

15.3.2 No action or failure to act by University or University's Representative will constitute a waiver of a right afforded them under the Contract, nor will such action or failure to act constitute approval of or acquiescence in a condition or breach thereunder, except as may be specifically agreed in writing. No waiver by University or University's Representative of any condition, breach or default will constitute a waiver of any other condition, breach or default; nor will any such waiver constitute a continuing waiver.

15.3.3 No provision contained in the Contract Documents shall create or give to third parties any claim or right of action against University, University's Representative, or Design Builder.

15.4 SURVIVAL

15.4.1 The provisions of the Contract which by their nature survive termination of the Contract or Final Completion, including all warranties, indemnities, payment obligations, and University's right to audit Design Builder's books and records, shall remain in full force and effect after Final Completion or any termination of the Contract.

15.5 COMPLETE AGREEMENT

15.5.1 The Contract Documents constitute the full and complete understanding of the parties and supersede any previous agreements or understandings, oral or written, with respect to the subject matter hereof. The Contract may be modified only by a written instrument signed by both parties or as provided in Article 7 of the General Conditions.

15.6 SEVERABILITY OF PROVISIONS

15.6.1 If any one or more of the provisions contained in the Contract Documents should be invalid, illegal, or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

15.7 UNIVERSITY'S RIGHT TO AUDIT

15.7.1 University and entities and agencies designated by University will have access to and the right to audit and the right to copy at University's cost all of Design Builder's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Design Builder shall preserve all such records and other items during the performance of the Contract and for a period of at least 3 years after Final Completion.

15.8 METHODS OF DELIVERY FOR SPECIFIED DOCUMENTS

15.8.1 The following documents must be delivered in a manner specified in Article 15.8.2:

.1 Design Builder Notices of election to litigate or arbitrate;
.2 Written demand for an informal conference to meet and confer pursuant to Article 4.5;
.3 University's written statement identifying remaining disputes following informal conference pursuant to Article 4.6;
.4 Written demand for non-binding mediation pursuant to Article 4.6;
.5 Design Builder claims pursuant to Article 4.3;
.6 Design Builder notices of conditions pursuant to Articles 3.10.4, 3.24, or 3.25;
.7 University's notices of Design Builder's failure to perform and/or correct defective work pursuant to Articles 4.1.6, 12.2 and 13.2.3;
.8 University's notice to stop work pursuant to Article 2.3.1:
.9 Notices of termination or suspension pursuant to Article 13.

15.8.2 Delivery methods for documents specified in Article 15.8.1:

.1 By personal delivery.
.2 Sent by facsimile copy where receipt is confirmed.
.3 Sent by Express Mail, or another method of delivery providing for overnight delivery where receipt is confirmed.
.4 Sent by registered or certified mail, postage prepaid, return receipt requested.

15.8.3 The documents identified in Article 15.8.1 shall only be effective if delivered in the manner specified in Article 15.8.2. Subject to the forgoing, such documents shall be deemed given and received upon actual receipt in the case of all except registered or certified mail; and in the case of registered or certified mail, on the date shown on the return receipt or the date delivery during normal business hours was attempted. Delivery of the specified documents shall be made at the respective street addresses set forth in the Agreement. Such street addresses may be changed by notice given in accordance with this Article 15.8.

15.9 TIME OF THE ESSENCE

15.9.1 Time limits stated in the Contract Documents are of the essence of the Contract.

15.10 MUTUAL DUTY TO MITIGATE

15.10.1 University and Design Builder shall use all reasonable and economically practicable efforts to mitigate delays and damages to the Project and to one another with respect to the Project, regardless of the cause of such delay or damage.

15.11 UC FAIR WAGE

Contractor shall pay all persons providing construction services and/or any labor on site, including any University location, no less than the UC Fair Wage (defined as $13 per hour as of 10/1/15, $14 per hour as of 10/1/16, and $15 per hour as of 10/1/17) and shall comply with all applicable federal, state and local working condition requirements.

SUPPLEMENTARY CONDITIONS

1. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 1 – GENERAL PROVISIONS

The "Architect/Engineer of Record" as referred to in the General Conditions is:

_____ _____
(Name) *(License Number)*

2. MODIFICATIONS OF GENERAL CONDITIONS, ARTICLE 2 – UNIVERSITY

The following Subparagraph 2.1.1.1 is added to Article 2.1:

2.1.1.1 The University shall be responsible for payment of all Division of State Architect (DSA) plan review fees.

3. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 3 – DESIGN BUILDER

a. The following sentence is added to Subparagraph 3.11.1.2:

A reasonable number of Construction Document packages shall be **three (3)**.

b. The following subparagraph 3.27.3 is added:

Notwithstanding the Design Builder's financial liability for any damage or losses that may or may not be covered by the builder's risk property insurance provided hereunder, the Design Builder shall promptly repair and replace any Work or materials damaged or destroyed during the term of this Project and work to maintain or recover the project schedule. The Design Builder shall be responsible to protect the site and segregate all costs associated with any required corrective action, including costs to expedite material and work overtime as necessary to maintain the schedule. The Design Builder will cooperate with the University and the builder's risk carrier to the extent necessary to fully support the costs and expenses covered by the builder's risk policy.

4. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 8 – CONTRACT TIME

a. The following subparagraph 8.1.2 is added:

The Design Builder and its Subcontractors identified at the time of Proposal submittal shall participate in a mandatory preconstruction meeting conducted by the University's Representative to discuss federal and state labor law requirements applicable to the Contract.

b. Subparagraph 8.4.1.6.9: Rainy weather in excess of **3** days for Phase 3, Construction, will be granted a Contract Time extension pursuant to Article 8.4 of the General Conditions.

5. 6. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 11 – INSURANCE AND BONDS

a. Design Builder shall furnish and maintain insurance in the amounts below.

The insurance required by 11.1.2.1, 11.1.2.2 and 11.1.2.4 shall be (i) issued by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's) or (ii) guaranteed, under terms consented to by the University (such consent to not be unreasonably withheld), by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's). Such insurance shall be written for not less than the following:

COMMERCIAL FORM GENERAL LIABILITY INSURANCE – LIMITS OF LIABILITY	MINIMUM REQUIREMENT
Each Occurrence - Combined Single Limit for Bodily Injury and Property Damage:	$2,000,000
Products-Completed Operations Aggregate:	$2,000,000
Personal and Advertising Injury:	$2,000,000
General Aggregate:	$5,000,000

CONTRACTOR'S PROFESSIONAL LIABILITY – LIMITS OF LIABILITY	MINIMUM REQUIREMENT
Professional Liability	$3,000,000

BUSINESS AUTOMOBILE LIABILITY INSURANCE – LIMITS OF LIABILITY	MINIMUM REQUIREMENT
Each Accident - Combined Single Limit for Bodily Injury and Property Damage:	1,000,000

WORKERS' COMPENSATION – As required by Federal and State of California law

EMPLOYER'S LIABILITY – LIMITS OF LIABILITY	MINIMUM REQUIREMENT
Each Employee:	$1,000,000
Each Accident:	$1,000,000
Policy Limit:	$1,000,000

b. The following article is added to the General Conditions:

11.1.2.5 The Contractor shall obtain, either itself or through the applicable Subcontractor(s) performing Work involving hazardous materials, Contractor's Pollution Liability (CPL) insurance coverage for such Work AND an endorsement to either its CPL or Business Auto policies for transporting or hauling of hazardous materials. The insurance required by this paragraph 11.1.2.5 shall be (i) issued by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's) or (ii) guaranteed, under terms consented to by the University (such consent to not be unreasonably withheld), by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's). Such insurance shall be written for not less than the following and include the University as Additional Insured by endorsement:

CONTRACTOR'S POLLUTION LIABILITY – **Limits of Liability**	Minimum Requirement
Each Occurrence:	$ 1,000,000
Products – Completed Operations:	$ 1,000,000
General Aggregate:	$ 1,000,000

If coverage is provided on a Claims-Made form, Contractor shall evidence coverage to include a three (3)-year Extended Reporting Period beyond completion of such Work. Coverage must extend to Transportation and Hauling of hazardous materials. The University shall require a copy of the policy endorsement noting extension of Transportation coverage. If this extension of coverage is not provided under the Contractor's or applicable Subcontractor's Contractor's

Pollution Liability, then the Contractor/Subcontractor shall also be required to evidence the following under its Business Auto policy:

BUSINESS AUTO - Combined Single Limit Per Accident	$ 1,000,000

Covering Transportation and/or Hauling of hazardous materials by amending the pollution exclusion of ISO Form CA 00010 6/92 (or its equivalent) in the following manner:

1. Delete Section a.(1)a.: (Pollution) "being transported or towed away by, or handled for movement into, onto or from the Covered Auto"
2. Delete Section a.(1)b.: "Otherwise in the course of transit by the insured."

Coverage shall include MCS-90 endorsement with the University as Additional Insured and shall be endorsed to specifically limit the reimbursement provisions of the MCS-90 to the Named Insured.

UNIVERSITY OF CALIFORNIA,

RIVERSIDE

Project Basis of Design & Performance Specification
UCR 959581: Solar Photovoltaic Design-Build Project

STUDENT SERVICES

STUDENT RECREATION CENTER (SOUTH)

CONTENTS

Overview and Design Criteria

1 General Criteria
2 Buildings
3 Design/Build Team
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5 System Elements
6 Building(s) Electrical Systems
7 Control and Monitoring System
8 Structural
9 Roofing
10 Prevailing Codes and Standards
11 Administration Requirements and General Conditions
12 Roof and PV System Warranty / Performance Guarantee
13 Life Cycle Maintenance

Exhibits

Specific exhibits, listed below, are provided in order to streamline the initial review process.

A-1 Possible Concept for Rooftop PV on Student Services Building
A-2 Possible Concept for Rooftop PV on Student Recreation Center, South
B-1 Student Services Electrical Single Line
B-2 Student Rec Center, South Electrical Single Line
C Structural Report Issued Nov 1, 2019
D-1 Student Services Roofing Detail
D-2 Student Rec Center, South Roofing Detail

As a part of the RFP, drawings (architectural, electrical, structural, etc.) are available, and can be obtained electronically as a PDF. The design/build contractor is responsible for reviewing all provided drawings while developing their proposal. The link to the building as-build drawings are as follows:

Student Services:
https://o365ucr-my.sharepoint.com/:f:/g/personal/nellyz_ucr_edu/Elc09nsf3K1JsQJYSiltJU0BN2NiG6i5nRfYM_MxXkcr1Q?e=xUhSt9

Student Recreation Center (South):
https://o365ucr-my.sharepoint.com/:f:/g/personal/nellyz_ucr_edu/Euid950ZUiJMpiXT2EEznAIBW45j_kKV5L3S4zudZ6EHvQ?e=hDfeJD

OVERVIEW AND DESIGN CRITERIA

1. GENERAL CRITERIA

The overall goal of this effort is for the University to obtain the services of a design/build contracting team to design, construct, and commission a photovoltaic (PV) system on two targeted campus buildings. The PV system is expected to provide the maximum generation of renewable power with minimum impact on each building; while also integrating the photovoltaic production into the building(s) and campus electrical systems. Furthermore, the PV system is to include provisions for future integration into the University building management systems (BMS) to monitor and trend energy (kWh), instantaneous power (kW), and calculate carbon/greenhouse gas savings in metric tons (tonnes).

Reliable and predictable power with minimal annual degradation in output, as well as predictable maintenance, is desirable for a minimum of 25 years. The roof warranty is to be retained and extended as a part of the delivered system. To extend and incorporate the roof warranty, a coating and/or other roofing enhancements are anticipated. The project will be considered complete after the system has been fully accepted by the University and proven to be fully operational for one month[1].

2. BUILDINGS

Student Services Building:	Student Recreation Center South:
The Student Services building was constructed in 2007 and has a gross rooftop area of approximately 17,850 square feet. An existing air handling unit resides on the rooftop, which is the largest obstruction to avoid by the proposed solar PV system. The remaining features to avoid are the roof drains and the roof access hatch.	The Student Recreation Center (South) was constructed in 2013 and has a total rooftop area of approximately 47,400 square feet. This rooftop has several existing features that will impede on the available area for solar PV installation. The largest obstruction is the mechanical equipment enclosure and exterior ductwork. Secondary to the mechanical equipment, there is also fall protection, a lightning grounding system, roof drains, and the roof access hatch.

3. DESIGN/BUILD TEAM

The design/build team shall be comprised of an Electrical Contractor with "C-10" license or a Solar Contractor with a "C-46" license. The contractor's team shall be comprised of, as a minimum, a superintendent, an architect-or-engineer of record, a structural engineer, an electrical engineer, and a roofing engineer.

System design to be submitted for review and approval at a minimum of 100% SD, 50% CD, and 100% CD. All drawings are to be stamped by a licensed architect and/or engineer. Final as-builts of the system are to be provided in AutoCAD 2018 or higher. Drawings are to show equipment and conduit sizes above 1".

4. SYSTEM LAYOUT

Exhibits A-1 and A-2 have been provided as a concept indicating possible panel layout. It is the desire of the University to obtain the highest annual energy production for the available budget. Additionally, it is

[1] See Section 12: *Contractor Performance Requirements for Project Acceptance* within this document.

critical that the NFPA Code clearances, and all prevailing codes, are satisfied during the design and construction phases. The design/build contractor shall be responsible for providing stamped Construction Drawings; approved by the AHJ and the University, prior to commencing construction.

5. SYSTEM ELEMENTS

Contractor's team to provide equipment submittals in the response to the final RFP. Submittals shall include the following elements:

I. PV Modules

A. PV module manufacturer shall have a minimum 5 years of manufacturing experience for the submitted modules.
B. Module Efficiency: Not less than 20%
C. The minimum/maximum allowable temperatures, impact resistance, and maximum wind load specifications of the proposed PV modules shall comply with the current prevailing codes and standards for the region of installation[2]. Specifically, the standards, practices, and procedures described within IEC 61215, NECA 412, UL 1699B, and UL 1703 are to be referenced and followed for the selection of the PV modules and the installation of the PV system.
D. General Requirements:
    1. Photovoltaic Modules: Factory assembled; consisting of photovoltaic cells, frame, junction box, cables for series connection, and bypass diodes for shade tolerance; rated for 1500 V DC; listed as complying with UL 1703.
    2. Crystalline Silicon Photovoltaic Modules: Comply with IEC 61215-1, IEC 61215-1-1, and IEC 61215-2.
    3. Frame: Anodized aluminum.
    4. Factory-Installed Junction Box: Weatherproof, with factory-installed terminals and bypass diodes.
    5. Factory-Installed Cables: Type USE-2 or listed photovoltaic (PV) wire with polarized locking connectors.
    6. Unless otherwise indicated, specified module performance characteristics are rated under Standard Test Conditions (STC).

II. DC to AC Inverter

A. Photovoltaic DC to AC Inverters:
    a. Inverter Efficiency: Shall be no less than 95%.

III. Mounting System

A. Photovoltaic Module Mounting System:
    1. Roof-Mounted Arrays:
        a. Acceptable System Types: Either ballasted (non-penetrating) or stanchion (penetrating) systems complying with specified requirements will be considered for this project.

[2] See Section 10: *Prevailing Codes and Standards* within this document.

i. ***A ballasted (non-penetrating) system is strongly preferred by the University.*** However, it is up to the design/build contractor to determine the best possible design.

b. Provide system compatible with the roof at the installed location.

c. Support Structure and Associated Hardware Materials: Use aluminum, galvanized steel, stainless steel, sustainable alternatives, or approved equal.

2. Submittal to include details of the complete mounting system and shall be compatible with the modules to be installed. If a combined ballasted and stanchion (non-ballasted) system is proposed, provide mounting system submittal(s) for required for each.

IV. Utility Grade Electric Meter

A. Electro Industries/ GaugeTech Shark Meter, Model: Shark250-60-10-V4-D2-INP100S-RS1S

1. Meter to be in self-contained enclosure containing network switch for ease of access for qualified University personnel, per campus standards.
    i. Preferred: N-Tron, CISCO network switch equipped five (5) ethernet ports.
2. INP100S Network Card shall be provided to support and connect to the campus network for future campus BMS integration.
    i. Campus Network Protocol: Ethernet Modbus TCP/IP
3. RS232/RS485 Network Card shall be provided for BACnet ready connections (RS1S) to the future BMS integration.

V. Data Managing Controller and Online Portal

A. Data Managing Controller:
1. SMA Data Manager M
2. Or approved equal

B. A subscription to a PV manufacturer owned/recommended online portal system shall be included. The online portal system shall be capable of and include the following:
1. Detecting faults, errors, and failures within the PV system and sending notification messages to the user.
2. Monitoring and trending PV system energy (kWh), instantaneous power (kW), and carbon/greenhouse gas savings in metric tons (tonnes).

6. BUILDING(S) ELECTRICAL SYSTEMS

Exhibits B-1 and B-2 provide single line diagrams providing information regarding the electric system and possible points of integration. Contractor is responsible for locating and recommending point of interconnections.

The Student Recreation Center (South) may require trenching, additional panels, and/or existing equipment upsizing as the existing main panel is not large enough to connect to. Coordinate interconnection and equipment upsizing with the University's Facilities Services Maintenance + Energy group for design approval.

As part of the modification of the electrical system, the contractor shall perform a power system study including short circuit, arc flash, and coordination for each building. Contractor to request Utility data for available fault. Contractor to label all building panels and equipment 200A and up with industry standard

arc flash labels. Study to be done in either SKM or Easypower and to be provided to University at the end of project.

Interconnection to campus system shall be done via a smart circuit breaker with conduit and wire provided for future connection to campus micro-grid. Circuit breaker to be ABB SACE Emax 2 or approved equal.

7. CONTROL AND MONITORING SYSTEMS

It is required that the solar PV system is to incorporate the specified meter (including the specified network communication cards) for a future campus BMS integration, as previously described in Section 5-IV.

Data managing controllers (as described in Section 5-V above) are to be installed for each individual building PV system. The data managing controllers will connect to, and communicate with, the PV manufacturer owned/recommended online portal system that provides error, fault, and failure notifications that shall aid in system troubleshooting; the portal system shall also monitor and trend the PV system energy (kWh), power (kW), and calculate carbon/greenhouse gas savings in metric tons (tonnes).

8. STRUCTURAL

Exhibit C provides a preliminary structural assessment of the roof (i.e. relative to supporting a solar PV system). The structural integrity of the proposed roof area must be able to accommodate the additional, combined load of the mounting and PV systems.

9. ROOFING

It is the responsibility of the design/build contractor to determine the best possible design for the proposed PV system while maintaining and extending the current roof warranty[3].

Electrical conduit routing to be designed as to reduce the amount of crossing through required CFC paths. Contractor to provide walking ramps over all conduit on roof though paths.

Exhibits D-1 and D-2 indicate that the existing roof construction generally consists of a mechanically attached white PVC single-ply roofing membrane with ½" roof coverboard (only shown for Student Recreation Center, South), tapered rigid insulation, and a structural metal deck. These existing features are to be field verified by the roofing engineer. It is a requirement of the contract that the manufacturer extend the existing roof warranty a minimum of 15 years from date of substantial completion. To accomplish this, a coating or additional layer may need to be added to the existing roofing system.

Typically, roof warranties require the removal of the overburden (i.e. the solar arrays) BEFORE making any repairs. It can be quite a costly procedure to relocate the solar arrays in order to search for, and repair, leaks in the roofing system. Therefore, it is of high priority to conservatively design and install the roofing system to not only avoid leaks, but also to minimize the potential for leaks to occur.

In order to avoid and minimize the potential for leaks, the design/build roofing engineer and/or installer must acknowledge and account for the following considerations:

[3] Coordinate with UCR Facilities Department for current warranty information and roofing contractor.

A. If an acrylic coating is proposed, an epoxy based primer shall be used.
B. Contractor to complete a roof moisture survey to quantify the amount of water trapped in the existing roof.
C. The roofing system may not include a robust cover board (e.g. ½" gypsum) needed to protect the roof during solar PV installation. If there is not a cover board, or if it less than ½" thick (e.g. ¼" thick is typical), installation of a solar PV array WILL significantly damage the roof membrane and the roof insulation. This must be accommodated and confirmed by the roofing engineer and/or issuer of the warranty.
D. Some module/mounting manufacturers recommend their ballasted solar PV system only be installed over fully adhered roof systems. The concern here is that strong winds WILL billow the sheets upward between fastener rows, and this could easily damage and/or displace the array. The design/build roofing engineer and architect of record shall confirm, as part of the design, compatibility between the PV modules/mounting system and the roofing system.
E. Coating systems are typically reflective. Confirm the hypothermic behavior of the existing roof assembly is not impacted by the planned coating system.

10. PREVAILING CODES AND STANDARDS

Unless otherwise indicated or specified, perform the work in conformance with the latest editions of all applicable regulatory codes and standards, including, but not limited to, the following:

Applicable Codes and Standards

A. California Administrative Code (Part 1, Title 24): 2019
B. California Building Code (Part 2, Vol. I and II, Title 24): 2018 IBC with 2019 CA Amendments
C. California Electrical Code (Part 3, Title 24): 2017 NEC with 2019 CA Amendments
D. California Mechanical Code (Part 4, Title 24): 2018 UMC with 2019 CA Amendments
E. California Plumbing Code (Part 5, Title 24): 2018 UPC with 2019 CA Amendments
F. California Energy Code (Part 6, Title 24): 2019
G. California Fire Code (Part 9, Title 24): 2018 IFC with 2019 CA Amendments
H. California Existing Building Code (Part 10, Title 24): 2018 (International Existing Building Code with 2019 CA Amendments)
I. California Green Building Standards Code or Cal Green (Part 11, Title 24): 2019
J. California Referenced Standards Code (Part 12, Title 24): 2019
K. California Code of Regulations Public Safety (Title 19), State Fire Marshal: 2019

Reference Standards

A. IEC 61215-1 - Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval - Part 1: Test Requirements; 2016.
B. IEC 61215-1-1 - Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval - Part 1-1: Special Requirements for Testing of Crystalline Silicon Photovoltaic (PV) Modules; 2016.
C. IEC 61215-2 - Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval - Part 2: Test Procedures; 2016.
D. IEC 61215 - Crystalline Silicon Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval; 2005.
E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

F. NECA 412 - Standard for Installing and Maintaining Photovoltaic (PV) Power Systems; 2012.
G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
H. UL 1699B - Outline of Investigation for Photovoltaic (PV) DC Arc-Fault Circuit Protection; Current Edition, Including All Revisions.
I. UL 1703 - Flat Plate Photovoltaic Modules and Panels; Current Edition, Including All Revisions.

11. ADMINISTRATION REQUIREMENTS AND GENERAL CONDITIONS

Administrative Requirements

A. Division 0 and Division 1 are to be provided by University.
B. Utility Interconnection:
    1. It is the responsibility of the design/build team to install the system to meet all Utility requirements. In that regard coordinate and submit utility interconnection agreements with Utility to provide metering suitable for system requirements and arrange for inspections and secure permits necessary to obtain Utility Company approval of system, if required.

12. ROOF AND PV SYSTEM WARRANTY / PERFORMANCE GUARANTEE

Roof Warranty Requirements

It is a requirement of the contact that the manufacturer extend the existing warranty a minimum of 15 years.

PV System Warranty

A. Photovoltaic Modules:
B. Provide minimum 25-year manufacturer warranty covering repair or replacement due to defective materials.
C. Photovoltaic Module Mounting System: Provide minimum 25-year manufacturer warranty covering repair or replacement due to defective materials.
D. Photovoltaic Inverters: Provide minimum 25-year manufacturer warranty covering repair or replacement due to defective materials.
E. Contractor to provide 1-year warranty covering repair and/or replacement due to defective workmanship.

PV System Performance Guarantee

A. Definitions:
    1. Commercial Operation Date: The date in which the solar PV system has been tested, approved, and has begun actively producing power to the University micro-grid.
    2. Expected Energy: For each Guarantee Year, an Expected Energy production shall be calculated using the National Renewable Energy Laboratory (NREL) System Advisor Model (SAM) Software.

i. The solar contractor shall visit each of the proposed rooftops to conduct a shading analysis at each location; this data shall be used as an input to the evaluating software.
ii. Inputs into the NREL SAM software shall match the design/build team's, professional engineer approved, design.

3. Actual Generation: Actual Generation of the system shall be the metered energy at the point of delivery, in kWh.
4. Guarantee Year: Each successive 12-month period following the Commercial Operation Date shall be named a Guarantee Year.
5. Guaranteed Level: The Guaranteed Level of system production shall be not less than 80% of the Expected Energy in kWh and shall be given for each month.
6. Degradation Rate: A degradation rate, no greater than 0.3%, shall be applied to each year of the Guaranteed Level system production, in kWh.

B. Contractor Performance Requirements for Project Acceptance
1. Project acceptance shall occur following one entire month of operation beginning on the University accepted Commercial Operation Date. At that time, system performance shall be measured within the Guaranteed Level of output as stated in the design documents. The month to be evaluated shall begin at 12:00AM on the first day of the month and the evaluation shall be completed at 12:00AM of the following month. The actual output of the system will be compared against the Guaranteed Level of output for that specific month.

C. Photovoltaic Module Manufacturer Performance Guarantee:
1. The photovoltaic module manufacturer shall provide a 25-year Performance Guarantee that shall commence on the Commercial Operation Date of the solar photovoltaic system.
i. The 25-Year Guarantee shall ensure that the PV system maintains a production level within the Guaranteed Level as defined above.
ii. If the Actual Generation falls below the Guaranteed Level for any given year, the PV module manufacturer shall be responsible for correcting any defects and/or failures protected within the component warranties.

13. LIFE CYCLE MAINTENANCE

A. Life Cycle Maintenance: shall be added as an Add Alternate item to the bid. A fixed price for twenty-five (25) year maintenance is required. Maintenance includes, but is not limited to, the following:
1. System Cleaning: Clean modules using only methods and frequency as recommended by manufacturer to avoid scratches and other damage. Clean exposed surfaces on other components to remove dirt, paint, or other foreign material and restore to match original factory finish.
2. System Testing: Manufacturer recommended service person shall conduct annual verification testing to ensure actual production at the site is being accurately monitored by the online portal monitoring systems and the specified meter by the University (see Section 5-IV).
3. System Repairs: Manufacturer recommended service person shall repair any deficiencies that occur under the system warranty and/or system performance guarantee.
4. Monitoring system troubleshooting and assistance.

B. System Monitoring and Control: The University shall receive software/SCADA system updates along with SCADA controls (hardware), when necessary/required to keep the system up-to-date and functional. Hardware upgrades shall be included, at no cost, to maintain the integrity of the overall system, including software/online portals.

EXHIBITS

EXHIBIT A-1

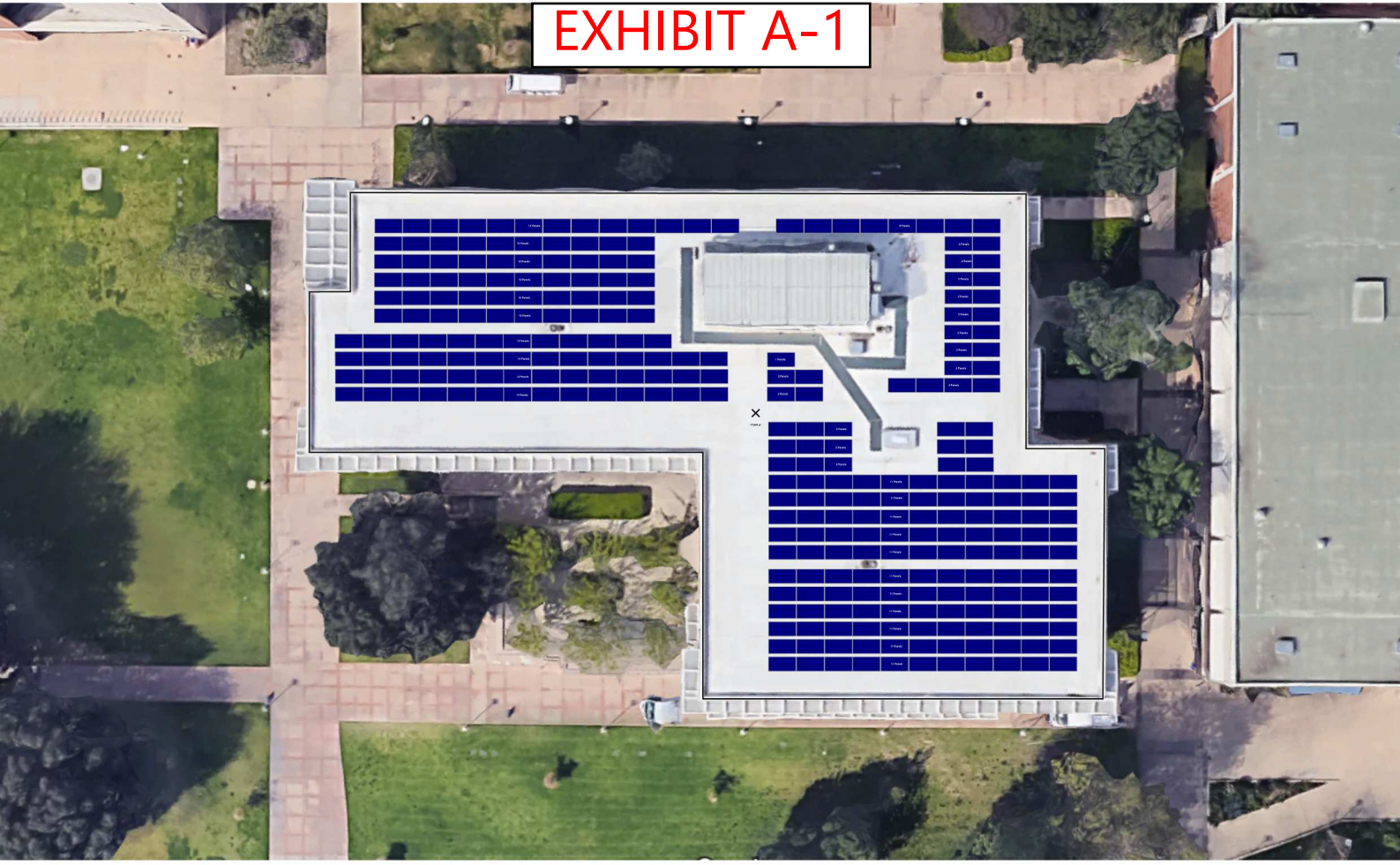


EXHIBIT A-2

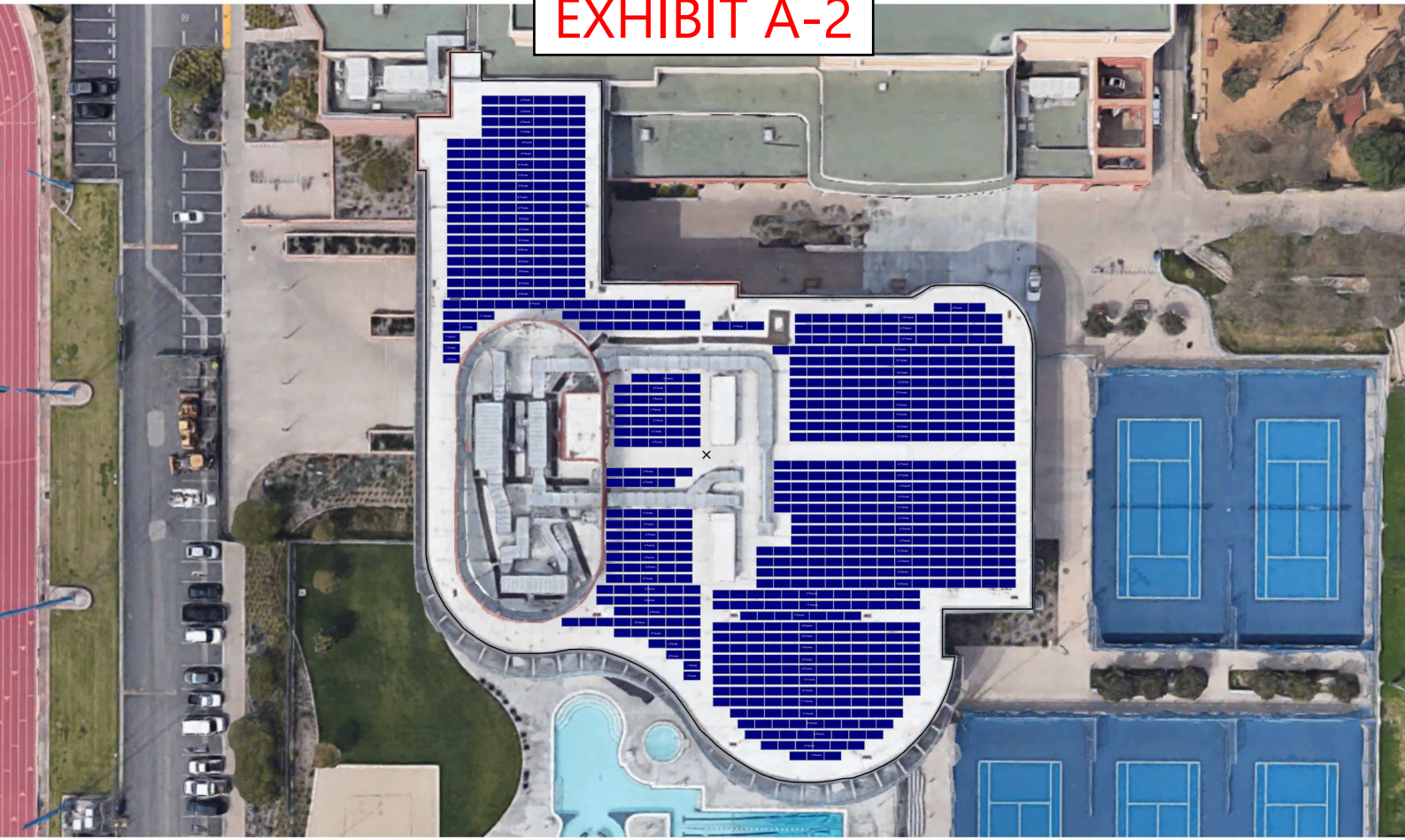


EXHIBIT B-1

COPPER FEEDER SCHEDULE

FEEDER TAG	FEEDER DESCRIPTION	CONDUIT	CONDUCTORS PHASE/NEUTRAL	CONDUCTORS GROUND	REMARKS
4004	400 AMP,3 PHASE,4 WIRE	1-3.50"	4 #500 KCMIL	1 #2	–
4003	400 AMP,3 PHASE,3 WIRE	1-3.00"	3 #500 KCMIL	1 #2	–
2254K	225 AMP,3 PHASE,4 WIRE	1-3.00"	3 #300 KCMIL, 2 #4/0 NEU.	1 #4	(1)
2254	225 AMP,3 PHASE,4 WIRE	1-2.50"	4 #4/0	1 #4	–
2253	225 AMP,3 PHASE,3 WIRE	1-2.00"	3 #4/0	1 #4	–
2004K	200 AMP,3 PHASE,4 WIRE	1-3.00"	3 #250 KCMIL 1 #500 KCMIL NEU.	1 #6	(1)
2004	200 AMP,3 PHASE,4 WIRE	1-2.00"	4 #3/0	1 #6	–
2003	200 AMP,3 PHASE,3 WIRE	1-2.00"	3 #3/0	1 #6	–
1754K	175 AMP,3 PHASE,4 WIRE	1-3.00"	3 #4/0, 1 #400 KCMIL NEU.	1 #6	(1)
1754	175 AMP,3 PHASE,4 WIRE	1-2.00"	4 #2/0	1 #6	–
1753	175 AMP,3 PHASE,3 WIRE	1-1.50"	3 #2/0	1 #6	–
1504K	150 AMP,3 PHASE,4 WIRE	1-2.50"	3 #3/0 AWG, 1 #350 KCMIL NEU.	1 #6	(1)
1504	150 AMP,3 PHASE,4 WIRE	1-1.50"	4 #1/0	1 #6	–
1503	150 AMP,3 PHASE,3 WIRE	1-1.50"	3 #1/0	1 #6	–
1254	125 AMP,3 PHASE,4 WIRE	1-1.50"	4 #1	1 #6	–
1253	125 AMP,3 PHASE,3 WIRE	1-1.25"	3 #1	1 #6	–
1004K	100 AMP,3 PHASE,4 WIRE	1-2.00"	3 #1/0 AWG, 1 #4/0 AWG NEU.	1 #8	(1)
1004	100 AMP,3 PHASE,4 WIRE	1-1.25"	4 #2	1 #8	–
1003	100 AMP,3 PHASE,3 WIRE	1-1.25"	3 #2	1 #8	–
904	90 AMP,3 PHASE,4 WIRE	1-1.25"	4 #2	1 #8	–
903	90 AMP,3 PHASE,3 WIRE	1-1.25"	3 #2	1 #8	–
804	80 AMP,3 PHASE,4 WIRE	1-1.25"	4 #4	1 #8	–
803	80 AMP,3 PHASE,3 WIRE	1-1.00"	3 #4	1 #8	–
704	70 AMP,3 PHASE,4 WIRE	1-1.25"	4 #4	1 #8	–
703	70 AMP,3 PHASE,3 WIRE	1-1.00"	3 #4	1 #8	–
604K	60 AMP,3 PHASE,4 WIRE	1-1.50"	3 #3 AWG 1 #1 AWG NEU.	1 #10	(1)
604	60 AMP,3 PHASE,4 WIRE	1-1.25"	4 #6	1 #10	–
603	60 AMP,3 PHASE,3 WIRE	1-1.00"	3 #6	1 #10	–
504K	50 AMP,3 PHASE,4 WIRE	1-1.25"	3 #4 AWG, 1 #2 AWG NEU.	1 #10	(1)
504	50 AMP,3 PHASE,4 WIRE	1-1.00"	4 #8	1 #10	–
503	50 AMP,3 PHASE,3 WIRE	1-0.75"	3 #8	1 #10	–
404K	40 AMP,3 PHASE,4 WIRE	1-1.25"	3 #6 AWG 1 #2 AWG NEU.	1 #10	(1)
404	40 AMP,3 PHASE,4 WIRE	1-0.75"	4 #8	1 #10	–
403	40 AMP,3 PHASE,3 WIRE	1-0.75"	3 #8	1 #10	–
304K	30 AMP,3 PHASE,4 WIRE	1-1.00"	3 #8 AWG 1 #4 AWG NEU.	1 #10	(1)
304	30 AMP,3 PHASE,4 WIRE	1-0.75"	4 #10	1 #10	–
303	30 AMP,3 PHASE,3 WIRE	1-0.75"	3 #10	1 #10	–
204	20 AMP,3 PHASE,4 WIRE	1-0.50"	4 #12	1 #12	–
203	20 AMP,3 PHASE,3 WIRE	1-0.50"	3 #12	1 #12	–
154	15 AMP,3 PHASE,4 WIRE	1-0.50"	4 #12	1 #12	–
153	15 AMP,3 PHASE,3 WIRE	1-0.50"	3 #12	1 #12	–

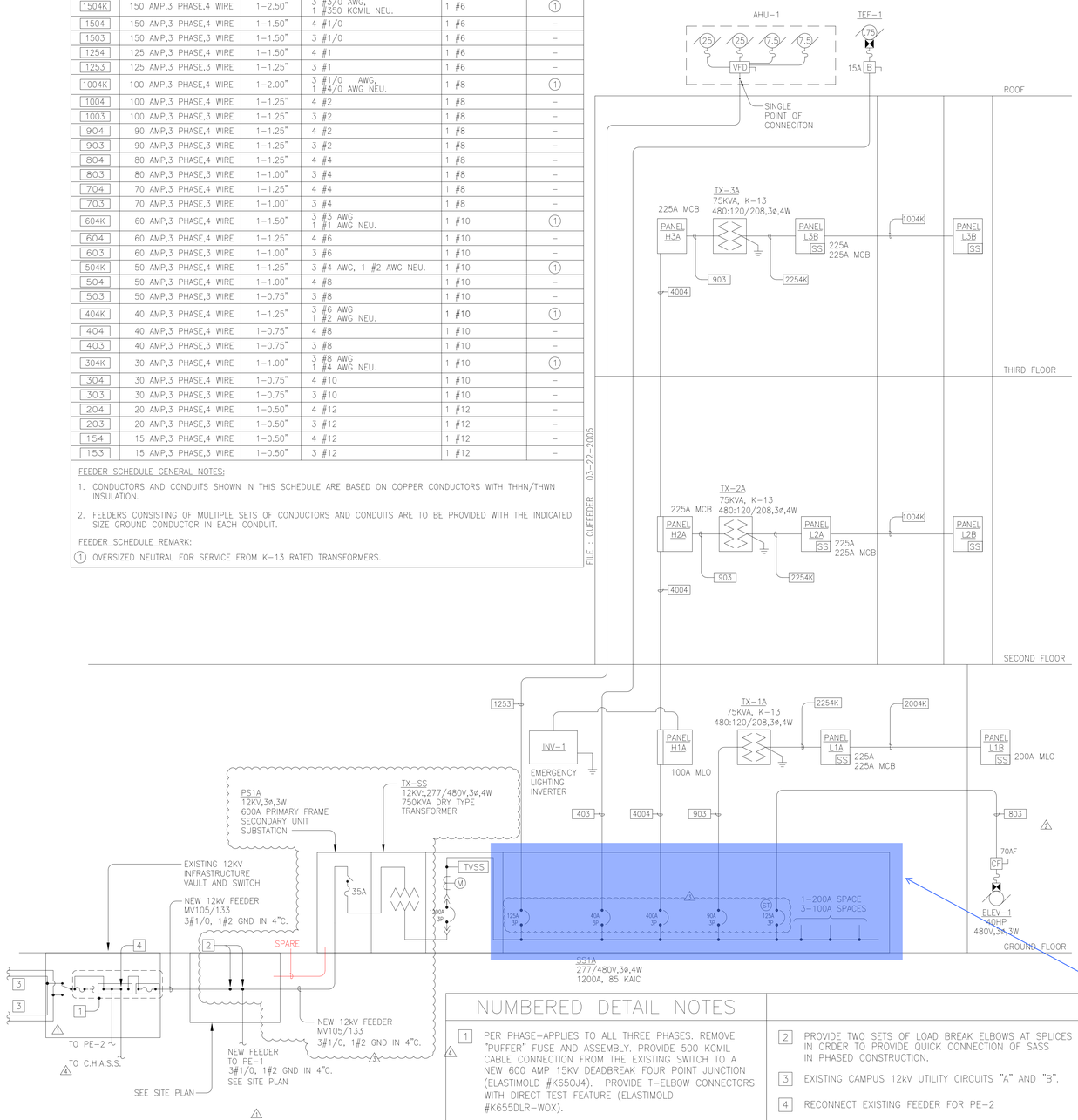
FEEDER SCHEDULE GENERAL NOTES:

1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.
2. FEEDERS CONSISTING OF MULTIPLE SETS OF CONDUCTORS AND CONDUITS ARE TO BE PROVIDED WITH THE INDICATED SIZE GROUND CONDUCTOR IN EACH CONDUIT.

FEEDER SCHEDULE REMARK:

(1) OVERSIZED NEUTRAL FOR SERVICE FROM K-13 RATED TRANSFORMERS.

FILE : CUFEEDER 03-22-2005



NUMBERED DETAIL NOTES

1. PER PHASE-APPLIES TO ALL THREE PHASES. REMOVE "PUFFER" FUSE AND ASSEMBLY. PROVIDE 500 KCMIL CABLE CONNECTION FROM THE EXISTING SWITCH TO A NEW 600 AMP 15KV DEADBREAK FOUR POINT JUNCTION (ELASTIMOLD #K650J4). PROVIDE T-ELBOW CONNECTORS WITH DIRECT TEST FEATURE (ELASTIMOLD #K655DLR-WOX).

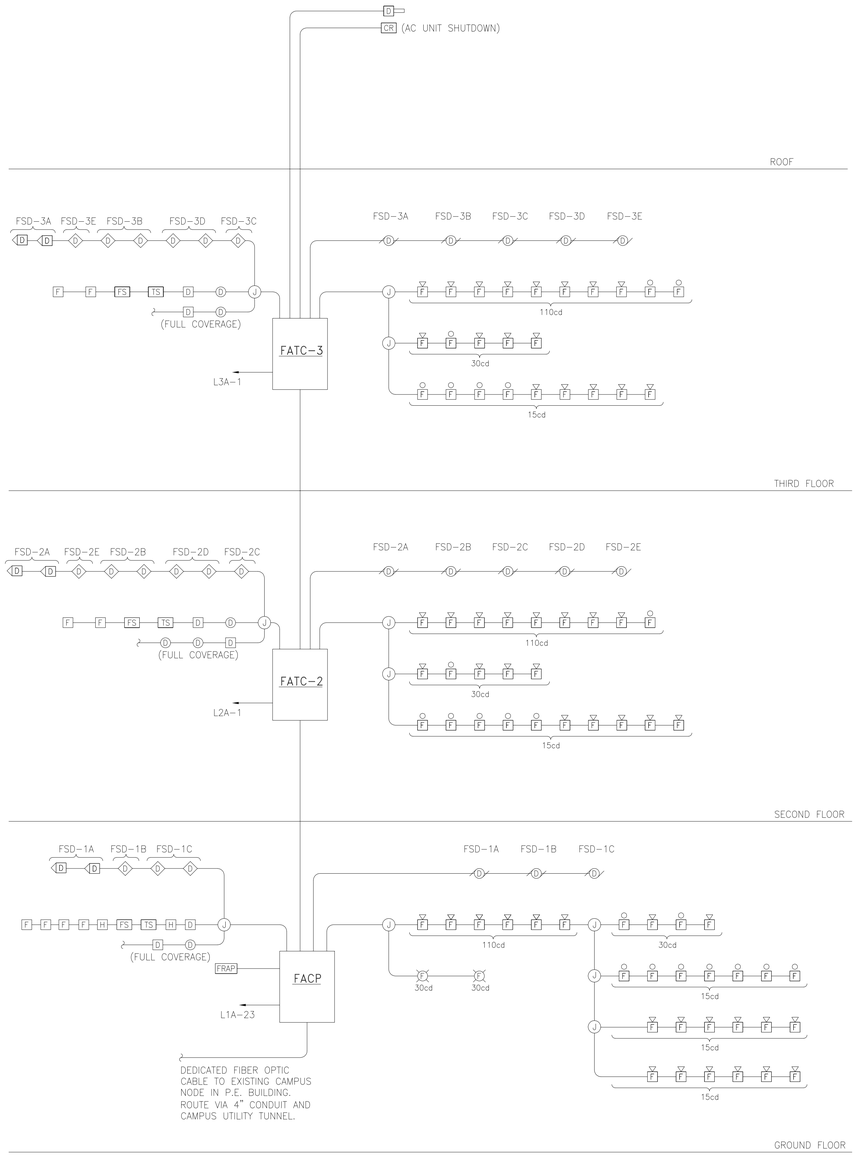
   CONNECT THE FEEDERS TO C.H.A.S.S. AND PE-2 THE ELBOW CONNECTORS. CONNECT A 500 KCMIL BETWEEN THE JUNCTION AND THE 600 SERIES MOLDED CURRENT-LIMITING FUSE ASSEMBLY WITH 70 AMP FUSE (ELASTIMOLD #MCLF-66-70A). CONNECT THE FEEDER FOR S.A.S.S./PE-1 TO THE OTHER END OF THE FUSE ASSEMBLY. PROVIDE BUSHINGS, MOUNTING BRACKETS AND ACCESSORIES AS REQUIRED FOR A COMPLETE ASSEMBLY.

   SUBMIT SHOP DRAWINGS PRIOR TO PURCHASE OR IMPLEMENTATION.

2. PROVIDE TWO SETS OF LOAD BREAK ELBOWS AT SPLICES IN ORDER TO PROVIDE QUICK CONNECTION OF SASS IN PHASED CONSTRUCTION.
3. EXISTING CAMPUS 12kV UTILITY CIRCUITS "A" AND "B".
4. RECONNECT EXISTING FEEDER FOR PE-2

A E6.01 POWER RISER DIAGRAM

SCALE: NONE



Point of interconnection to be on load side of main breaker.

B E6.01 FIRE ALARM RISER DIAGRAM

SCALE: NONE

SASAKI
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Bergelectric Corp. Contractors & Engineers
#C10-#850461 (760) 746-1003
650 Opper St.,Escondido, CA 92029, FAX (760) 739-5863

AS-BUILT 12/30/08

No.	Description	Date
4	BULLETIN 1R	19 SEP 2007
3	BULLETIN 3	7 AUG 2007
2	BULLETIN 1	7 JUN 2007
5	BID SET	15 DEC 2006
4	100% CONSTRUCTION DOCUMENT	28 AUG 2006
3	50% CONSTRUCTION DOCUMENT	23 JUN 2006
2	100% DESIGN DEVELOPMENT	17 APR 2006
1	100% SCHEMATIC DESIGN	11 NOV 2005

DWG ISSUE & REVISION HISTORY

Stamp

Key Plan

Project Title:

UNIVERSITY OF CALIFORNIA RIVERSIDE STUDENT ACADEMIC SUPPORT SERVICES BUILDING

UCR Project No: 950457

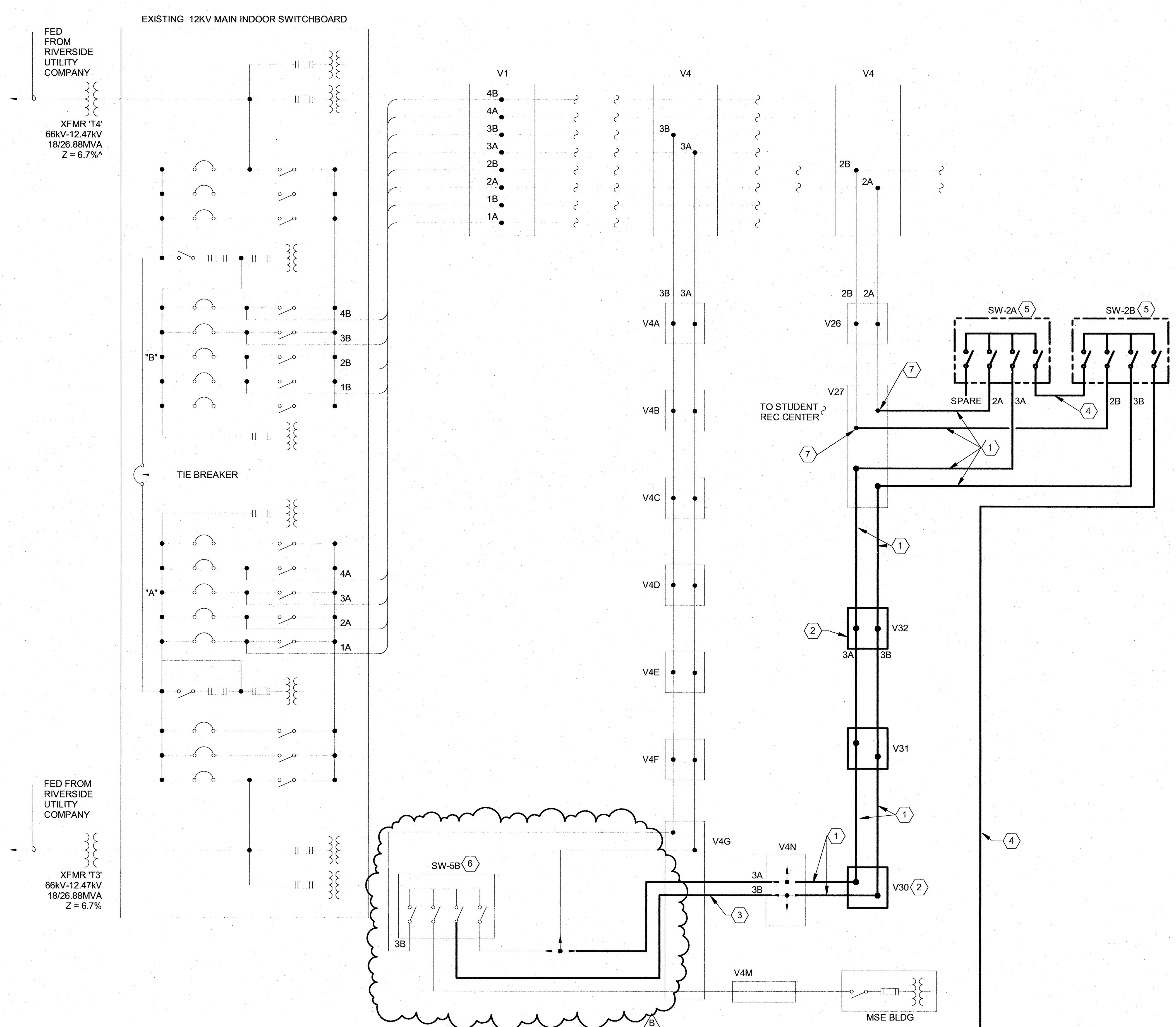
Drawing Title:

SINGLE LINE DIAGRAMS

Project No. 54070.00 Scale: NONE
Drawn By: GL
Checked By: PTM
Approved By: PTM
Date: 11 NOV 2005

Drawing No. E6.01

EXHIBIT B-2



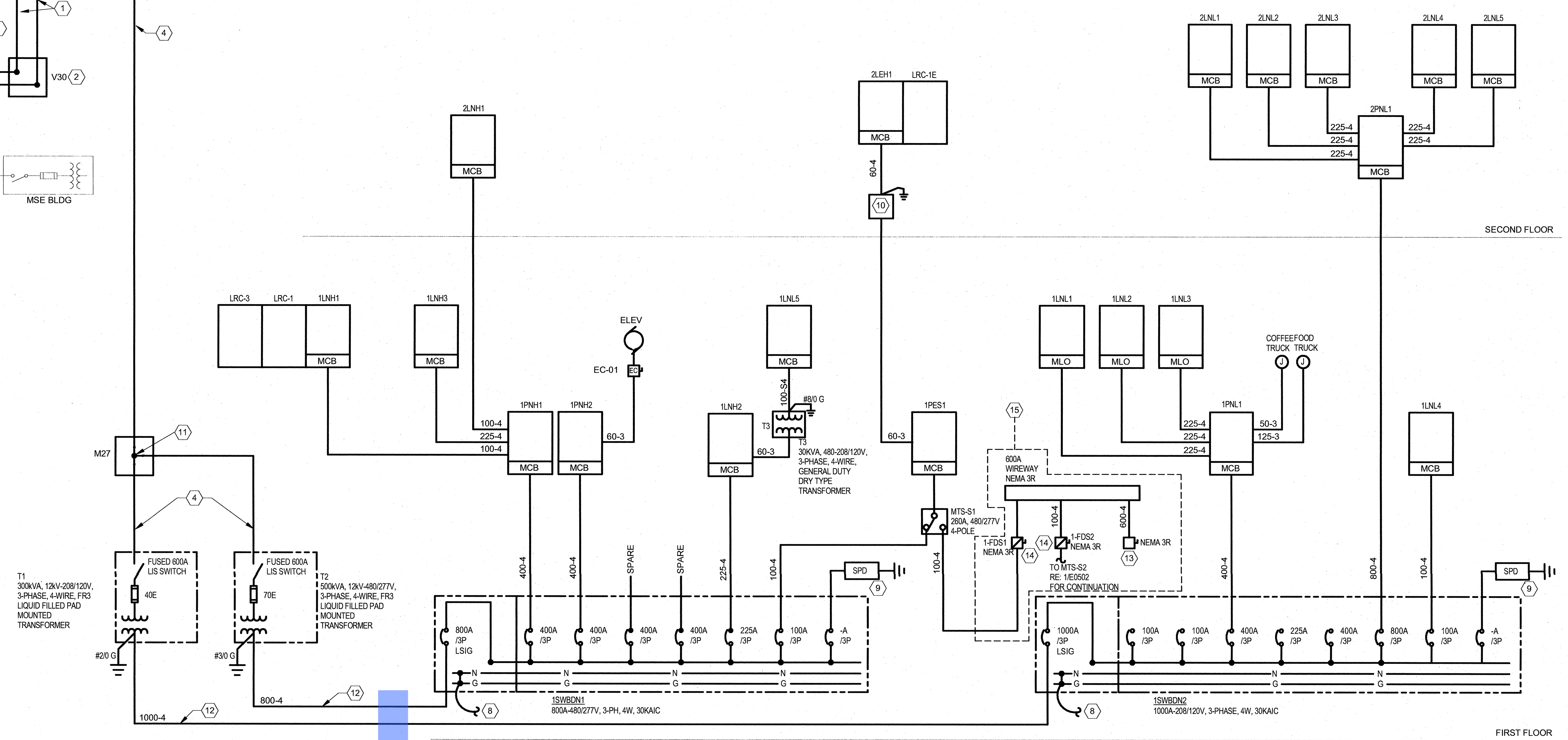
TAG	SETS	PHASE AND NEUTRAL		GROUND	CONDUIT	SEE NOTE
		QUANTITY	SIZE			
30-3	1	3	#10	#10	3/4"	
40-3	1	3	#8	#10	3/4"	
50-3	1	3	#6	#10	3/4"	
60-3	1	3	#4	#10	1"	
70-3	1	3	#4	#8	1"	
80-3	1	3	#3	#8	1"	
90-3	1	3	#2	#8	1-1/4"	
100-3	1	3	#1	#8	1-1/4"	
125-3	1	3	#1/0	#6	1-1/2"	
150-3	1	3	#1/0	#6	1-1/2"	
175-3	1	3	#2/0	#6	1-1/2"	
200-3	1	3	#3/0	#6	2"	
225-3	1	3	#4/0	#4	2"	
250-3	1	3	#250KCMIL	#4	2"	
275-3	2	3	#1/0	#4	1-1/2"	
300-3	1	3	#350KCMIL	#4	2-1/2"	
350-3	1	3	#500KCMIL	#3	3"	
350-3	2	3	#2/0	#3	1-1/2"	
400-3	1	3	#500KCMIL	#3	3"	
400-3	2	3	#3/0	#3	2"	
450-3	1	3	#600KCMIL	#2	3"	
450-3	2	3	#4/0	#2	2"	
500-3	2	3	#250KCMIL	#2	2"	
600-3	2	3	#350KCMIL	#1	2-1/2"	
700-3	2	3	#500KCMIL	#1/0	3"	
800-3	2	3	#500KCMIL	#1/0	3"	
900-3	3	3	#350KCMIL	#2/0	2-1/2"	
1000-3	3	3	#400KCMIL	#2/0	3"	
1200-3	3	3	#600KCMIL	#3/0	3"	
1600-3	4	3	#600KCMIL	#4/0	3-1/2"	
2000-3	5	3	#600KCMIL	#250KCMIL	3-1/2"	
2500-3	6	3	#600KCMIL	#350KCMIL	3-1/2"	
3000-3	8	3	#400KCMIL	#400KCMIL	3"	
4000-3	11	3	#500KCMIL	#500KCMIL	3"	

FEEDER SCHEDULE

TAG	SETS	PHASE AND NEUTRAL		GROUND	CONDUIT	SEE NOTE
		QUANTITY	SIZE			
30-4	1	4	#10	#10	3/4"	
40-4	1	4	#8	#10	3/4"	
50-4	1	4	#6	#10	1"	
60-4	1	4	#4	#10	1-1/4"	
70-4	1	4	#4	#8	1-1/4"	
80-4	1	4	#3	#8	1-1/4"	
90-4	1	4	#2	#8	1-1/4"	
100-4	1	4	#1	#8	1-1/2"	
125-4	1	4	#1/0	#6	1-1/2"	
150-4	1	4	#1/0	#6	1-1/2"	
175-4	1	4	#2/0	#6	2"	
200-4	1	4	#3/0	#6	2"	
225-4	1	4	#4/0	#4	2-1/2"	
250-4	1	4	#250KCMIL	#4	2-1/2"	
275-4	2	4	#1/0	#4	2"	
300-4	1	4	#350KCMIL	#4	3"	
350-4	1	4	#500KCMIL	#3	3-1/2"	
350-4	2	4	#2/0	#3	2"	
400-4	1	4	#500KCMIL	#3	3-1/2"	
400-4	2	4	#3/0	#3	2"	
450-4	1	4	#600KCMIL	#2	3-1/2"	
450-4	2	4	#4/0	#2	2-1/2"	
500-4	2	4	#250KCMIL	#2	2-1/2"	
600-4	2	4	#350KCMIL	#1	3"	
700-4	2	4	#500KCMIL	#1/0	3-1/2"	
800-4	2	4	#600KCMIL	#1/0	4"	
900-4	3	4	#350KCMIL	#2/0	3"	
1000-4	3	4	#400KCMIL	#2/0	4"	
1200-4	3	4	#600KCMIL	#3/0	3-1/2"	
1600-4	4	4	#600KCMIL	#4/0	3-1/2"	
2000-4	5	4	#600KCMIL	#250KCMIL	3-1/2"	
2500-4	6	4	#600KCMIL	#350KCMIL	4"	
3000-4	8	4	#500KCMIL	#400KCMIL	3-1/2"	
4000-4	11	4	#500KCMIL	#500KCMIL	3-1/2"	

FEEDER SCHEDULE

TAG	SETS	PHASE AND NEUTRAL		GROUND	CONDUIT	SEE NOTE
		QUANTITY	SIZE			
25-P3	1	3	#10	#10	3/4"	
50-P3	1	3	#6	#10	3/4"	
70-P3	1	3	#4	#8	1"	
90-P3	1	3	#1	#8	1-1/4"	
125-P3	1	3	#1/0	#6	1-1/2"	
150-P3	1	3	#1/0	#6	1-1/2"	
175-P3	1	3	#2/0	#6	1-1/2"	
200-P3	1	3	#3/0	#6	2"	
225-P3	1	3	#4/0	#4	2"	
300-P3	1	3	#350KCMIL	#4	2-1/2"	
350-P3	1	3	#500KCMIL	#3	3"	
450-P3	2	3	#4/0	#2	2"	
800-P3	2	3	#500KCMIL	#1/0	3"	
1200-P3	3	3	#600KCMIL	#3/0	3"	
50-S4	1	4	#6	#8	1"	
100-S4	1	4	#1	#6	1-1/2"	
150-S4	1	4	#1/0	#6	1-1/2"	
225-S4	1	4	#4/0	#2	2-1/2"	
400-S4	1	4	#500KCMIL	#1/0	3-1/2"	
400-S4	2	4	#3/0	#2	2"	
500-S4	2	4	#250KCMIL	#1/0	2-1/2"	
800-S4	2	4	#600KCMIL	#3/0	3-1/2"	
1000-S4	3	4	#400KCMIL	#3/0	3"	
1600-S4	4	4	#600KCMIL	#3/0	4"	
2500-S4	6	4	#600KCMIL	#3/0	4"	
3000-S4	8	4	#500KCMIL	#3/0	3-1/2"	



Load side intercept for PV interconnection may be required and is shown for basis. After award the designer may propose other means of interconnection.

GENERAL NOTES

A.
ALL ELECTRICAL VAULTS, MANHOLES, EQUIPMENT AND CIRCUITS ARE EXISTING UNLESS OTHERWISE NOTED.

B.
ALL NEW PADMOUNT SWITCHES SHALL BE PROVIDED WITH A CONCRETE BOXPAD. REFER TO DETAIL 1/E0721.

C.
REFER TO DETAIL 2/E0721 FOR 4-WAY SWITCH SEQUENCE OF OPERATION.

D.
PROVIDE TEMPORARY POWER TO ALL EXISTING LOADS AFFECTED BY THE INSTALLATION OF NEW EQUIPMENT AND SERVICE CUT OVER DURING INTERRUPTION OF SERVICE COORDINATE WORK WITH UNIVERSITY REPRESENTATIVE.

E.
MAKE ALL PROVISIONS REQUIRED TO MINIMIZE THE DURATION OF SERVICE INTERRUPTION.

DWG. REVISED BY RFI #20
PROVIDE DEADBREAK BUSHING
WELLS & INSERTS TO
ACCEPT 500 MCM CABLE

KEYED NOTES

1.
NEW 2 SETS 3/C, 500KCMIL, 15KV, 133% RATED, EPR INSULATION AND (1)#1 GND IN 5"C. PROVIDE (2) 5"C SPARES. REFER TO DETAIL 3/E0723.

2.
NEW ELECTRICAL VAULT. REFER TO DETAIL 4/E0721.

3.
2 SETS 3/C, 500 KCMIL, 15KV, 133% RATED EPR INSULATION AND (1) #1 GND IN 5"C. PROVIDE (2) 5"C SPARES. REFER TO DETAIL 3/E0723. THIS WORK SHALL BE PART OF ADD ALTERNATE #12.

4.
NEW 3/C, 500KCMIL, 15KV, 133% RATED, EPR INSULATION AND (1)#1 GND IN 5"C UG DUCTBANK. PROVIDE (3) 5"C SPARES. REFER TO DETAIL 4/E0723.

5.
NEW 600A, 15KV, 4-WAY SWITCH. REFER TO DETAIL 2/E0721.

6.
EXISTING 600A, 15KV, 4-WAY SWITCH.

7.
NEW 600A, 25KV CONNECTOR IN EXISTING VAULT. REFER TO DETAIL 5/E0721 FOR ADDITIONAL INFORMATION.

8.
PROVIDE #3/0 AWG GROUND CONDUCTOR TO MAIN ELECTRICAL ROOM GROUND BAR. REFER TO DETAIL 3/E0722 AND DRAWING E0511 FOR ADDITIONAL INFORMATION.

9.
PROVIDE OVERCURRENT DEVICE AND CIRCUIT CONDUCTORS AS RECOMMENDED BY SURGE PROTECTION DEVICE MANUFACTURER.

10.
LIGHTING INVERTER. 33KVA, 480-480/277V 3-PHASE INVERTER, WITH A 60A OUTPUT BREAKER.

11.
NEW 600A, 25KV SEPARABLE CONNECTOR. REFER TO DETAIL 5/E0721 FOR ADDITIONAL INFORMATION.

12.
FEEDER SHALL BE CONCRETE ENCASED UNDER SLAB AS SHOWN ON SHEET E0051.

13.
PROVIDE 600A, 480/277V, 3-PHASE, NEMA-3R CAM-LOCK TAP BOX FOR CONNECTION FOR PORTABLE GENERATOR SET. PROVIDE UL 1008SB LISTED LOCKABLE ENCLOSURE WITH SECURED HINGED BOTTOM. ACCESS DOOR FOR CAM-LOCK CONNECTION TO PORTABLE GENERATOR. MECHANICAL LUGS SHALL BE USED FOR 600A FEEDER TO WIREWAY. COORDINATE FINAL MOUNTING LOCATION WITH OWNER.

14.
PROVIDE 100A, 480/277V, 3-PHASE, NEMA-3R FUSED DISCONNECT SWITCH WITH 100A FUSES. COORDINATE FINAL MOUNTING LOCATION WITH OWNER.

15.
REFER TO DRAWING E0051 FOR LOCATIONS OF EQUIPMENT.

UC RIVERSIDE UNIVERSITY OF CALIFORNIA

STUDENT RECREATION CENTER EXPANSION

UC Riverside Project Number: 950523

CANNONDESIGN
1901 Avenue of the Stars, Suite 175
Los Angeles, California 90067
T: 310.229.2700
F: 310.229.2800

Baltimore ■ Boston ■ Buffalo ■ Calgary ■ Chicago
Houston ■ Los Angeles ■ Mumbai ■ New York ■ Phoenix
St. Louis ■ San Francisco ■ Shanghai ■ Toronto
Vancouver ■ Victoria ■ Washington DC

Breen Engineering
CIVIL
1983 W. 190th Street Suite 200
Torrance, CA 90504
310 464 8404

Carter Romanek Landscape Arch.Inc.
LANDSCAPE
11110 Ohio Ave. Suite 102
Los Angeles, CA 90025
310 477 3900

Saiful Bouquet, Inc.
STRUCTURAL
155 N. Lake Ave, Suite 600
Pasadena, CA 91101
626 304 2616

P2S Engineering
MECHANICAL / PLUMBING
5000 East Spring Street 8th Floor
Long Beach, CA 90815-5218
562 497 2999

Cannon Design
ELECTRICAL
Restoration Place | 829 North 1st Avenue
Phoenix, AZ 85003-1401
602.523.4004

Counsilman Hunsaker & Associates, Inc.
AQUATIC DESIGN
20725 S. W estern Ave. Suite 134
Torrance, CA 90501
310 327 1271

LICENSED ARCHITECT · STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER · ELECTRICAL · STATE OF CALIFORNIA · E19272 · EXP: 09/30/12
08/14/12

CONSTRUCTION SET

Project Record Drawing
Date:
C.W. Driver

No.	Description	Date
	CONSTRUCTION SET	30 OCT 2012
B	ADDENDUM NO. 3	12 OCT 2012
-	BID DOCUMENTS	20 AUG 2012

Drawing Title:

RISER DIAGRAM

Project No.: 03555.00 Drawn by:Author Checked by:Check

E0501

EXHIBIT C

IMAGINE - INNOVATE - INTEGRATE

November 01, 2019

John Franklin
University of California Riverside
1223 University Avenue, Suite 240
Riverside, CA 92507

Ref: Student Services Building and Student Recreation Center Building
Subject: Photovoltaic Arrays Support Study

Dear Mr. Franklin,

Per your request, SMR has performed the structural analysis and evaluation of the roof framing system for the Student Services Building and the Student Recreation Center building to determine if the roof framing systems can support the additional loads due to the addition of the photovoltaic arrays onto the roof. The roof was evaluated for the standard system with stanchions positively connected to the structural supports below and the ballast system with no positive connection to the structural supports below. The followings are our assumptions and findings.

As-built information:
The evaluation and analysis were based on the following as-builts information made available to SMR.

1. **Student Services Building:** Structural drawings prepared by KPFF dated December 15, 2006. Sheets S0.1, S1.1 to S1.3, S2.1 to S2.4, S3.1 to S3.4, S4.1 to S4.5, S5.1 to S5.5 and S6.1.
2. **Student Recreation Center Building:** Structural drawings prepared by Saiful Bouquet, Inc. dated October 30, 2012. Sheets S0001 to S-0003, S0020 to S0023, S0031 to S0035, S0101 to S101E, S102 to S102D, S103 to S103D, S0104 to S0105, S0201, S0211 to S0213, S0301 to S0304, S0401, S0501 to S0510, S0601 to S0605, S0701 to S0704 and S0801 to S0802.

Assumptions:

The followings are the assumptions used for the analysis of the buildings:
1. Roof dead loads for the existing building was assumed to be 18 psf for both buildings.
2. Total dead load for the photovoltaic array was assumed to be 5 psf to be added to the roof for standard system and 9 psf for ballast system.
3. Roof live loads was assumed to be 20 psf
4. Wind speed was assumed to be 110 mph, exposure B for the Student Services and Exposure C for the SRC building. The exposure was taken from the as-built drawings.
5. The analysis is based on AISC360-10 and 2016 CBC.
6. Photovoltaic array tilt angle was assumed to be 5%.
7. Wind load calculations for photovoltaic array are based on SEAOC publication “Wind Design for Low-Profile Solar Photovoltaic Arrays on Flat Roofs” dated August 2012.

Method of analysis:

The roof of the buildings was modeled using Ram Structural system for a three dimensional analysis software (See appendix A). The following load cases were analyzed:
1. Dead Load + Roof Live Load + Wind Loads: This load case was run without the photovoltaic arrays loads to determine the adequacy of the as-built conditions without the addition of the photovoltaic solar panels loads.

2. Dead Load + Non-Ballasted or Ballasted Photovoltaic Array Dead load + Roof Live Load + Wind Loads: This load case was analyzed to determine the adequacy of the existing roof structure with the addition of the photovoltaic dead loads and wind loads.

Conclusion:

Based on the assumptions listed above, the followings are our findings:

1. **Student Services Building:** The roof of this building is capable of supporting the additional loads due to the addition of the photovoltaic arrays for both Non-Ballasted and Ballasted systems mentioned above. Due to the concentrated loads from the stanchions of the standard system, it is recommended that the stanchions of the photovoltaic arrays are located and connected directly on of the roof beams or girders. The added dead loads are less than 10% of the total building weight. Therefore, seismic evaluation and upgrade is not required.

2. **Student Recreation Center Building:** The roof of this building is capable of supporting the additional loads due to the addition of the photovoltaic arrays for both Non-ballasted and Ballasted systems mentioned above with the following exceptions:

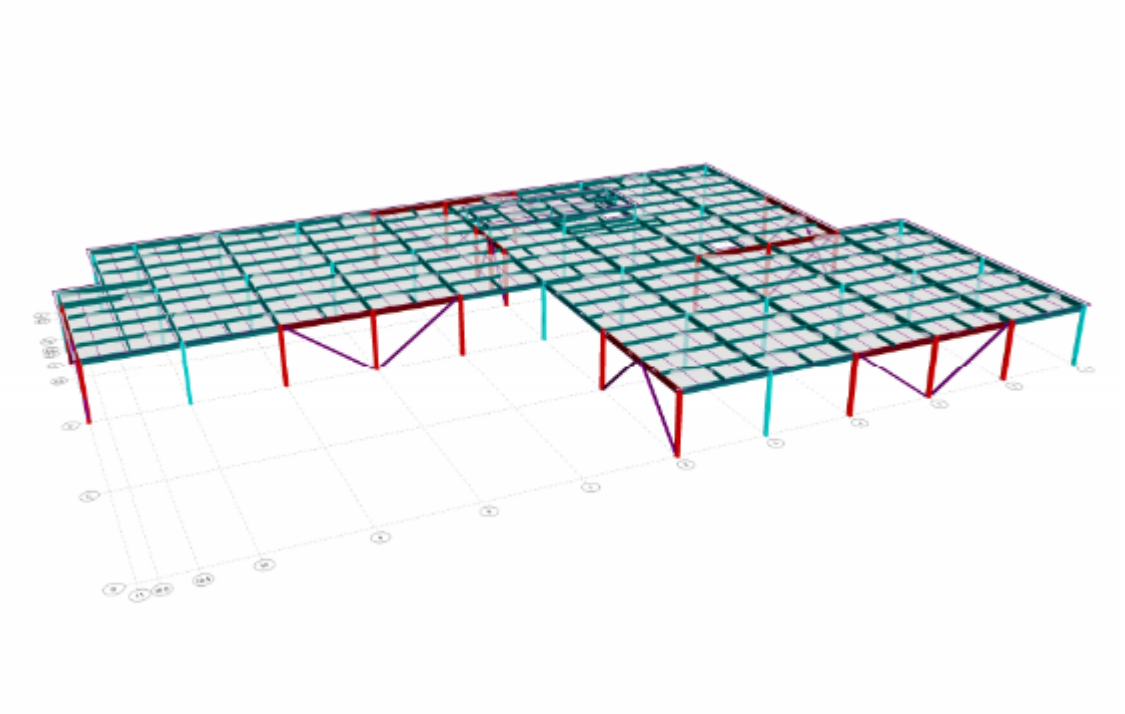
    a. The girder highlighted in red in the **Appendix B** below fails under load case 1 listed above (No photovoltaic arrays loads added). It is recommended that this beam to be reinforced with or without the addition of photovoltaic arrays.
    b. **Standard System:**
        - **i.** The girders highlighted in blue are o.k under load case 1 (See Appendix C). However, they are overstressed under load case 2. In addition, steel joists are not efficient for supporting concentrated loads from the stanchions. Therefore, photovoltaic arrays are not recommended to be added to the areas highlighted in Cyan in **Appendix C** below. However, reinforcement of the girders highlighted in blue may structurally allow full coverage of proposed PV systems on the entire roof.
        - **ii.** Photovoltaic arrays can be added to other areas of the roof provided that the stanchions are positively located and connected to the structural supports below.
    c. **Ballast system:**
        - **i.** The girders highlighted in blue are o.k. under load case 1 (See Appendix C). However, they are overstressed under load case 2 approximately by 2% to 4%. Per code, this is acceptable and they don't need to be repaired.
        - **ii.** Steel joists are efficient for supporting uniform loads. Although, this system is heavier than the standard system, the steel joists are still able to support the additional weights. Therefore, photovoltaic arrays with ballasts are acceptable to be added to the areas highlighted in Cyan in **Appendix C** below.
        - **iii.** In other areas of the roof, the spans of the deck are from 10 ft to 11ft which limit the shallow, 1 ½" thick metal deck from supporting additional loads. It is recommended that ballast system shall not be added over the roof deck. Very extensive roof renovations would be required to remedy the roof outside of the cyan area to support a ballast system throughout the entire roof.
    d. **Other Considerations:**
        - **i.** A mixed, Non-Ballasted and Ballasted, system is feasible when taking into account b.-ii, c.-i and c.-ii above.

It is our pleasure to be of service to you and UCR, please don't hesitate to contact our office if we can be of further assistance.

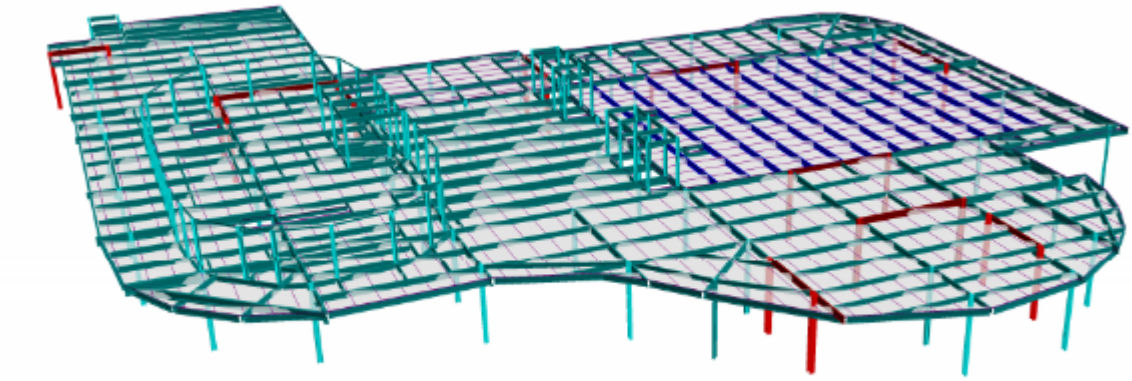
Respectfully submitted,

Hung Nguyen, S.E.
Principal Engineer

APPENDIX A

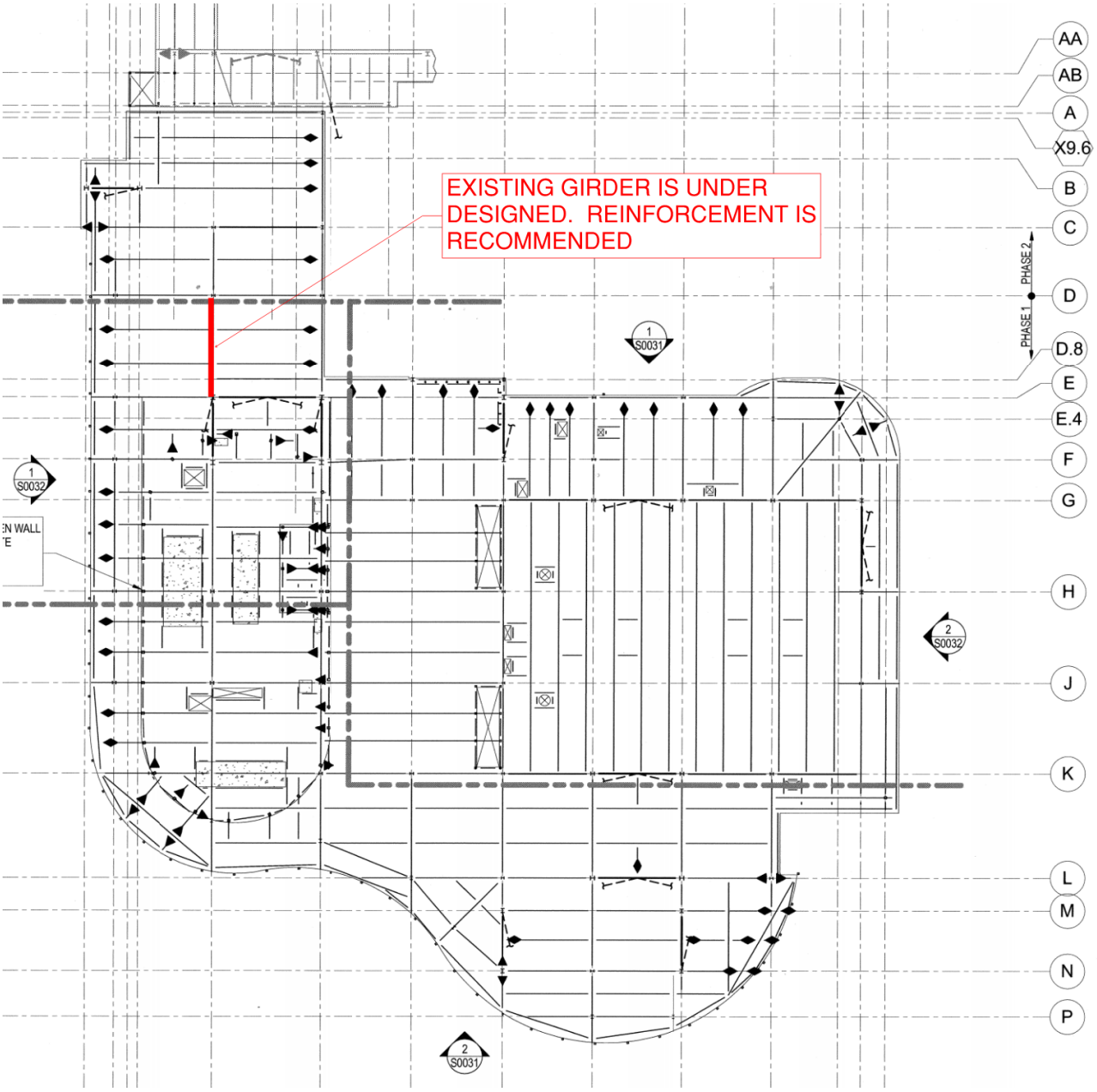


Student Services Building



Student Recreation Center Building

APPENDIX B


EXISTING GIRDER IS UNDER DESIGNED. REINFORCEMENT IS RECOMMENDED
AA
AB
A
X9.6
B
C
PHASE 2
PHASE 1
D
D.8
E
E.4
F
G
H
J
K
L
M
N
P
1 S0031
2 S0032
1 S0032
2 S0031

APPENDIX C

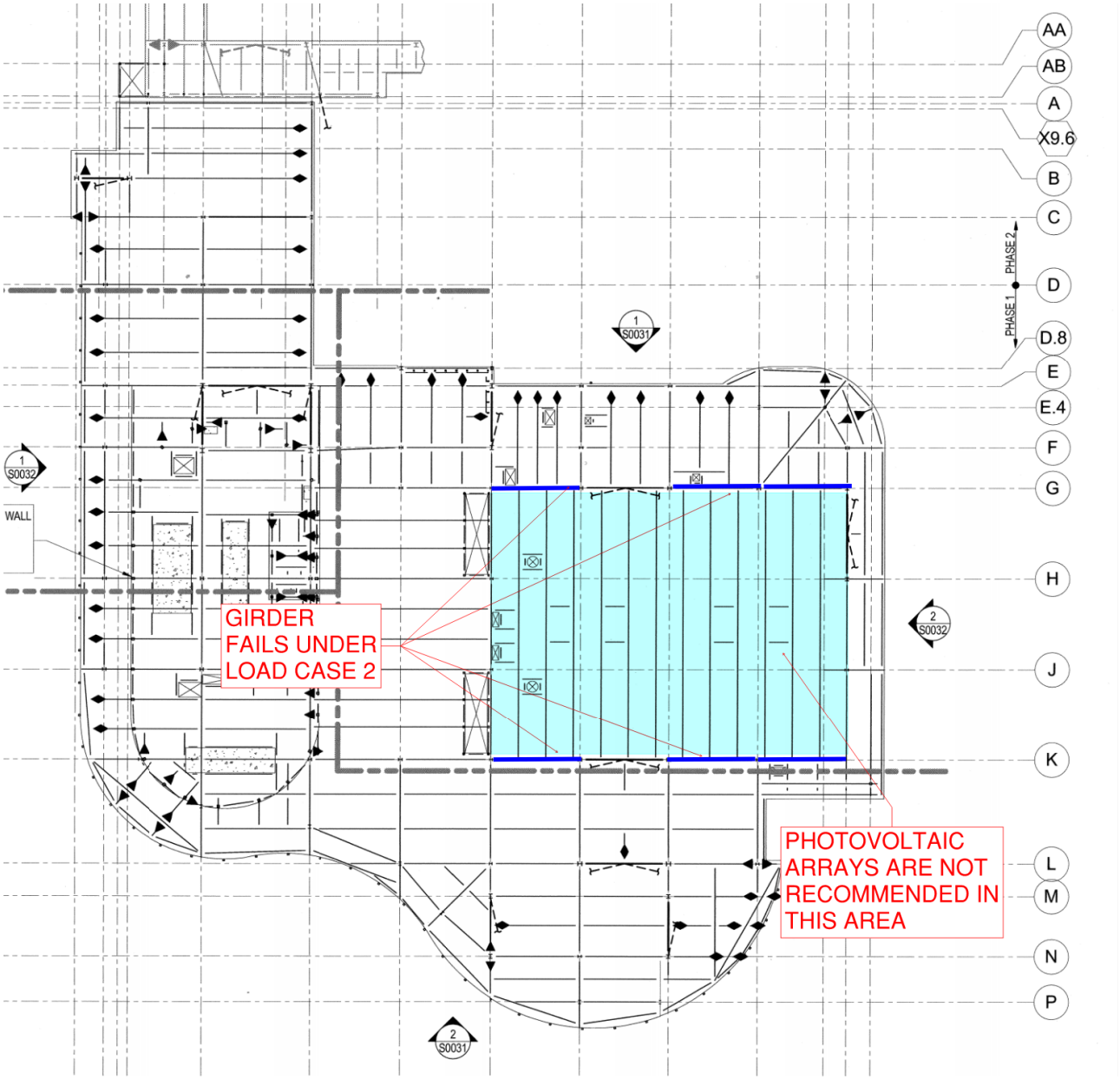
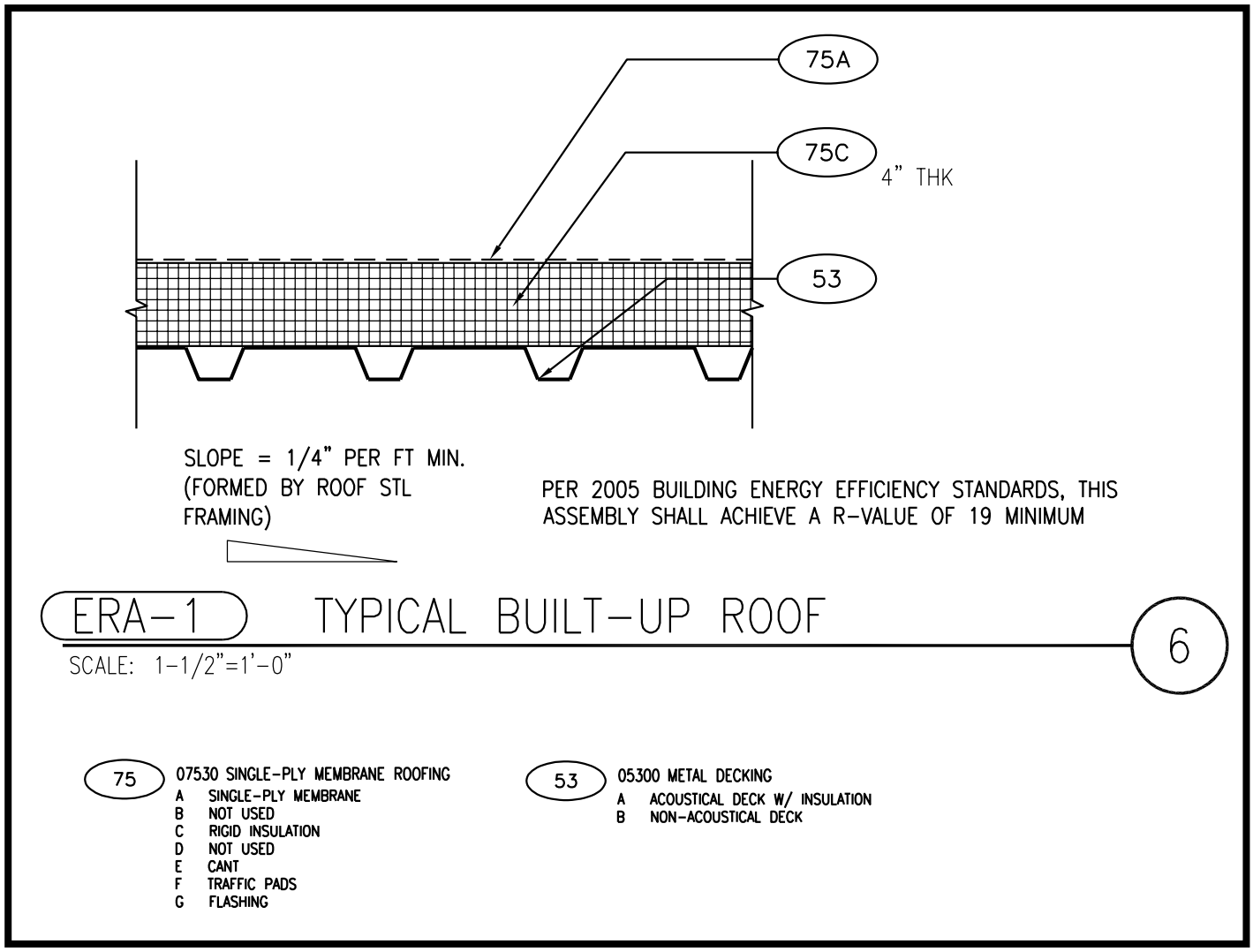

AA
AB
A
X9.6
B
C
PHASE 2
D
PHASE 1
D.8
E
E.4
F
G
H
J
K
L
M
N
P
1
S0031
1
S0032
2
S0032
2
S0031
WALL
GIRDER
FAILS UNDER
LOAD CASE 2
PHOTOVOLTAIC
ARRAYS ARE NOT
RECOMMENDED IN
THIS AREA

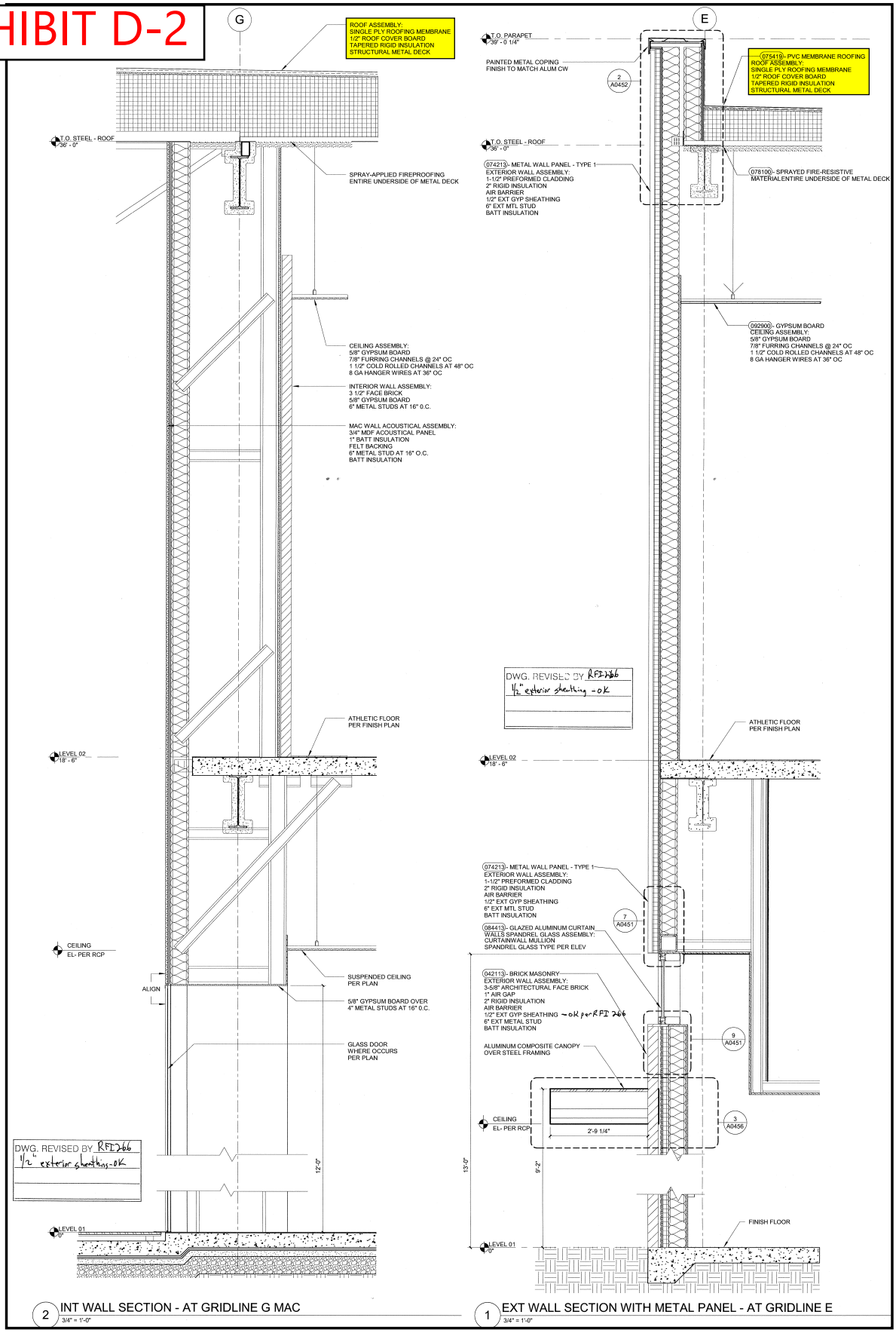
EXHIBIT D-1



Student Services:

The detail, shown above, provides insight on the construction of the existing roofing system. The detail can be found on sheet A401 of the Sasaki drawings (Record Documents dated March 2009).

EXHIBIT D-2



Student Recreation Center, South:

The two details, shown above, provide insight on the construction of the existing roofing system. The details can be found on sheet A0403 of the Cannon Design drawings (Construction Set dated October 30th, 2012).

PROJECT DIRECTORY

PROJECT NAME:	CAMPUS SOLAR ROOF INITIATIVE
PROJECT NUMBER:	950581
LOCATION:	University of California, Riverside Campus
UNIVERSITY:	The Regents of the University of California
UNIVERSITY'S RESPONSIBLE ADMINISTRATOR:	John Franklin Planning, Design & Construction University of California, Riverside 900 University Avenue Riverside, CA 92521 (951) 827-4590
ALL BIDDING AND TECHNICAL INQUIRIES SHALL BE DIRECTED ONLY TO:	Betty Osuna, Contracts Administrator Planning, Design & Construction University of California, Riverside 900 University Avenue Riverside, CA 92521 betty.osuna@ucr.edu (951) 827-4590 (951) 827-4556 (FAX)
ADDRESS FOR STOP NOTICES:	Accounting Office 900 University Avenue University of California, Riverside Riverside, CA 92507 (951) 827-1033
ADDRESS FOR DEMAND FOR ARBITRATION:	Western Case Management Center 6795 N. Palm Avenue, 2nd Floor Fresno, CA 93704
A COPY OF THE DEMAND FOR ARBITRATION MUST BE SENT TO:	University of California Office of the General Counsel 1111 Franklin Street, 8th Floor Oakland, CA 94607-5200
ADDRESS FOR DEMAND FOR ARBITRATION:	Western Case Management Center 6795 N. Palm Avenue, 2nd Floor Fresno, CA 93704

SCOPE OF WORK (Design Deliverables)

GENERAL INFORMATION

This exhibit supplements other Contract Documents in defining the scope of work of the Design Builder.

The Work shall include, unless specifically stated otherwise, all design work, labor, material, tools, equipment, testing, inspection, commissioning and all necessary general conditions, that may be reasonably inferred from the Contract Documents to provide all Design Work and Construction Work for this project.

PROJECT

Refer to the Basis of Design for specific project work scope and Section 01 1000 - Summary.

ALTERNATES

Refer to the Basis of Design for specific project work scope and Section 01 1000 - Summary

SCHEDULE

The Schedule for the Work as proposed is detailed in the Preliminary Schedule portion of this Request for Proposal.

ARTICLE 1

GENERAL PROVISIONS

1.1 PLAN CHECK CONSULTANT

The term "Plan Check Consultant" shall mean entity hired by University that is licensed in California as an engineer or architect (as applicable) and is certified by the code(s) invoking their plan check review for code compliance of the Design Work.

1.2 UNIVERSITY'S BUILDING OFFICIAL

The term "University's Building Official" shall mean the individual the University has designated to act in the capacity as the "Building Official" as defined by the California Building Code; and shall be the final interpreter of any code issues that may arise in the course of the Work. The University's Building Official will be responsible for the Code Compliance Review of the Work.

1.3 UNIVERSITY REVIEW AND APPROVAL

1.3.1 Code Compliance Review – the review conducted by the University's Building Official to review the Design Work to determine that it meets all Applicable Code Requirements.

1.3.2 Scope Compliance Review – the review by the University's Representative of the Design Work to determine that the requirements of the Contract Documents, other than elements covered by the Code Compliance Review, are met.

1.3.3 In accordance with the Design Build Agreement, each Phase is subject to review and approval by University as outlined in this exhibit. Two separate types of reviews are intended: 1) Scope Compliance Review(s); and 2) Code Compliance Review(s). The University's Building Official may, at the University Building Official's sole discretion, utilize the services of Plan Check Consultant(s) to assist in the Code Compliance Review. Once the University has approved the Design Work, any item within such approved Design Work that the Design Builder desires to subsequently change must be identified by Design Builder in the form of a submittal identifying and requesting such change; and shall not be incorporated into the Design Work until written approval is received by University.

1.4 APPLICABLE CODES, RULES, REGULATIONS, REGULATORY AGENCY APPROVALS, & INDEPENDENT REVIEW(S)

1.4.1 It is the Design Builder's responsibility to design the Project in compliance with applicable requirements of federal and state laws, codes, rules, regulations, ordinances, and standards, including, but not limited to, those outlined below. Design Builder shall have copies available of applicable codes and regulations for ready reference.

.1 California Building Standards Code, Title 24, California Code of Regulations (CCR), current adopted edition:

Part 1, Building Standards Administrative Code
Part 2, California Building Code

Architectural
Civil
Structural/Seismic
Electrical
Cost
Fire/Code
General Constructability

1.5 CAMPUS STANDARDS AND PROJECT PLANNING GUIDELINES

1.5.1 The University has established certain Campus Standards and Project Planning Guidelines (Design Criteria) that shall be followed and incorporated into the Work during the design and construction of all components of this project. A detailed description of these standards and criteria is contained in separate volumes accompanying this Request for Proposal. The University's Representative shall be the sole interpreters of the meaning and intent of these standards and criteria. Any and all questions regarding their meaning and intent shall be directed to:

John Franklin
Senior Project Manager
University of California, Riverside
Planning, Design & Construction
1223 University Avenue, Suite 240
Riverside, CA 92507
john.franklin@ucr.edu
Telephone: (951) 827-1270

1.5.2 Deviations from these standards shall not be allowed without prior written approval from UCR Planning, Design & Construction Any deviations proposed by the Design Builder shall be clearly identified in the matrix included with this RFP. The Contract's Base Bid Proposal shall include the cost to apply all standards and design criteria not otherwise deleted, notwithstanding any omission in the Construction Documents of details and/or specifications that directs Campus Standards and Project Planning Guidelines. After the Award of Contract product substitutions proposed by the Design Builder shall be made according to Specification Section 01 6000.

1.6 ENERGY ANALYSIS REQUIREMENTS – Not Used

University Campus Standards and/or Master Specification documents are silent on a subject. Design Builder shall review the PPG to determine the extent to which the various sections and paragraphs are applicable. The sole intent of the PPG is to provide campus-wide consistency in quality and application. Requirements specifically outlined in the project RFP and Basis of Design documents shall overrule information identified in the PPG.

1.9.3 University's specifications establish minimum quality and design criteria to be maintained. Design Builder shall review the specifications to determine the extent to which the various sections and paragraphs are applicable. Where, in the opinion of Design Builder, modifications in either format or terminology are required, Design Builder shall mark the modifications in the specifications for University attention, review, and approval. The specifications are not intended to limit Design Builder's discretion to specify products, materials, or construction methods and procedures. The provisions of the specifications established by University shall not diminish from Design Builder's responsibility to prepare the Construction Documents

1.10 PARTNERING

The University and Design Builder will cooperate and participate fully in partnering at all levels and among all the parties involved in this project, and at their own expense. Partnering shall mean both formal and informal interaction between and among all the parties involved in the project including, but not limited to, University Representatives, the Design Builder, design professional's, subDesign Builders and outside entities as designated by the University to promote the desired goal of a successful, non-adversarial completion of the project within the contract time and contract sum. The requirement for partnering shall not be construed as a change in the terms or conditions of the Design Build Agreement. The Design Builder shall be responsible for partnering activities during the construction documents phase and the construction phase. The Design Builder shall include representation of the professional entities preparing the construction documents and the construction subDesign Builders, as appropriate. The Design Builder shall bear the cost of the partnering activities such as meeting rooms and facilitator(s). The Design Builder shall plan for partnering sessions during the construction documents phase and during the construction phase at 6 month intervals or as agreed to. Partnering sessions are professionally facilitated off-site meetings involving the representatives of the project team for the purposes of team building and problem solving. The Design Builder and the University shall agree on the selection of the partnering facilitator and attendees.

1.11 SHOULDER-TO-SHOULDER REVIEW PROCESS

The Shoulder-to-Shoulder review process shall be implemented in an effort to enhance and accelerate the review and approval process of submittal documents required during the Design Development, Construction Documents, and Construction phases.

The Shoulder-to-Shoulder review process consists of multiple (more frequent) live and active workshops involving all decision makers (Design Builder, Engineers of Record, Specialty Design Builders, Specialty Consultants, PD&C, Campus Fire Marshal, University-employed consultants, and user group) where real-time decisions and approvals are accomplished. The Design Builder shall be responsible for staffing Shoulder-to-Shoulder review sessions with key personnel from the appropriate design disciplines to accommodate timely approvals.

1.12.1.1 MM4.3-1(a): For each construction project on the campus, the project Design Builder will implement Programs and Practices 4.3-2(a) and 4.3-2(b). In addition, the following PM10 and PM2.5 control measure shall be implemented for each construction project:

1.12.1.1.1 Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance.

1.12.1.2 MM4.3-1(b): For each construction project on the campus, the University shall require that the project include a construction emissions control plan that includes a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used for an aggregate of 40 or more hours during any portion of the construction project. During construction activity, the Design Builder shall utilize CARB certified equipment or better for all on-site construction equipment according to the following schedule:

1.12.1.2.1 All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the Design Builder shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

1.12.1.2.2 A copy of each unit's certified specification, BACT documentation and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit or equipment.

1.12.1.2.3 Encourage construction Design Builders to apply for AQMD 'SOON" funds. Incentives could be provided for those construction Design Builders who apply for AQMD "SOON" funds. The "SOON" program provides funds to accelerate clean-up of off-road diesel vehicles, such as heavy duty construction equipment. More information on this program can be found at the following website: http://www.aqmd.gov/tao/implementation/soonprogram.htm

The Design Builder shall also implement the following measures during construction:

1.12.1.2.4 Prohibit vehicle and engine idling in excess of 5 minutes and ensure that all off-road equipment is compliant with the California Air Resources Board's (CARB) in-use off-road diesel vehicle regulation and SCAQMD Rule 2449.

1.12.1.2.5 Configure construction parking to minimize traffic interference. Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.

(vii) Sweep streets at the end of the day if visible soil material is carried over to adjacent roads

(viii) Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip

(ix) Apply water three times daily or chemical soil stabilizers according to manufacturers' specifications to all unpaved parking or staging areas or unpaved road surfaces

(x) Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads

1.12.1.4 MM4.4-4(a) Prior to the onset of construction activities that would result in the removal of mature trees that would occur between March and mid-August, surveys for nesting special status avian species and raptors shall be conducted on the affected portion of the campus following USFWS and/or CDFG guidelines. If no active avian nests are identified on or within 250 feet of the construction site, no further mitigation is necessary.

1.12.1.5 MM4.4-4(b) If active nests for avian species of concern or raptor nests are found within the construction footprint or a 250-foot buffer zone, exterior construction activities shall be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation have been developed and implemented in consultation with USFWS and CDFG.

1.12.1.6 PP 4.7-7(a) To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available, the campus shall provide a temporary traffic signal, signal carriers (i.e., flag-persons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway segment, the campus shall provide appropriate signage indicating alternative routes.

1.12.1.7 PP4.7-7(b) To maintain adequate access for emergency vehicles when construction projects would result in roadway closures, the Office of Design and Construction shall consult with the UCPD, EH&S, and the RFD to disclose roadway closures and identify alternative travel routes.

1.12.1.8 PP4.10-2 The UCR campus shall limit the hours of exterior construction activities from 7:00 a.m. to 5:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday when necessary. Construction traffic shall follow transportation routes prescribed for all construction traffic to minimize the impact of this traffic (including noise impacts) on the surrounding community.

1.12.1.9 MM4.10-2 The Campus shall notify all academic and residential facilities within 300 feet of approved construction sites of the planned schedule of vibration causing activities so that the occupants and/or researchers can take necessary precautionary measures to avoid negative effects to their activities and/or research.

ARTICLE 2

PHASE 1 – SCHEMATIC & DESIGN DEVELOPMENT PHASE

2.1 GENERAL

2.1.1 Upon receipt from the University of the Notice To Proceed (NTP) the Design Builder shall review the RFP and advise the University of any items requiring further clarification or direction from the University.

2.1.2 Within seven (7) calendar days after contract award, prior to commencing work, and at a specific time and place to be determined by the University's Representative, meet with the University's Representatives for a Post Award kickoff meeting(s). The goals of the kickoff meeting are:

.1 To integrate the Design Builder and the University's Representative's into the project team.
.2 To achieve consensus from the project team on any issues and concerns remaining following the completion of the Award of the Contract.
.3 To confirm requirements of the Basis of Design (detailed project program requirements) are understood and any requirements incorporated into the Division 02 through 33 of the Specifications.
.4 To mark and obtain approval of the conformed documents and specification, including addenda and questions and answers issued during the bidding process.
.5 To establish and explain policies and procedures for completion of a successful design.
.6 To establish clear lines of communication and points of contact for University and Design Builder team members.
.7 To review impact and issues that may arise from the acceptance of alternates.
.8 To review the Design Builder's technical proposal and any outstanding questions or comments resulting from the University's technical review.

2.1.3 The following Design Builder key personnel shall attend the kickoff meeting: Project Manager, Architect/Engineer Designer of Record (Design Professional), Superintendent and QC Manager. Optional attendees include: Design Builder Principal-in-Charge, Assistant Project Manager, major subDesign Builders and specialized supplemental QC personnel.

2.1.4 At the kickoff meeting the Design Builder shall present and submit for acceptance a Preliminary Contract (Bar-Chart) Schedule as described in Section 01 3200 – Construction Progress Documents to allow attendees to prepare for key future milestone events. The Design Builder, assisted by the Design Professional, shall lead discussions to develop an understanding of the accepted technical proposal and conduct a working session to develop any site and floor plans changes.

2.1.5 Design Builder shall prepare documents including, but not limited to, redline mark-ups of a set of Bid Documents and an itemized list of those items requiring clarification or further direction. Based upon the results of this meeting Design Builder shall complete Schematic Design drawings illustrating the clarifications and agreed upon direction for the design.

2.2.8 Reference drawings and existing site plan and utilities are provided for information only. Actual conditions of the existing conditions may vary from those depicted on the reference documentation. The Design Builder shall field verify reference documentation and data prior to use in the design. Reference drawings are provided as attachments to the Request for Proposals (RFP).

2.2.9 Field verification of information and data provided by the University is the responsibility of the Design Builder. The University will provide coordination of access, but all tests, observations, examinations, recording of data, equipment, supplies, materials and associated labor needed by the Design Builder in order to field verify University furnished data must be provided by the Design Builder. The University will not provide resources needed by the Design Builder to accomplish field verification of data and/or information provided by the University.

2.2.10 Schematic and Design Development Meetings: University's Representative will schedule Design Progress Meetings (potentially a whole day) after each submittal to determine the progress of the Design Development portion of the project.

.1 Attendees: The University's Representative and University's Consultants; the Design Builder's Design Professionals, the Design Builder's Senior Officer, Project Manager, and others as directed by the University's Representative.
.2 Agenda: Design Builder shall prepare to discuss items of significance that could affect the completion of the Design Development Drawings and Specifications and have a major impact of the quality, cost and overall schedule for the Work. Go over comments made by University's Representative. Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
.3 Minutes: Record and distribute meeting minutes.
.4 Location: UCR PD&C office or as directed.

2.3 DESIGN SUBMITTALS

2.3.1 There are two categories of design submittal packages

.1 Early Start Design Submittal Packages for construction activities that will begin prior to the acceptance of the Final Design, and

.2 Required Design Submittal Packages that are comprehensive, fully coordinated, multi-discipline packages.

2.3.2 Early Start Design Submittal Packages.

.1 Early Start Design Submittal Packages should be limited to project elements that can be shown to impact the critical path of the Contract Schedule per Section 01 3200 – Construction Progress Documents, requiring construction to begin prior to the University acceptance of the Final Design. An Early Start Design Submittal Package shall include all Design Analyses, Calculations, Drawings, Specifications and Product Data required to fully describe the project element for University review. Early Start Design Submittal Packages may be proposed by the Design Builder as part of the Preliminary Contract Schedule that is presented and discussed during the Post Award Kickoff Meeting. Examples of project elements that may be submitted as Early Start

.2 To improve coordination through early collaboration of designers and sub-Design Builders, and

.3 To speed construction by eliminating the need for submittal and acceptance of shop drawings after construction has begun.

.7 Therefore, the Design Builder is encouraged to prepare and submit (with the design documents) appropriate composite, coordination, connection, fabrication, layout, and other project specific drawings.

2.4 SUSTAINABLE DESIGN – NOT USED

2.5 POST CONSTRUCTION STORM WATER MANAGEMENT – NOT USED

2.6 DESIGN ANALYSES

2.6.1 Prepare design analyses (consisting of a basis of design and calculations) for each architectural and engineering design discipline. The design analyses shall include a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering principles. A design analysis for each discipline shall be provided with each design package and shall include:

.1 A basis of design consisting of:
- .1 An introductory description of the project concept that addresses the salient points of the design;
- .2 A Code and Criteria search, identifying governing codes and regulations, and providing calculations reflecting sizing of exit ways and means of egress demonstrating compliance with the results of the Code and Criteria search.
- .3 An analysis of scope included in the Project design, including square footage areas provided in response to the Project RFP requirements;
- .4 An orderly and comprehensive documentation of criteria and rationale for building and infrastructure systems selections; and
- .5 The identification of any necessary licenses and permits that are anticipated to be required as a part of the design and/or construction process.

.2 Calculations as needed to support the design. However, calculations supporting the structural, mechanical and electrical systems incorporated into the design and construction of the facility shall be completed to the level appropriate with the submittal and updated with each additional submission.

2.6.2 Format

.1 A Basis of Design shall be submitted to the University's Representative. The Basis of Design is for information only, but will be utilized by the University's Representative to verify compliance with the requirements of the Contract. The Basis of Design for each design discipline shall include a cover page indicating the project title and location, project number, table of contents, and tabbed separations for quick reference. Each part of the design analysis shall be prepared on 8.5 x 11 inch or 8.5 x 17 inch with a tri-fold white paper and shall be bound in separate volumes for each design discipline. Multiple volumes for individual disciplines, appropriately numbered, may be provided when needed. Organize as follows:
- .1 Civil
- .2 Structural

- Studies shall include all portions of electrical distribution system from primary of service transformers down to and including 480 V and 208V distribution system. Normal system connections and those which result in maximum fault condition shall be adequately covered in the study.

.3 Panel schedules.

.4 Study Report:

.1 Summarize results of system study in a final report. Submit five bound copies of final report.

.2 Include the following sections in the report:

- Description, purpose, basis and scope of study and single line diagram of that portion of power system which is included within scope of study.
- Tabulations of circuit breaker, fuse and other protective device ratings versus calculated short circuit duties and commentary regarding the same.
- Protective device time versus current coordination curves, tabulations or relay and circuit breaker trip settings, fuse selection and commentary regarding the same.
- Fault current calculations including a definition of terms and guide for interpretation of computer printout.

.3 Protective Device Testing, Calibration and Adjustment: Equipment manufacturer shall provide the services of a qualified field engineer and necessary and adjust the protective relays and circuit breaker trip devices as recommended in the power system study.

2.7 SPECIFICATION

2.7.1 Design Builder shall review the technical specifications for the project, CSI Divisions 03 through 33 based upon the materials, products and equipment as well as any modifications in installation procedures forming the basis of the bid proposal. Changes and additions to the specifications shall be made with the Microsoft Word “Track” changes feature to show additions in “Bold” and deletions with crossed out text. Any changes made without this type of indication to the University’s reviewers shall be considered not acceptable. Therefore, the University will furnish the Word files as a protected document to restrict editing and allow for a quicker review. All edits will be tracked.

2.7.2 Campus master specifications contain requirements describing functional requirements for the project, and describing materials, products, and systems for the project, along with criteria for verifying compliance. References quoted in Campus master specifications shall be understood to be the published and dated version of the reference in effect as of the Contract Bid Date.

2.7.3 The design professional is responsible for preparing the final edited specifications that are coordinated with the drawings, in compliance with the RFP and UCR Campus Standards and Project Planning Guidelines. The specifications and standards given in the RFP establish the minimum requirements acceptable to the University. Edits that reduce the quality, materials or workmanship will not be acceptable.

2.7.4 Not every type of material or product specification section may be included. Add sections as needed for the work and design features that the Design Build Team has selected.

2.7.5 MasterSpec by Arcom, Inc is the basis of the University’s Master Specification sections. You may use the Masterworks program to edit the documents if your firm has purchased the system.

2.7.6 Do not change the specification footers, section number or title. Do not delete or change the style features. This will retain the automatic paragraph numbering and formatting of the document.

2.8 When specifications are submitted to the University they shall be printed showing Track Changes. Where text in the document is in brackets and bold, this indicates an option has to be selected by the editor. Delete the options not required and delete the brackets and remove bold formatting of the text that remains.

2.8.1 For example, [**Text1**] [**Text2**] [**Text3**] could be edited to become ~~[~~**~~Text1~~**~~] [~~**~~Text2~~**~~]~~ ~~[~~Text3~~]~~ (with the "Display for Review" set to "Final Showing Markup."

2.8.2 Do not use the "strikeout" mode in Fonts to delete text. Use cut, delete, or backspace to delete text and with track changes setting the text will be shown with a strikeout.

2.8.3 Use the "Increase Indent" and "Decrease Indent" on the "Formatting" toolbar to revise paragraph subordinate level.

The following are the styles used for the University's master specification sections:

Style Name	Description
PRT = Level 1	A paragraph in hidden text that corresponds to the Part titles.
ART = Level 2	The style used for the Article titles.
DST = Level 3	An outline level used only in sections that contain Data Sheets and is used for the Data Sheet title.
PR1 = Level 4	Paragraph level 1 follows Article titles and Data Sheet titles. Number style is an uppercase letter. *Example:* A.
PR2 = Level 5	Subparagraph level 2 follows a paragraph level 1 and is a number followed by a period. *Example:* 1.
PR3 = Level 6	Subparagraph level 3 follows a Subparagraph level 2 and is a lowercase letter followed by a period. *Example:* a.
PR4 = Level 7	Subparagraph level 4 follows a subparagraph level 3 and is a number followed by a parenthesis. *Example:* 1)
PR5 = Level 8	Subparagraph level 5 follows a subparagraph level 4 and is a lower case letter followed by a parenthesis *Example:* a)

2.8.4 For those alternates accepted by the University the Design Builder shall coordinate any materials defined as part of the alternate and provide modified or new specification section(s) for those items not identified in the Contract Documents. The specification sections shall include the following:

.1 An index showing all divisions and with any sections intended to be added.
.2 Section(s) of equipment, products or materials not included in the RFP.

2.8.5 It is the University's intent that the procurement process shall be streamlined by encouraging final product and material selections during the design phase in lieu of the use of prescriptive construction specifications and submittals following the completion of the design phase. Submit manufacturer's data sheets for materials, equipment, fixtures, devices, and systems that will be provided, clearly marked to indicate the exact item(s) to be included in the construction. Prepare prescriptive construction specifications only for those materials,

ARTICLE 3

PHASE 2 – CONSTRUCTION DOCUMENTS PHASE

3.1 GENERAL

3.1.1 The construction documents phase submittal shall include, at minimum, all items that are required for the Design Development Phase and those that are enumerated in Phase 1 submittal review Comments prepared by University's Representative. Working drawings shall show all elements previously shown on the Design Development documents with greater detail and specificity.

3.1.2 Upon University's written Notice to Proceed for Phase 2, and based on Design Development Phase documents approved in writing by University, the Design Builder shall prepare for approval by University, Construction Documents consisting of Drawings and Specifications setting forth in detail the requirements for the construction of the project. The Construction Documents shall describe the quality, configuration, size and relationships of all components to be incorporated into the project. The Construction Documents shall be consistent with the Contract Documents.

3.1.3 The Work of this phase is subject to independent reviews, both internal and external, and value engineering.

3.1.4 Design Builder shall submit construction documents to the University Representative for Scope Compliance and Code Compliance Review. Design Builder shall re-submit the documents for back check by the University Representative and other applicable agencies after corrections are made to the 100% submittal for Scope Compliance and Code Compliance Review or at the University's option, the drawings will be edited with corrections required by contract. The Design Builder shall comply with these comments without exception or continue to re-submit the documents until written approval from the University's Representative is obtained for Scope Compliance and Code Compliance.

3.1.5 Upon completion of the Construction Documents, Design Builder shall submit at each phase for University's review and comment 10 copies each of the Construction Documents, a summary of the calculations, and detailed calculations, for the structural, electrical, communications, and other specialized building system calculations and specifications. This shall include computer printout to show compliance with the California Energy Code.

3.1.6 The Construction Documents submittals shall either incorporate any changes or corrections required by University's Representative or the applicable review agencies as a result of their review of the Documents or be accompanied by a written statement as to why such changes were not incorporated. University's Representative may reject Design Builder's explanation and require Design Builder to make the changes or corrections to the Construction Documents as previously requested by University's Representative related to its reviews. The University's Representative will be final interpreter of all code requirements, and all such decisions will be final.

3.1.7 Unless directed otherwise in writing by University's Representative the Construction Documents Phase shall not be considered 100% complete until all required agency and

The Final design, when accepted by the University, shall become an accepted deliverable under the contract. Changes to accepted design submittal packages including the final design, require prior written approval by the University's Representative. University's Representative oversight and acceptance of design submittal packages, including the final design, shall not be construed as a waiver of requirements where those requirements may have been erroneously expressed or omitted from the Design Builder prepared design documents, unless such variations have been specifically noted by the Design Builder and accepted in writing by the University's Representative.

3.1.15 Construction Submittal Register

Prepare a submittal register that lists (in table format) submittals requiring University acceptance. Include submittal description, applicable RFP Section and paragraph number, specification section and paragraph number, and planned submission date. Coordinate planned submission dates with Contract schedule required by Section 01 3200 of the RFP.

3.2 COORDINATION DRAWINGS

Coordination and Detailing Activity can be started during of the Construction Document Phase and incorporated in the final submission. Refer to Specification Section 01 3150 – Coordination and Detailing Activity.

3.3 INTERIOR AND EXTERIOR FINISHES REVIEW MEETINGS – NOT USED

3.4 100% COMPLETED SUBMITTAL REQUIREMENTS

All drawings, specifications, and other documents enumerated in Article 5 for inclusion in the prior submittals shall be further developed by Design Builder in sufficient detail as to be deemed 100% complete and constructible. Prior to submitting the 100% construction documents, Design Builder shall have thoroughly checked, coordinated, and revised all documents to bring them to 100% completed level. General Conditions shall not be included on Drawings or Schedules. Notes must coordinate with, and conform to the written Contract Documents. Products and materials specified on the drawings must be identical to the products and materials required in the written Contract Documents Specifications. In addition to the documents in prior submittals, Design Builder shall submit the items listed below for the 100% completed submittal:

3.4.1 Calculation of Areas. Design Builder shall include, with the 100% completed submittal, calculations of the gross square footage (GSF) and the assignable square footage (ASF) and shall make a direct comparison of these areas with the original Project program areas.

3.4.2 Specifications. All Division 02 through 33 specification systems shall be 100% complete. When the final specifications have been reviewed and approved by the University, Design Builder shall submit to the University final printed copies in "final" format without Tracked Changes showing.

3.4.3 Quality Control Plan. – As specified in the General Requirements. No Construction Notice to Proceed will be issued until the Quality Control Plan has been reviewed and approved by the University. The Design Builder shall prepare the Quality Control Plan to provide reasonable time for University to review and accommodate for subsequent revisions required of the

ARTICLE 4

PHASE 3 – CONSTRUCTION PHASE

4.1 CONSTRUCTION - GENERAL

The Design Builder shall provide all materials, equipment, labor, and services required by the Contract Documents to construct the Work for the Contract Sum and within the Contract Time during the Construction Phase.

Construction prior to Final Design Acceptance

Construction work cannot be started on any definable feature of work until University acceptance of design and a written authorization to commence (Notice to Proceed) the specific construction is received from the University's Representative.

4.2 COORDINATION AND DETAILING ACTIVITY

Prior to beginning any construction activity for the project Design builder shall coordinate, prepare and submit to the University coordination drawings consistent with the requirements of Division One Specification Section 01 3150 – Coordination and Detailing Activity.

4.3 TESTING AND INSPECTION

Testing and inspection shall follow the approved Quality Control Plan and the Specifications.

The Design Builder shall:

.1 Participate in punch list inspections for beneficial occupancy, substantial completion and final completion.
.2 Assist University's Representative in reviewing test and inspection results.
.3 Not authorize deviations from the Contract Documents.
.4 Where applicable, perform tasks and file reports as required by Office of Statewide Health Planning and Development.
.5 Assure the Construction Work is in compliance with the requirements of Division 01 Section 01 4000 – Quality Requirements and Specifications.

4.4 MATERIALS/COLOR SCHEDULE AND MATERIALS BOARDS – NOT USED

4.5 RECORD DOCUMENTS

.1 Any revisions or changes that have been made during construction shall be incorporated in the Record Documents. Refer to Division 01.

.7 Depict the placement of ramps and other provisions for disabled access to the site and building. Depict the parking area and drop-off location nearest the building and the routes and travel distances to all building entrances.

.8 Provide a site utilities plan that depicts existing utilities, including underground lines, located within the Project site and that depicts any proposed new utility services. Indicate the points of connection between new work and the existing utility systems.

.9 Provide a site demolition plan indicating existing structures and utilities that are to be removed. Existing demolished items shall not be shown on any new work plans.

.10 Site Utilities Plan shall include:

a) Routing of proposed new external utilities from each new building to each point of connection to the Facility's utility systems. Indicate all utility lines that are to be abandoned, removed, or rerouted.
b) Existing utilities within the Project site based on both the information provided by University and on Design Builder's field investigation.

5.2.2 Site Design

.1 Site Plan overall at 1” = 20’ showing sheet cross references and structures and elements.

.2 Civil Drawings at 1” = 10’ showing:

a) Site plan showing all paving, sidewalks, curbs, fences, parking, retainage walls, and other site improvements.
b) Prepare a site boundary and topography plan.
c) Prepare a complete site electrical plan primary power.
d) Prepare complete plans showing all associated detailing as required.

.3 Profile drawings are to be drawn at horizontal scale of not less than 1” = 50’ and vertical scale of not less than 1” = 5’. Show types, sizes, materials, and elevations of others utilities crossing the piping system. Show manholes, clean-outs and pipings.

5.3 ARCHITECTURAL REQUIREMENTS

5.3.1 General information sheets including:

.1 Architectural symbols and legends

a) Architectural abbreviations
b) Applicable codes

.2 Fire and accessibility site access drawing
.3 Fire code occupancy diagrams
.4 Fire code travel distance and existing diagrams
.5 Wall, structural and penetrations with UL assemblies noted
.6 Wall types and all pertinent information.

a) Assemblies and configuration
b) Dimensions
c) STC ratings

plan references, typical and specific detail references, isoduct (outlets, devices, references), panel boards, and other appropriate information.

.3 Locations of light fixtures, receptacles, switches, power outlets, and all circuits.

.4 Provide specific floor plan requirements to meet campus needs.

.5 Task lighting all floor plans at 1/8" = 1'-0" showing but not limited to:

.6 Telecommunication devices on floor plans at 1/8" = 1'-0" and shall include, but not limited to: all devices, dimensions of devices, cable tray layouts.

.7 Roof plan at 1/8" = 1'-0" showing but not limited to: all equipment and the connections, motor control center, lights, conduit runs, convenience outlets, general and specific notations.

5.7.5 Large-Scale Drawings (Scale: Not less than 1/4 inch = 1 foot 0 inches) showing but not limited to: all electrical rooms, all telecommunication closets, generator/pump areas. The Drawings shall include a layout of all equipment rooms to ensure that the proposed equipment will fit in the allotted space.

5.7.6 Electrical details at 1 1/2" = 1'-0" including but not limited to: telecommunications conduit details, service grounding details.

5.7.7 System Diagrams

.1 Provide a single-line electrical distribution diagram showing primary service to substations and secondary service to distribution switchboards, motor control centers, and panel boards for power and lighting. This diagram shall include and show the permanent as well as temporary points of connection to external utilities such as high-voltage, telephone, and all signal systems.

.2 Indicate each load center unit substation, motor control center, distribution switchboard, telephone equipment room, and closet. Indicate the types and locations of lighting fixtures in typical offices, laboratories, corridors, examination rooms, and similar spaces, and use a schedule for detail.

.3 Feeder and conduit sizes and a schedule of feeder breakers or switches.

.4 Electrical single line diagram showing all elements from the existing high voltage connection through individual panel boards.

.5 Fire alarm diagrams; showing all elements from the main fire alarm panel to devices.

.6 Telecommunication system diagram; showing all conduits, devices, and provisions for a complete communications system including telephone system.

5.7.8 Panel board schedules (maximum of 6 per sheet) as large as possible showing but not limited to: general panel information (mounting type, device type, device family, bus amps, enclosure type, voltage LL, voltage LG, fault duty) specific information (circ #, description location including room number, load type, unit load, load quantity, demand load, total VA load, phase, device amps, device phase, special remarks.)

5.7 FIRE SUPPRESSION DRAWINGS - NOT USED

END OF SCOPE OF WORK

DESIGN PROFESSIONAL RATE SCHEDULE FOR ADDITIONAL SERVICES

Proposer shall complete this exhibit and include in the Cost Proposal Submittal. If a category of personnel will not be used, write "not applicable" in the corresponding categories. Additional disciplines or staffing categories may be added where necessary.

DISCIPLINE	CATEGORY OVERHEAD/PROFIT %	DIRECT HOURLY RATE
DESIGN ARCHITECT/ENGINEER		
Principal Design Engineer		
Senior Design Engineer		
Design Engineer		
CAD/BIM Operator		
Sr. Spec Writer		
Spec Writer		
STRUCTURAL		
Principal Engineer		
Senior Engineer		
Engineer		
CAD/BIM Operator		
Sr. Spec Writer		
Spec Writer		

DISCIPLINE	CATEGORY OVERHEAD/PROFIT %	DIRECT HOURLY RATE
ELECTRICAL		
Principal Engineer		
Senior Engineer		
Engineer		
Junior Engineer		
CAD/BIM Operator		
Draftsmen		
Sr. Spec Writer		
Spec Writer		

DISCIPLINE	CATEGORY OVERHEAD/PROFIT %	DIRECT HOURLY RATE
OTHER		
OTHER		

PROPOSAL

Proposals shall include documents required by the Request for Proposal, Technical Proposal, and Lump Sum Base Price Proposal sections of this RFP.

Incorporation of Proposal into the Contract:

The selected Proposer's proposal shall be incorporated into and shall be an integral part of the Contract.

THE PROPOSAL SHALL NOT CONTAIN ANY CONDITIONAL OFFERS OR ADDITIONAL CONTRACT TERMS AND CONDITIONS.

UNIVERSITY FURNISHED INFORMATION

The following information is made available for the convenience of Proposers and is not a part of the Contract. The information is provided subject to the provisions of subparagraph 3.1.1 of the General Conditions.

Issued via Weblink

PREVAILING WAGES

General Prevailing Wage Determinations and information can be accessed at www.dir.ca.gov or by contacting University's principal Facility office.

Advertisement Date: May 8, 2020

DESCRIPTION			
No.	**Title:**	**Prepared by:**	**Date:**
01.	**UCR POLICIES, GUIDELINES & STANDARDS**		
A.	UCR CAD Standards		May 2017
02.	**UCR ROOF WARRANTIES**		
A.	15 Year System Warranty	Student Recreation Ctr.	July 2014

EXHIBITS TABLE OF CONTENTS

Exhibit No.	Exhibit Title
1	Certificate of Insurance
2	Payment Bond
3	Performance Bond
4	Application for Payment/Certificate for Payment (Schedules 1 – 4)
5A	Selection of Retention Options
5B	Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention
6	Submittal Transmittal
7	Change Order Request
8	Field Order
9	Change Order
10A	Conditional Waiver and Release Upon Progress Payment
10B	Unconditional Waiver and Release Upon Progress Payment
11A	Conditional Waiver and Release Upon Final Payment
11B	Unconditional Waiver and Release Upon Final Payment
12	The Regents of the University of California Master Builder's Risk Program
13	Final Distribution of Contract Dollars
14	Self-Certification
15	Intent to File Notice of Completion
16	Report of Subcontractor Information
17	Not Used
18	Application for Retention Release
19	Not Used
20	Bulletin
21	Request for Information
22	Letter of Instruction
23	Material/Product Substitution Request
24	Inspection Request
25	Not Used
26	Schedule of University Inspections
27	List of Manufacturers
28	Project Punch List (Exterior/Interior)
29	Notification for Equipment Demonstration and Training
30	Certificate of Beneficial Occupancy
31	Certificate of Substantial Completion
32	General Contractor Claim Certification
33	Subcontractor Claim Certification
34	Expanded List of Subcontractors
35	Completed Project Document Transmittal

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ACORD®

CERTIFICATE OF LIABILITY INSURANCE

(for non-UCIP Construction Projects and Consultant/Design Contracts)

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A :	
	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY ☐ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC						
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS						
	☐ **UMBRELLA LIAB** ☐ OCCUR ☐ **EXCESS LIAB** ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $						
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	**N/A**					☐ WC STATU-TORY LIMITS ☐ OTH-ER
	PROFESSIONAL LIABILITY ☐ OCCUR ☐ CLAIMS-MADE						

Special Provisions:

1. The Regents of the University of California, The University of California, University, and each of their Representatives, consultants, officers, agents, employees, and each of their Representative's consultants, are included as additional insureds on the general liability policy as required by contract and pursuant to additional insured endorsement CG2010 (11/85) or a combination of both CG 2010 (10/01 or 07/04) and CG 2037 (10/01 or 07/04) but only in connection with Campus Solar Roof Initiative Project No. 950581, Contract No. 950581-DB-2020-68.
2. The General Liability coverage contains a Severability of Interest provision and shall be primary insurance as respects The Regents of the University of California, its officers, agents and employees. Any insurance or self-insurance maintained by The Regents of the University of California shall be excess of and non-contributory with this insurance.

CERTIFICATE HOLDER: The Regents of the University of California

Forward to: UCR CAPITAL PROGRAMS PLANNING, DESIGN & CONSTRCUTION, ATTN: CONTRACTS 1223 UNIVERSITY AVENUE, SUITE 240 RIVERSIDE, CA 92521	**SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.** ***AUTHORIZED REPRESENTATIVE***

UCR | Planning, Design & Construction

PAYMENT BOND

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The Regents of the University of California ("The Regents") has awarded to _____ as Principal a contract dated the _____ day of, _____, 2020 (the "Contract") for the work described as follows:

CAMPUS SOLAR ROOF INITIATIVE
PROJECT NO. 950581

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;

NOW, THEREFORE, we, the undersigned Principal and _____ Surety, are held and firmly bound unto The Regents in the sum of:

_____

for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by The Regents, or its subcontractors shall fail to pay any of the persons named in State of California Civil Code Section 9100, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall become and be null and void.

This bond shall inure to the benefit of any of the persons named in State of California Civil Code Section 9100 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder.

Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with the Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing The Regents' rights against the other.

In the event suit is brought upon this bond, the parties not prevailing in such suit shall pay reasonable attorneys' fees and costs incurred by the prevailing parties in such suit.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 2020

Principal: _____
(Name of Firm)

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

Surety: _____
(Name of Firm)

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

Address for Notices: _____

_____

_____

_____
(Phone Number)

_____
(Fax Number)

_____
(Email)

NOTE: Notary acknowledgment for Surety and Surety's Power of Attorney must be attached.

UCR | Planning, Design & Construction

PERFORMANCE BOND

Bond No. _____

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The Regents of the University of California ("The Regents") has awarded to _____ as Principal a contract dated the _____ day of, _____ 2020, (the "Contract") for the work described as follows:

CAMPUS SOLAR ROOF INITIATIVE
PROJECT NO. 950581

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof;

NOW, THEREFORE, we, the undersigned Principal and

_____ Surety,

are held and firmly bound unto The Regents in the sum of:

_____

for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by The Regents, shall promptly and faithfully perform the covenants, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by The Regents, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless The Regents as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this Bond or in any way affect the obligation of this Bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

Whenever Principal shall be and declared by The Regents to be in default under the Contract, Surety shall promptly remedy the default, or shall promptly:

1. Undertake through its agents or independent contractors, reasonably acceptable to The Regents, to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages, or, at Surety's election, or, if required by The Regents,

2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and, upon determination by The Regents of the lowest responsible bidder, arrange for a contract between such bidder and The Regents and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance

of the Contract Sum," as used in this paragraph, shall mean the total amount payable by The Regents to the Principal under the Contract and any amendments thereto, less the amount paid by The Regents to Principal.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing The Regents' rights against the others.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than The Regents or its successors or assigns.

Surety may join in any arbitration proceedings brought under the Contract and shall be bound by any arbitration award.

In the event suit is brought upon this Bond by The Regents, Surety shall pay reasonable attorney's fees and costs incurred by The Regents in such suit.

Correspondence or claims relating to this Bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 2019.

Principal: _____	Surety: _____
(Name of Firm)	*(Name of Firm)*
By: _____	By: _____
(Signature)	*(Signature)*
_____	_____
(Printed Name)	*(Printed Name)*
_____	_____
(Title)	*(Title)*

Address for Notices: _____

_____

_____

_____

(Phone Number)

_____

(Fax Number)

_____

(Email)

NOTE: Notary acknowledgment for Surety and Surety's Power of Attorney must be attached.

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Project Name: Campus Solar Roof Initiative
Project Number: 950581
Contract Number: 950581-DB-2020-68

APPLICATION FOR PAYMENT

Application No. _____ Period From: _____ To: _____

Application Date: _____ Contract Date: _____

To **University**: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,
University of California, Riverside, and University's Representative

From Contractor: _____

Address: _____

_____

CHANGE ORDER SUMMARY:		Additions	Deductions
Change Orders approved in previous months:	Total:		$0.00
Change Orders approved this month:			
Number:	Date Approved:		
	Total:	$0.00	$0.00

NET CHANGE BY CHANGE ORDERS: $0.00

Application is made for payment under the Contract as shown below and in Schedule 1 attached hereto:

1.	ORIGINAL CONTRACT SUM		$0.00
2.	NET CHANGE BY CHANGE ORDERS		$-
3.	CONTRACT SUM TO DATE (Line 1 ± Line 2)		$0.00
4.	TOTAL AMOUNT COMPLETED TO DATE (Column E on Schedule 1)		$0.00
5.	RETENTION: 5 % of Completed Work (Column H on Schedule 1)*		$0.00
	a. Current Value of Securities Deposited in Escrow		
	b. Current Value of Retention Deposited in Escrow	$0.00	
	c. Retention Held by University		
	Current Retention Value (a + b + c)	$-	
6.	TOTAL EARNED LESS RETENTION (Line 4 less Line 5)		$0.00
7.	TOTAL AMOUNT PREVIOUSLY PAID	$0.00	
8.	CURRENT PAYMENT DUE (Line 6 less Line 7)		$0.00
9.	BALANCE TO FINISH, PLUS RETENTION (Line 3 less Line 6)		$-

*Pursuant to Article 9.2.2 of the General Conditions.

The undersigned Contractor hereby represents and warrants to University that all Work, for which Certificates For Payment have previously been issued and payment received from University, is free and clear of all claims, stop notices, security interests, and encumbrances in favor of Contractor, any Subcontractor, and any other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment related to the Work.

The following Schedules are attached and incorporated herein, and made a part of this Application For Payment:

Schedule 1 Cost Breakdown Schedule
Schedule 2 Certification of Current Market Value of Securities in Escrow in Lieu of Retention
Schedule 3 List of Subcontractors
Schedule 4 Declaration of Releases of Claims

Contractor: _____

By: _____
(Signature & Date)

_____
(Print Name & Title)

DECLARATION

I, _____, hereby declare that I am the
(Print Name)

_____ of Contractor submitting this Application For
(Title)

Payment; that I am duly authorized to execute and deliver this Application For Payment on behalf of Contractor; and that all information set forth in this Application For Payment and all Schedules attached hereto are true, accurate, and complete as of its date.

I declare, under penalty of perjury, that the foregoing is true and correct and that this declaration was subscribed at _____, _____,
(City) (County)

State of _____ on _____.
(Date)

_____
(Signature & Date)

_____
(Print Name & Title)

ProjectName:	Campus Solar Roof Initiative
ProjectNumber:	950581
ContractNumber:	950581-DB-2020-68

SCHEDULE1

COSTBREAKDOWN

TO

APPLICATIONFORPAYMENT

Application No. ______________________ Period From: ______________ Period to: ______________

Application Date: ______________________ Contract Date: ______________

A	B	C	D	E	F	G	H
ItemNo.	**DescriptionofWorkActivityorOtherItem**	**ScheduledValue**	**%CompleteToDate**	**TotalAmountCompletedToDate(CXD)**	**TotalAmountCompletedonPriorApplicationForPayment**	**AmountofthisApplication(E-F)**	**Retention(5%xE)**
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
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		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -
		$ -	0%	$ -	$ -	$ -	$ -

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ProjectName: Campus Solar Roof Initiative
ProjectNumber: 950581
ContractNumber: 950581-DB-2020-68

SCHEDULE1
COSTBREAKDOWN
TO
APPLICATIONFORPAYMENT

Application No. _____ Period From: _____ Period to: _____
Application Date: _____ Contract Date: _____

A	B	C	D	E	F	G	H
ItemNo.	DescriptionofWorkActivityorOtherItem	ScheduledValue	%CompleteToDate	TotalAmountCompletedToDate(CXD)	TotalAmountCompletedonPriorApplicationForPayment	AmountofthisApplication(E-F)	Retention(5%xE)
				$ -	$ -	$ -	$ -

UCR | Planning, Design & Construction

Project Name: Campus Solar Roof Initiative
Project Number: 950581
Contract Number: 950581-DB-2020-68

SCHEDULE 2
CERTIFICATION OF CURRENT MARKET VALUE OF SECURITIES IN ESCROW IN LIEU OF RETENTION
TO
APPLICATION FOR PAYMENT

Application No. 0 Period From: _____ To: _____

Application Date: _____ Contract Date: _____

As of _____ (not earlier than 5 days prior to the date of the Application For Payment
(Date)

of which this Certification is a part), the aggregate market value of securities on deposit in Escrow Account No. _____ with _____
(Escrow Agent)

is _____ Dollars ($ _____).

_____ (Escrow Agent)	_____ (Contractor)
By: _____ (Sign & Date)	By: _____ (Sign & Date)
_____ (Print Name & Title)	_____ (Print Name & Title)

NOTE: Notary acknowledgment for Contractor and Escrow Agent must be attached.

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Project Name: Campus Solar Roof Initiative
Project Number: 950581
Contract Number: 950581-DB-2020-68

SCHEDULE 3
LIST OF SUBCONTRACTORS
TO
APPLICATION FOR PAYMENT

Application No. 0 Period From: _____ To: _____

Application Date: _____ Contract Date: _____

Subcontractors listed below are all Subcontractors furnishing labor, services, or materials for the period referred to in the Application For Payment referenced above, of which this Schedule 3 is a part:

Name of Subcontractor	Subcontracted Work Activity	Date Work Activity Completed

_____
(Contractor)

By: _____
(Sign & Date)

_____
(Print Name & Title)

SCHEDULE 4
DECLARATION OF RELEASE OF CLAIMS
TO
APPLICATION FOR PAYMENT

Application No. 0 Period From: _____ To: _____

Application Date: _____ Contract Date: _____

Contractor hereby certifies that attached hereto are releases and waivers of claims and stop notices from all Subcontractors furnishing labor, services, or materials covered by the Certificate For Payment for the preceding Application for Payment No. _____, except for those listed below:

Name of Subcontractor	Subcontracted Work Activity	Date Work Activity Completed

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Project Name: Campus Solar Roof Initiative
Project Number: 950581
Contract Number: 950581-DB-2020-68

SCHEDULE 4
DECLARATION OF RELEASE OF CLAIMS
TO
APPLICATION FOR PAYMENT

Application No. 0 Period From: _____ To: _____

Application Date: _____ Contract Date: _____

_____
(Contractor)

By: _____
(Sign & Date)

_____
(Print Name & Title)

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SELECTION OF RETENTION OPTIONS

Project Name: Campus Solar Roof Initiative Project No. 950581

I (we): _____
(Contractor/Design Builder)

SELECT OPTION 1 ☐ **Check here for Option 1**

University will withhold retention.

OR SELECT OPTION 2 ☐ **Check here for Option 2**

herewith elect to substitute securities in the form of:

_____
(Type of Security)

in lieu of retention being withheld by University for the above-referenced Project.

OR SELECTION OPTION 3 ☐ **Check here for Option 3**

Herewith elect to have retention on the above-referenced Project paid directly into an Escrow Account.

_____
(Escrow Account Number or Type of Security to be Purchased)

An Escrow Account will be opened with:

_____
(Name of state or federally chartered bank in California)

Whose address is:

_____
(Street Address)

_____
(City, County)

_____
(State and Zip)

On Behalf of Contractor/ Design Builder*:

_____
(Authorized Signature)

_____
(Printed Name)

_____
(Title)

Acknowledged and Approved on Behalf of University:

_____
(Signature)

_____
(Printed Name)

_____
(Title)

***Signature shall be by the authorized party who signs the Escrow Agreement for Deposit of Securities In Lieu of Retention and Deposit of Retention ("Escrow Agreement").**
**** Note: Contractor and its surety bear the risk of failure of the bank selected.**

Note: If a completed and signed Escrow Agreement is not submitted with this form, University will not allow deposit of securities in lieu of retention.

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ESCROW AGREEMENT

RETURN THIS AGREEMENT SIGNED BY CONTRACTOR/DESIGN BUILDER AND ESCROW AGENT TO:

UNIVERSITY OF CALIFORNIA, RIVERSIDE
PLANNING, DESIGN & CONSTRUCTION
1223 UNIVERSITY AVENUE, SUITE 240
RIVERSIDE, CA 92507

Project Name: Campus Solar Roof Initiative Project No. 950581

Escrow Account No. _____

ESCROW AGREEMENT FOR DEPOSIT OF SECURITIES IN LIEU OF RETENTION AND DEPOSIT OF RETENTION

This Escrow Agreement is made as of _____, 20 ____, and entered into by and between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter called "**University**," and

_____ hereinafter called "**Contractor**," and

whose address is: _____ and
(Street Address, City, State, and Zip)

_____ a state or federally chartered bank in the state of California,

whose address is: _____
(Street Address, City, State, and Zip)

hereinafter called "**Escrow Agent**."

For consideration hereinafter set forth, University, Contractor, and Escrow Agent agree as follows:

(1) Contractor has the option to deposit securities with Escrow Agent as a substitute for retention required to be withheld by University pursuant to the Contract Documents, hereinafter referred to as "Contract," entered into between University and Contractor for the Project titled:

Campus Solar Roof Initiative Project No. 950581
(Project Name)

in the amount of $ _____ dated _____.

Alternatively, on written request of Contractor, University shall deposit retention directly with Escrow Agent. Contractor and its surety shall be at risk for failure of the Escrow Agent selected. When Contractor deposits the securities as a substitute for retention, Escrow Agent shall notify University within 5 days after the deposit. At all times, Contractor shall have on deposit securities the market value of which is at least equal to the cash amount then required to be withheld as retention under the terms of the Contract. Securities shall be held in the name of The Regents of the University of California, Riverside; and Contractor shall be designated as the beneficial owner.

(2) Escrow Agent shall review the market value of securities deposited in escrow under this Escrow Agreement as often as conditions of the securities market warrant, but in no case less than once per month. Escrow Agent shall promptly notify University and Contractor of the market value of the deposited securities if such market value is less than the total amount of retention required to be withheld under the terms of the Contract. Contractor shall promptly deposit additional securities so that the current market value of the total of all deposited securities shall be at least equal to the total required amount of retention. Escrow Agent shall, within 5 days after University's request, provide a statement to University of the current market value of all securities deposited under this Escrow Agreement as of a date not earlier than 5 days prior to such request. The provisions of this Paragraph 2 shall not apply to securities consisting

of monetary deposits as allowed by Paragraph 7 held by a bank as Escrow Agent, provided the bank provides monthly statements reflecting the status of the monetary deposits held by the bank to University and Contractor.

(3) Contractor shall not use any or all of the securities deposited in lieu of retention under this Escrow Agreement for any other obligations, including deposits in lieu of retention for other contracts. Contractor represents, covenants and warrants that all deposited securities shall be lien free when tendered to the Escrow Agents and shall remain lien free during their retention by the Escrow Agent.

(4) University shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provision, provided that Escrow Agent holds securities in the form and amount specified herein.

(5) Prior to Contractor's submission of each Application For Payment, Escrow Agent shall issue a current statement of (a) the value of the securities currently being deposited in lieu of retention and (b) the current value of all securities being held in escrow pursuant to this Escrow Agreement. Such statement shall be no more than 5 days old at the time of submission, shall be notarized or have a guarantee of signature, and shall be submitted to Contractor with a copy to University under separate cover. Contractor shall attach such original statement to each Application For Payment. The provisions of this Paragraph 5 shall not apply to securities consisting of monetary deposits as allowed by Paragraph 7 held by a bank as Escrow Agent, provided the bank provides monthly statements reflecting the status of the monetary deposits held by the bank to University and Contractor.

(6) If, at the request of Contractor, University deposits retention directly with Escrow Agent, Escrow Agent shall hold such retention for the benefit of Contractor until such time as the escrow created under the Contract is terminated. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when University deposits retention directly with Escrow Agent.

(7) University will allow Contractor to deposit the following securities in lieu of retention and direct the investment of the retention deposits into any of the following which at the time of payment are legal investments under the laws of the State of California:

a. Direct obligations of the United States of America (including obligations issued or held in book-entry form on the books of the Department of the Treasury of the United States of America or any Federal Reserve Bank), or obligations the timely payment of the principal of and interest on which are fully guaranteed by the United States of America, or tax-exempt obligations which are rated in the highest rating category of a nationally recognized bond rating agency.

b. Obligations, debentures, notes or other evidence of indebtedness issued or guaranteed by any of the following: Banks for Cooperatives, Federal Intermediate Credit Banks, Federal Home Loan Bank System, Export-Import Bank of the United States, Federal Financing Bank, Federal Land Banks, Federal Farm Credits, Government National Mortgage Association, Farmer's Home Administration, Federal Home Loan Mortgage Corporation, or Federal Housing Administration.

c. Bonds of the State of California or those for which the faith and credit of the State of California are pledged for the payment of principal and interest.

d. Interest-bearing bankers acceptances and demand or time deposits (including certificates of deposit) in banks, provided such deposits are either (1) secured at all times, in the manner and to the extent provided by law, by collateral security described in clauses a or b of this Paragraph 7 continuously having a market value at least equal to the amount so invested so long as such underlying obligations or securities are in the possession of the Securities Investors Protection Corporation, (2) in banks having a combined capital and surplus of at least One Hundred Million Dollars, or (3) fully insured by the Federal Deposit Insurance Corporation.

e. Taxable government money market portfolios restricted to obligations with maturities of one (1) year or less, issued or guaranteed as to payment of principal and interest by the full faith and credit of the United States of America.

f. Commercial paper rated in the highest rating category of a nationally recognized rating agency, and issued by corporations organized and operating within the United States of America and having total assets in excess of Five Hundred Million Dollars.

(8) Contractor shall be responsible for paying all fees, costs, and expenses incurred by Escrow Agent in administering the escrow account. These expenses and payment terms shall be determined by Contractor and Escrow Agent. All fees, costs, and expenses of this Escrow Agreement and any transactions carried out hereunder shall be billed by Escrow Agent to Contractor. In the event that any fees, costs, or expenses shall remain unpaid in excess of 30 days from the date due, Escrow Agent may withhold such unpaid amount from any income distributable to Contractor, but shall not withhold such unpaid amount from any income distributable to University.

(9) Interest earned on the securities or the money market accounts held in escrow and all interest earned on the interest shall be for the sole account of Contractor and shall be held in escrow. Interest may be withdrawn by Contractor from time to time, without notice to University, only to the extent that the total amount held in escrow meets or exceeds the required amount of retention.

(10) Except as provided in Paragraph 9, Contractor shall have the right to withdraw all or any part of the escrow account only by written notice to Escrow Agent accompanied by written authorization from University to Escrow Agent stating that University consents to the withdrawal of the amount sought to be withdrawn by Contractor. University shall not be obligated to consent to any withdrawal to the extent of stop notice claims which cannot be satisfied from other funds then due and payable to Contractor.

(11) University shall have the right to draw upon the securities, any interest earned on the securities, and any interest earned on the interest in the event of default by Contractor. Upon 7 days written notice to Escrow Agent from University, with a copy to Contractor, Escrow Agent shall immediately convert the securities, any interest earned on the securities, and all interest earned on the interest to cash and shall distribute the cash as instructed by University. Escrow Agent shall have no duty to determine whether a default has occurred and may rely solely upon the written notice of such default from University.

(12) Upon receipt of written notification from University certifying that final payment is due under the Contract, Escrow Agent shall release to Contractor the amount, if any, by which the value of all securities and interest on deposit less escrow fees and charges of the escrow account exceeds 125% of all stop notice claims on file. Escrow Agent shall pay the remaining amount to University or as directed by University. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payment of fees and charges.

(13) Escrow Agent shall rely upon the written notifications from University and Contractor pursuant to this Escrow Agreement; and University and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion, and disbursement of the securities and interest as set forth herein.

(14) Escrow Agent shall have the right to terminate this Escrow Agreement upon 30 days notice to all parties hereunder. Upon receipt of such notice, University and Contractor shall appoint a successor Escrow Agent in writing and deliver written notice of such appointment to Escrow Agent. Thereupon, Escrow Agent shall deliver all assets in its custody to such successor Escrow Agent and all responsibility of Escrow Agent under this Escrow Agreement shall terminate; provided, however, if Contractor and University fail to appoint a successor Escrow Agent on or before the end of the 30 day notice period, then Escrow Agent is authorized and instructed to return all assets, documents, and other items in its custody to University and this Escrow Agreement shall be terminated without further instruction.

(15) The duties and responsibilities of Escrow Agent shall be limited to those expressly set forth in this Escrow Agreement; provided, however, that, with Escrow Agent's written consent, the duties and responsibilities in this Escrow Agreement may be amended at any time or times by an instrument in writing signed by all parties.

(16) Whenever Contractor tenders securities to be deposited in lieu of retention, an authorized representative of the Contractor shall declare under penalty of perjury that the securities are lien free and shall remain lien free during their retention by the Escrow Agent. The declaration shall be in the following form:

The undersigned, on behalf of _____
(Name of Contractor/Design Builder)

whose address is _____,
(Street Address)

_____, _____ _____
(City) *(State)* *(Zip Code)*

represents, covenants and warrants that the securities tendered herewith are lien free and shall remain lien free during their retention by the Escrow Agent.

I, _____, hereby declare that I am the
(Name)

_____ of _____,
(Title) *(Name of Contractor/Design Builder)*

that I am duly authorized to make this representation, and that I declare under perjury under the laws of the State of California that the foregoing is true and correct.

_____ _____
(Signature) *(Date)*

(17) The names of the persons authorized to give written notice or to receive written notice on behalf of University and on behalf of Contractor in connection with this Escrow Agreement, and exemplars of their respective signatures, are as set forth below. Such names may be changed by written notice to the other parties.

Contractor, Escrow Agent, and University hereby agree to the covenants contained herein.

IN WITNESS WHEREOF, Contractor, Escrow Agent, and University have executed this Escrow Agreement, the day and year first written above.

UNIVERSITY:	**CONTRACTOR/DESIGN BUILDER:**
_____ *(Signature)*	_____ *(Signature)*
_____ *(Printed Name)*	_____ *(Printed Name)*
_____ *(Title)*	_____ *(Title)*
_____ *(Telephone Number)*	_____ *(Telephone Number)*
_____ *(Signature)*	_____ *(Signature)*
_____ *(Printed Name)*	_____ *(Printed Name)*
_____ *(Title)*	_____ *(Title)*
_____ *(Telephone Number)*	_____ *(Telephone Number)*

Contractor/Design Builder, Escrow Agent, and University hereby agree to the covenants contained herein.

IN WITNESS WHEREOF, Contractor/Design Builder, Escrow Agent, and University have executed this Escrow Agreement, the day and year first written above.

On behalf of University:

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

_____
(Telephone Number)

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

_____
(Telephone Number)

On behalf of Contractor/Design Builder:

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

_____
(Telephone Number)

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

_____
(Telephone Number)

Escrow Agent:

By: _____
(Signature)

_____
(Printed Name)

_____
(Title)

_____
(Telephone/Fax)

_____
(Email)

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SUBMITTAL TRANSMITTAL

Project Name: Campus Solar Roof Initiative
Project No. 950581
Section Title: _____ Submittal No. _____
Submittal Description: _____
Contractor/Design Builder: _____

From	Date Sent	Via	To	Date Received	Reviewed By	Action by Recipient	No. of Copies

Action Legend: **NET-No Exceptions Taken** **MCN-Make Corrections Noted** **R&R-Revise and Resubmit** **REJ-Rejected** **NAR-No Action Required - Information Only**

Reviewed By:	**Submitted and Reviewed By: Contractor/Design Builder**	**Reviewed By: University's Representative**
☐ Architect ☐ Structural Engineer ☐ Civil Engineer ☐ Landscape Architect ☐ Mechanical Engineer ☐ Electrical Engineer ☐ Other: _____		
This submittal has been reviewed by the discipline indicated above and under the prevailing professional standard of care for general conformance with the design concept and general compliance with the Contract Documents. ☐ NET ☐ MCN ☐ R&R ☐ REJ	This submittal, including related parts and/or attachments, comments by the design consultant and comment by the Contractor/Design Builder, have been reviewed and are in compliance with the Contract Documents and have been or will be fully coordinated with related work as indicated in the final Construction Documents as Reviewed for Conformance by the University's Representative. ☐ NET ☐ MCN ☐ R&R ☐ REJ ☐ NAR	Review does not authorize or grant any waiver, deviation, or omission from the Contract Documents. The Contractor / Design Builder is responsible for accuracy of details and dimensions. Final approval is subject to field inspections. Any subsequent revisions to this submittal or deviation from what is shown or indicated will void any action by the University's Representative and will require re-submittal and review prior to incorporating material, item or assembly into the Work. ☐ NET ☐ MCN ☐ R&R ☐ REJ ☐ NAR
By: _____	By: _____	By: _____
Date: _____	Date: _____	Date: _____
Name: _____	Name: _____	Name: _____
Title: _____	Title: _____	Title: _____

CHANGE ORDER REQUEST

Date: _____ Change Order Request (COR) No. _____

Scope of Change:

Instructions:

1. Complete this form by providing (a) all information required above, (b) the amount and justification based upon the Contract Schedule for any proposed adjustment of Contract Time, (c) the proposed adjustment of Contract Sum, (d) the attached "Cost Proposal Summary," and (e) the attached form entitled, "Supporting Documentation for the Cost Proposal Summary."

2. Attach the form entitled "Supporting Documentation for the Cost Proposal Summary" for Contractor and each Subcontractor involved in the Extra Work. Each such form shall be completed and signed by Contractor or Subcontractor actually performing the Work Activity identified on the form. Attach supporting data to each such form to substantiate the individually listed costs. The costs provided on these forms shall be used to substantiate additional costs shown on the Cost Proposal Summary.

3. The Contractor Fee shall be computed on the Cost of Extra Work of Contractor and each Subcontractor involved in the Extra Work; and shall constitute full compensation for all costs and expenses related to the subject change and not listed in the "Supporting Documentation for the Cost Proposal Summary," including overhead and profit.

4. Refer to Article 7.3 of the General Conditions for the method of computing the Contractor Fee.

Adjustment of the Contract Time (Include justification based upon the Contract Schedule): _____ (Days)
Refer to Article 8 of the General Conditions.

Adjustment of the Contract Sum (Total from Line 18, Col. 4 of Cost Proposal Summary): $ _____
Refer to Article 7 of the General Conditions.

Submitted: CONTRACTOR **Received: UNIVERSITY'S REPRESENTATIVE**

_____
(Company Name)

_____ _____
(Signature & Date) (Signature & Date)

_____ _____
(Print Name & Title) (Print Name & Title)

cc: Executive Director, Architects & Engineers, Capital Programs

COST PROPOSAL SUMMARY

Contractor: _____ COR No. _____

		(1) **Contractor**	(2) **1st Tier Subs**	(3) **2nd & Lower Tier Subs**	(4) **Total**
ACTUAL COSTS	1. Straight Time Wages/Salaries-Labor				-
	2. Fringe Benefits and Payroll Taxes-Labor				-
	3. Overtime Wages/Salaries-Labor				-
	4. Fringe Benefits & Payroll Taxes-Overtime				-
	5. Materials & Cnsumable Items				-
	6. Sales Taxes (On Line 5)				-
	7. Rental Charges				-
	8. Royalties				-
	9. Permits				-
	10. Total Direct Expense (Sum of Lines 1-9)	**$-**	**$-**	**$-**	**$-**
	11. Insurance & Bonds (up to 2% of Line 10)	-	-	-	-
CONTRACTOR FEE	12. Sub-Sub (15% of Line 10, Col. 3)			-	-
	13. Subcontractor (5% of Line 10, Col. 3)		-		-
	14. Subcontractor (15% of Line 10, Col. 2)		-		-
	15. Contractor (5% of Line 10, Col. 2 & 3)	-			-
	16. Contractor (15% of Line 10, Col. 1)	-			-
	17. Contractor Fee (Sum of Lines 12-16)	$-	$-	$-	$-
TOTAL	18. Sum of Lines 10, 11, & 17	**$-**	**$-**	**$-**	**$-**

Actual Costs are taken from Line 12 of the attached forms entitled, “Supporting Documentation For the Cost Proposal Summary” for Contractor and each Subcontractor involved in the Extra Work.

SUPPORTING DOCUMENTATION FOR THE COST PROPOSAL SUMMARY

Supporting Documentation From: _____ COR No. _____
(Contractor/Subcontractor Name)

Work Activity: _____

COST ITEM	DESCRIPTION	COST[1]
ACTUAL COSTS	1. Straight Time Wages/Salaries-Labor	
	2. Fringe Benefits & Payroll Taxes-Labor: ___% of Line 1	
	3. Overtime Wages/Salaries-Labor (Attach University's Representative's written authorization.)	
	4. Fringe Benefits & Payroll Taxes-Overtime: ___% of Line 3	
	5. Materials & Consumable Items	
	6. Sales Taxes: ___% of Line 5	
	7. Rental Charges (Attach CalTrans' Schedule.)	
	8. Royalties	
	9. Permits	
	10. Total Direct Expense (Sum of Lines 1-9)	**$-**
	11. Insurance & Bonds ___% of Line 10 (up to 2% of Line 10)	-
TOTAL	12. Sum of Lines 10 & 11	**$-**

Prepared By:[2]

_____
(Company Name)

_____
(Signature & Date)

_____
(Print Name & Title)

CONTRACTOR:[3]

_____
(Company Name)

_____
(Signature & Date)

_____
(Print Name & Title)

Notes:

(1) This form shall be prepared and signed by Contractor or Subcontractor actually performing the Work Activity indicated above.
(2) If this form is signed by a Subcontractor, it shall be reviewed and signed by Contractor certifying the accuracy of the information.

FIELD ORDER

Contract Date: _____ Field Order No. _____

To Contractor: _____

Attn: _____
Address: _____
_____

	Description of Work	Estimated Adjustment, Contract Sum	Estimated Adjustment, Contract Time
1.			
2.			
3.			

By University's Representative:

_____
(Signature & Date)

_____
(Print Name & Title)

NOTE: If the work described above constitutes a change, this Field Order will be superseded by a Change Order that will include the scope of the change in the Work and any actual adjustments of the Contract Sum and the Contract Time.

cc: Director of Project Management, Planning, Design & Construction

UCR | Planning, Design & Construction

Project Name: Campus Solar Roof Initiative
Project Number: 950581
Contract Number: 950581-DB-2020-68

CHANGE ORDER

Contract Date: _____ Change Order No.: _____
Date Issued: _____

To Contractor: _____
Attn: _____
Address: _____

DESCRIPTION OF CHANGE: (Reference attachments)	Contract Sum Adjustment	Contract Time Adjustment
1.		
2.		
☐ **Description of Change continued on Page 2. Subtotal from Page 2:**	**$0.00**	**0**

Adjustment of Contract Sum:		Adjustment of Contract Time:		
Original Contract Sum:		Original Contract Time:	0	(Days)
Prior Adjustments:		Prior Adjustments:	0	(Days)
Contract Sum before this Change:	**$-**	Contract Time before this Change:	**0**	(Days)
Adjustment for this Change:	**$-**	Adjustment for this Change:	**0**	(Days)
Revised Contract Sum:	**$-**	Revised Contract Time:	**0**	(Days)
		Start Date:		
		Original Final Completion Date:	##########	
		Revised Final Completion Date:	##########	

Contractor waives any claim for further adjustments of the Contract Sum and the Contract Time related to the above described change in the Work.

Accepted:
By: Contractor

_____
(Signature & Date)

_____
(Print Name & Title)

Recommended:
By: University's Representative

_____
(Signature & Date)
Project Manager
Title
Planning, Design & Construction
(Print Name & Title)

Funds Sufficient:
By: Financial Administrative Officer

_____
(Signature & Date)
Susan McFadden
Senior Financial Analyst
Planning, Design & Construction
(Print Name & Title)

Approved:
University: The Regents of the University of California

_____
(Signature & Date)

Account No.: _____ Activity Code: _____
Fund: _____ Function: _____

UCR | Planning, Design & Construction

Project Name: Campus Solar Roof Initiative

Project Number: 950581

Contract Number: 950581-DB-2020-68

CHANGE ORDER

Contract Date: _____ Change Order No.: _____

Cost Center: _____ Project Code: _____

Blythe R. Wilson, Architect
Director of Project Management
Planning, Design & Construction

(Print Name & Title)

UCR | Planning, Design & Construction

Project Name: Campus Solar Roof Initiative
Project Number: 950581
Contract Number: 950581-DB-2020-68

CHANGE ORDER

Contract Date: _____ Change Order No.: _____

	DESCRIPTION OF CHANGE - CONTINUED	Contract Sum Adjustment	Contract Time Adjustment
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

UCR | Planning, Design & Construction

Project Name: Campus Solar Roof Initiative

Project Number: 950581

Contract Number: 950581-DB-2020-68

CHANGE ORDER

Contract Date: _____

Change Order No.:

Subtotals:	**$0.00**	**0**

UCR Planning, Design & Construction

CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

Project Name: Campus Solar Roof Initiative Project No. 950581

NOTICE

THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

IDENTIFYING INFORMATION

Claimant: _____
Name

Customer: _____
Name

Job Location: University of California, Riverside

Owner: The Regents of the University of California
Name

UCR Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507
Address

Through Date: _____

CONDITIONAL WAIVER AND RELEASE

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____ Amount of Check: $ _____

Check Payable to: _____

EXCEPTIONS

This document does not affect any of the following:

(1) Retentions.

(2) Extras for which the claimant has not received payment.

(3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____
Amount(s) of unpaid progress payment(s): $ _____

(4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

SIGNATURE

_____ _____
Claimant's Signature *Title*

_____ _____
Printed Name *Date of Signature*

UCR Planning, Design & Construction

UNCONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

Project Name: Campus Solar Roof Initiative Project No. 950581

NOTICE OF CLAIMANT

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

IDENTIFYING INFORMATION

Claimant: _____
Name

Customer: _____
Name

Job Location: University of California, Riverside

Owner: The Regents of the University of California
Name

UCR Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507
Address

Through Date: _____

UNCONDITIONAL WAIVER AND RELEASE

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: $ _____

EXCEPTIONS

This document does not affect any of the following:

(1) Retentions.

(2) Extras for which the claimant has not received payment.

(3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

SIGNATURE

_____ _____
Claimant's Signature *Title*

_____ _____
Printed Name *Date of Signature*

UCR | Planning, Design & Construction

CONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

Project Name: Campus Solar Roof Initiative Project No. 950581

NOTICE

THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

IDENTIFYING INFORMATION

Claimant: _____
Name

Customer: _____
Name

Job Location: University of California, Riverside

Owner: The Regents of the University of California
Name

UCR Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507
Address

CONDITIONAL WAIVER AND RELEASE

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____ Amount of Check: $ _____

Check Payable to: _____

EXCEPTIONS

This document does not affect any of the following:

Disputed claims for extras in the amount of: $ _____

SIGNATURE

_____ _____
Claimant's Signature *Title*

_____ _____
Printed Name *Date of Signature*

UCR | Planning, Design & Construction

UNCONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

Project Name: Campus Solar Roof Initiative Project No. 950581

NOTICE TO CLAIMANT

THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

IDENTIFYING INFORMATION

Claimant: _____
Name

Customer: _____
Name

Job Location: University of California, Riverside

Owner: The Regents of the University of California
Name

UCR Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507
Address

UNCONDITIONAL WAIVER AND RELEASE

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

EXCEPTIONS

This document does not affect any of the following:

Disputed claims for extras in the amount of: $ _____

SIGNATURE

_____ _____
Claimant's Signature *Title*

_____ _____
Printed Name *Date of Signature*

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

This document summarizes the Builder's Risk policy and is not intended to reflect all the terms, conditions, or exclusions of such policy as of the effective date of coverage. This document is not an insurance policy and does not amend, alter or extend the coverage afforded by the listed policy. The actual insurance policy defines all the terms, exclusions and conditions of coverage, and not this summary. Should any ambiguities or conflicts between the summary and policy exist, the policy terms and conditions will apply.

Some Projects may be excluded and/or must be underwritten separately and may be subject to different rates, deductibles, and terms and conditions (see page 15). Therefore, ***this document should be used as a guideline only****.*

INSURANCE COMPANY: Allianz Global Risks U.S. Insurance Company

BEST'S RATING: A+

NAMED INSURED: Regents of the University of California

INSURING AGREEMENT

This Policy, subject to the Limit of Liability and the terms, conditions, and limitations contained herein or endorsed hereon, insures against all risks of direct physical loss of or direct physical damage to Insured Property while at the construction site, stored off-site, or in the course of transit within the Territorial Limits specified in the Schedule during the Period of Insurance of each Insured Project.

LIMITS OF LIABILITY

SCHEDULE OF LIMITS

This Company shall not be liable for more than the Limit of Liability, as stated in Confirmation of Coverage, in any one Occurrence for any one Insured Project, subject to the following limits and sublimits:

MASTER POLICY LIMITS, BY CONSTRUCTION CLASS

$150,000,000 per project, per occurrence; except,
$ 25,000,000 per project, Joisted Masonry construction
$ 25,000,000 per project, Wood Frame construction

NOTE: *The Total Estimated Construction Cost is estimated through project completion and reported on the original Builder's Risk Insurance Application. This Limit of Liability (Total Project Value (TPV)) will correspond with the Total Estimated Construction Cost as shown on the original Builder's Risk Insurance Application. If the construction costs should increase, the Limit of Liability (TPV) should be subsequently increased, once advance notice has been given by the University's Representative to Willis Towers Watson.*

KEY SUBLIMITS (percentage or dollar value, whichever is less):

1. $25,000,000 for **Wood Frame Construction**
2. $25,000,000 for **Joisted Masonry Construction**
3. $50,000,000 for **Structural Renovations**
4. $500,000 for **Pollution Cleanup Expenses**
5. 15% of the declared estimated Total Project Value or minimum of $2,500,000, subject to a maximum of $30,000,000 for **Demolition and Increased Cost of Construction**
6. 25% of the adjusted property damage loss or minimum of $1,000,000, subject to a maximum of $5,000,000 for **Expediting Expense/Extra Expense**
7. 10% of the declared estimated Total Project Value or minimum of $2,500,000, subject to a maximum of $10,000,000 for **Insured Property while Stored Off-site**
8. 10% of the declared estimated Total Project Value or minimum of $2,500,000, subject to a maximum of $10,000,000 for **Insured Property while in the Course of Inland Transit (continental US)**
9. 25% of the declared estimated Total Project Value or minimum of $2,500,000, subject to a maximum of $30,000,000 for **Debris Removal**
10. $750,000 for **Valuable Papers**
11. $1,000,000 for **Trees, Grass, Shrubbery, Seed and Plants**
12. 10% of estimated Total Project Value or minimum of $1,000,000, subject to a maximum of $10,000,000 for **Frost, Freeze, Falling of Ice**
13. 15% of the adjusted property damage loss or minimum of $1,000,000, subject to a maximum of $15,000,000 for **Green/LEED Rating System**
14. 10% of the adjusted property damage loss or minimum of $250,000, subject to a maximum of $500,000 for **Mold/Fungi**
15. 5% of the declared estimated Total Project Value or minimum of $1,000,000, subject to a maximum of $10,000,000 for additional **Architects, Engineering and Professional Fees**
16. $500,000 for **Claims Preparation Expenses**
17. $750,000 for **Protection Services and Equipment Refills**
18. $50,000 for **Reward Payment**
19. $1,000,000 for **Off Premises Service Interruption – Direct Damage**

KEY TERMS AND CONDITIONS

NAMED INSURED

The Regents of the University of California and all affiliated and subsidiary companies, corporations, ventures, partnerships or other organizations, all owned, controlled or managed by the Named Insured and all as now exist or may hereafter be constituted or acquired.

ADDITIONAL INSUREDS

General Contractors, Construction Managers and subcontractors of every tier. Additionally, any other person or entity(ies) as identified on a Project Declaration Endorsement, Quarterly Report Endorsement, or to the extent required by a written contract or agreement. As respects architects, engineers, manufacturers and suppliers, the foregoing is limited to their site activities only.

ATTACHMENT/TERMINATION

Insurance hereunder applies to all projects specifically declared under the Master Policy in a Quarterly Report Endorsement or in a Project Declaration Endorsement, where the project is scheduled to begin during the term of the Master Policy. The Master Policy term commences on September 1, 2017 at 12:01AM and ends on September 1, 2020 at 12:01AM.

Coverage for each Insured Project declared under the Master Policy will go into effect and continue in full force and effect during the Coverage Period specified in the Confirmation of Coverage.

NOTIFICATION OF COVERAGE/TERMINATION: *The Confirmation of Coverage Period will correspond with the Estimated Dates of Commencement and Completion of Work as indicated on the original Builder's Risk Insurance Application. If construction is not completed on time and coverage beyond the Estimated Date of Completion of Work is required, prior notification must be given by the University Representative to Willis Towers Watson in order to ensure that coverage remains in force for the project.*

DEDUCTIBLES (Basis for determining Deductible is the Total Project Value on record with the insurance company at time of loss. Total Project Value will correspond with the Total Estimated Construction Cost reported.)

NOTE: *The contractor shall be responsible for the deductibles.*

All Other Perils (except Water Damage; Electrical/Mechanical Breakdown and/or Hot-testing)
$10,000 for Projects up to a value of $25,000,000
$25,000 for Projects exceeding $25,000,000 in value

Water Damage
$25,000 for projects up to a value of $25,000,000
$50,000 for projects valued $25,000,000 up to $50,000,000
$75,000 for projects exceeding $50,000,000 in value

Frost/Freeze/Falling Ice: $100,000

Electrical/Mechanical Breakdown and/or Hot Testing
$50,000 for Projects up to a value of $25,000,000
$100,000 for Projects valued $25,000,000 up to $100,000,000
$250,000 for Projects exceeding $100,000,000 in value

KEY EXCLUSIONS

PROPERTY EXCLUDED

This Policy does not insure:

1. Land, but this exclusion does not apply to excavation and grading as long as the cost of the excavation and grading is included in the Limit of Liability as stated in Confirmation of Coverage.

2. Contractor's plant and equipment, machinery, tools, or property of similar nature not destined to become a permanent part of the Insured Project but this exclusion shall not apply to formwork, fences, shoring, falsework and temporary buildings as long as the value of these items are included in the estimated Limit of Liability as stated in Confirmation of Coverage.

3. Automobiles or other vehicles, watercraft or aircraft.

4. Water.

5. Accounts, bills, currency, deeds, securities, books, records, manuscripts, other similar papers, or data processing media.

6. Existing buildings or structures or any other existing property.

7. Owner supplied material, equipment, machinery and supplies, unless the value of such is included in the Limit of Liability as stated in Confirmation of Coverage.

8. Transmission and/or distribution lines; including wires, cables, poles, towers and all equipment attached thereto beyond 1,000 feet from the perimeter of the project site.

9. Partially or completely excavated or open trench, pipeline or workface, at any one time beyond 1,000 feet in length.

EXCLUDED CAUSES OF LOSS

1. Loss or damage caused by, or resulting from, wear and tear, moth, vermin, termites or other insects, inherent vice, latent defect, gradual deterioration, wet or dry rot and rust, corrosion, erosion or normal settling, shrinkage, and/or expansion of buildings and/or foundations.

2. Any loss of use or occupancy or consequential loss of any nature howsoever caused.

3. Liquidated damages and/or penalties for delay or detention in connection with guarantees of performance or efficiency.

4. Hostile or warlike action.

5. Nuclear reaction, nuclear radiation, or radioactive contamination.

6. Any cost or expenses incurred to test for, monitor, or assess the existence, concentration or effects of Fungi.

7. Loss or damage caused by or resulting from infidelity or dishonesty on the part of the Insured and/or any employee of the Insured; inventory shortage or unexplained disappearance.

8. Loss or damage caused by or resulting from the enforcement of any ordinance or law, or any order of governmental or municipal authority; by suspension, lapse, termination and/or cancellation of any license, lease, or permit, or any injunction or process of any court, unless otherwise endorsed herein.

9. Loss or damage caused by, resulting form, contributed to or made worse by actual, alleged, or threatened release, discharge, escape or dispersal of Contaminants and/or Pollutants.

10. Loss or damage to Insured Property while aboard any aircraft or watercraft.

11. The cost of making good faulty or defective workmanship, material, construction, designs, plans and/or specifications unless direct physical loss or direct physical damage not otherwise excluded under this policy ensues and then this Policy will cover such ensuing loss or damage only.

12. Loss, damage, corruption, destruction, distortion, interruption, disruption, erasure, deletion, alteration, loss of use, reduction in functionality, loss of access to, denial of access to or breakdown of Electronic Data from any cause whatsoever.

13. Loss or damage to Used Equipment caused by mechanical and/or electrical breakdown.

14. Loss or damage directly or indirectly caused by, resulting from, contributed to, or aggravated by Land Movement.

15. Loss or damage directly or indirectly caused by, resulting from, contributed to, or aggravated by Flood.

16. Loss or damage covered under any guarantee or warranty, expressed or implied, by any manufacturer or supplier whether or not such manufacturer or supplier is an Insured under this policy.

17. Terrorism.

18. Loss or damage arising out of the performance of the professional activities of any consulting engineer, architect, or designer, or any person employed by them or any others whose acts they are legally liable for whether or not named as an Insured under this Policy.

SELECTED EXTENSIONS OF COVERAGE

1. EXPEDITING/EXTRA EXPENSES

Subject to the stated sublimit, this Policy is extended to cover extra charges for overtime, night work, work on public holidays, the extra cost of rental construction equipment, express freight, including air freight all incurred solely:

A. to facilitate the repair or replacement of the Insured Property which has sustained physical loss or physical damage from a peril insured, or;

B. which are necessary to return the work on the Insured Property to the same schedule actually being observed immediately prior to the sustaining of physical loss or physical damage from a peril insured.

This Policy does not cover charges incurred to expedite work on parts of the Insured Property which have not sustained physical loss or physical damage.

2. DEMOLITION AND INCREASED COST OF CONSTRUCTION

A. Subject to the stated sublimit, in the event of direct physical loss and/or direct physical damage by perils insured under this Policy, the Company shall also pay:

(i) The increased cost to repair, replace or re-erect the Insured Property caused by the enforcement of any building, zoning or land use ordinance or law in force at the time of loss. If the Insured Property is replaced, it must be intended for similar occupancy of the current Insured Property, unless otherwise required by zoning or land use ordinance or law.

(ii) The cost to demolish and clear the construction site of undamaged parts of the Insured Property caused by the enforcement of any building, zoning or land use law in force at the time of the loss.

B. In no event, however, shall the Company be liable for costs associated with the enforcement of any ordinance or law which requires any Insured or others to test for, monitor, clean up, remove, contain, treat, detoxify, or neutralize, or in any way respond to or assess the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkali, toxic chemicals, liquids or gasses, waste materials or other irritants, any Contaminants and/or Pollutants.

C. The Company shall not pay for the increased cost of construction until the Insured Property is actually repaired, replaced, or re-erected at the same construction site or elsewhere and as soon as reasonably possible after the loss or damage, not to exceed thirty (30) months.

D. In no event, however, shall the Company pay more:

(i) If the Insured Property is repaired, replaced or re-erected at the same construction site than the amount the insured actually spends to:

a) Demolish and clear the construction site; and

b) Repair, replace or re-erect the Insured Property but not for more than property of like height, floor area and style at the same construction site.

(ii) If the Insured Property is not repaired, replaced, or re-erected at the same construction site than:

a) The amount the Insured actually spends to demolish and clear the construction site; and

b) The cost to replace, at the same construction site, the damaged or destroyed Insured Property with other property;

1) of like kind and quality;

2) of like height, floor area and style; and

3) used for the same purpose.

(iii) Than the stated sublimit of Demolition and Increased Cost of Construction.

3. PROTECTION SERVICES AND EQUIPMENT REFILLS

Subject to the stated sublimit, in the event of direct physical loss or direct physical damage to Insured Property by perils insured under this Policy, this insurance shall also pay the cost for services rendered by the Fire Department, Police Department or other governmental authority to save or protect Insured Property from direct physical loss or damage by an insured peril, for which the Insured is liable, provided they are assumed by contract or written agreement prior to a loss or they are required by a local ordinance.

This policy also covers cost or expense to recharge or refill any fire protective equipment owned, in the control of, or used to protect the Insured Property when discharged:

A. To prevent or control direct physical loss or direct physical damage by an insured peril; or
B. Accidentally; or
C. As a result of malfunction of the equipment.

In respect items B. and C. above, the Company will pay for amounts in excess of amounts recoverable under any manufacturer's or supplier's warranty.

4. PLANS, BLUEPRINTS, AND SPECIFICATIONS

Subject to the stated sublimit, in the event of direct physical damage to records, documents, drawings, plans, blueprints or specifications by perils insured under this policy, this insurance shall also pay the costs of mechanical reproduction from originals.

5. TREES, GRASS, SHRUBBERY, SEED AND PLANTS

Subject to the stated sublimit, this policy is extended to insure direct physical loss or direct physical damage to trees, grass, shrubbery, seed and plants caused by or resulting from fire, lightning, windstorm, hail, explosion, smoke, collision by aircraft or vehicle, riot, riot attending a strike or civil commotion, vandalism or malicious mischief.

6. DEBRIS REMOVAL

Subject to the stated sublimit, in the event of direct physical loss or physical damage to Insured Property by perils insured under this policy, this insurance shall also pay the cost of removal of material and debris being a part of the Insured Property located at the construction site and the cost to demolish and clear the construction site of undamaged parts caused by the enforcement of any building, zoning or land use law in force at the time of the loss.

This Policy also covers cost or expense to:

A. Extract Contaminants and/or Pollutants from the debris; or
B. Extract Contaminants and/or Pollutants from land and/or water; or
C. Remove, restore, or replace land and/or water made necessary due to the presence of Contaminants and/or Pollutants; or
D. Remove or transport any property, material, or debris to a site for storage or decontamination required because the property, material, or debris is affected by Contaminants and/or Pollutants, whether or not such removal, transport, or decontamination is required by law or regulation.
E. This sub-clause (Items A - D above), is subject to a sublimit for **Pollution Cleanup Expenses**.

It is a condition precedent to recovery under this clause, that the Company shall have paid, or agreed to pay for direct physical loss or direct physical damage to the Insured Property and that the Insured shall give written notice to the Company of intent to claim for cost of removal of debris or the cost of cleanup no later than (12) twelve months after the date the original physical loss or physical damage occurred.

7. ARCHITECT, ENGINEERING AND PROFESSIONAL FEES

Subject to the stated sublimit, Architect, Engineering and Professional Fees shall mean the additional architectural and engineering expenses, excluding any costs for redesign or betterment, or owner's consultant service expenses, or owner's legal, appraisal, title and/or inspection fees incurred to facilitate repair or replacement of the Insured Property which has sustained physical loss or physical damage from an insured peril.

8. GREEN/LEED

Subject to the stated sublimit, in the event of a direct physical loss or direct physical damage not otherwise excluded in the policy to Insured Property by perils insured under the policy the Insurer shall also pay the reasonable additional cost, if any, incurred by the Insured to repair or replace such damaged or destroyed Insured Property in a manner and with products or materials of otherwise equivalent quality and function that meet the requirements of the LEED Rating System.

Coverage under this extension applies only if the Insured Project has been registered with the US Green Building Council during the Period of Insurance specified as stated in Confirmation of Coverage and prior to any loss, and only to the initial and intended building certification level that has been registered with the US Green Building Council, in accordance with the criteria outlined in order to comply with the requirements of the LEED Rating System existing at the time of the loss or damage to the Insured Project, which upon completion will undergo the process of being certified by the US Green Building Council.

This coverage extension includes the additional coverages below as part of and not in addition to the sublimit as stated:

(1) CERTIFICATION FEES
Coverage is provided herein for the registration and certification fees charged by U.S. Green Building Council for the Insured to obtain LEED certification;

(2) COMMISSIONING EXPENSE
Coverage is provided herein for the reasonable expense incurred by the Insured to hire a professional engineer to provide commissioning or retro-commissioning services, including overseeing the repairs and replacement of damaged or destroyed Insured Property in order to verify and document that the replacement systems have been installed and calibrated properly and perform according to the documented design criteria and manufacturers' specifications; and to conduct a Test-and-Balance analysis of heating, ventilating or air conditioning systems (HVAC) as part of the commissioning or retro-commissioning , even if the HVAC system did not sustain any physical loss or damage;

(3) FLUSH-OUT OF RECONSTRUCTED SPACE
Coverage is provided herein for the reasonable expense incurred by the Insured to flush out the reconstructed space with 100% outside air through new filtration media following reconstruction in a manner consistent with the LEED Rating System;

(4) LEED ACCREDITED PROFESSIONAL FEES
Coverage is provided herein for the reasonable expense incurred by the Insured to hire a LEED Accredited Professional to participate in the design and construction of the damaged or destroyed building.

(5) RECYCLING EXPENSE
DEBRIS REMOVAL is extended to cover the reasonable additional cost incurred, if any, to sort, collect and transport recyclable debris to recycling facilities instead of landfills. Any income or remuneration derived from this recycling will be used to reduce the amount of the loss.

GREEN / LEED EXCLUSIONS:
No coverage is provided under this extension:

A. If no such products or materials exist at the time of the loss or damage; or
B. If the Insured does not repair or replace the damaged or destroyed Insured Property.

In no event will the policy pay more than the lesser of the:

A. The cost to repair; or
B. The cost to replace;

the damaged Insured Property in a manner and with products or materials of otherwise equivalent quality and function that meet the requirements of the LEED Rating System existing at the time of the loss or damage.

No coverage is provided under this extension of coverage for any of the following items:

A. Re-registering the Insured project with the US Green Building Council.
B. Failure to meet the registered LEED Building Rating certification level.
C. Land and land values.
D. Any additional cost incurred to comply with any law or ordinance.
E. Personal property of others in the Insured's care, custody or control.
F. Raw materials, stock-in-process and finished goods.
G. Motor vehicles.
H. Property located outside the Territorial Limits of the policy.

9. CLAIMS PREPARATIONS EXPENSE

Subject to the stated sublimit, this policy is extended to include reasonable expenses incurred by the Insured, or by the Insured's representatives for preparing the details of a claim resulting from a loss which would be payable under this policy. However, the Company shall not liable for expenses incurred by the Insured in utilizing or retaining the services of attorneys, insurance agents or brokers; or any subsidiary, related or associated entities either partially or wholly owned by an attorney or public adjuster.

10. MOLD/FUNGI

Subject to the stated sublimit, in the event of direct physical loss or direct physical damage to Insured Property by perils insured under the policy, the insurance shall also pay, subject to the Limit of Liability and the terms, conditions, and limitations of this policy, the cost to clean up or remove Mold/Fungi from Insured Property located at the construction site.

Not withstanding any terms or conditions, this policy does not insure any cost or expense incurred to test for, monitor, or assess the existence, concentration or effects of Mold/Fungi.

11. REWARD PAYMENT

Subject to the stated sublimit, the Company will reimburse the Named Insured for rewards that the Named Insured paid to others for information leading to:

A. The successful return of undamaged stolen Insured Property to the Insured or a law enforcement agency; or
B. The arrest and convictions of any persons responsible for having damaged or stolen Covered Property.

The reward payments must be documented.

The most that the Company will pay under this Coverage Extension in any one "occurrence" is 25% of the covered loss of or damage to Insured Property, prior to the application of any applicable Deductible and recovery of any Insured Property, up to the stated Sublimit.

12. OFF-PREMISES SERVICE INTERRUPTION – DIRECT DAMAGE

Subject to the stated sublimit, the Company will pay for direct physical loss of or damage to Insured Property at the project site directly caused by an off premises service interruption. The interruption must result from direct physical loss or damage directly caused by a covered cause of loss to property located away from the project site and used to provide any of the following services to the project site:

A. Water;
B. Power, including steam and natural gas; or
C. Communication, including video, voice and data.

SELECTED GENERAL CONDITIONS

1. REQUIREMENTS IN CASE OF LOSS

In the event of loss or damage to Insured Property the Insured shall:

A. Give immediate notice to the insurance company;

B. Protect the Insured Property from further loss or damage;

C. Within ninety (90) days from the date of discovery of the loss or damage, the Named Insured shall render a statement to the Insurer signed and sworn to by the Named Insured stating the knowledge and belief of the Insured as to the time and cause of the loss or damage and the interest of the Insured and all others in the Insured Property;

D. Exhibit to any person designated by the Insurer all that remains of the Insured Property.

E. Coordinate and cooperate with investigation and/or inspection of property and

provide documentation as requested by the insurance adjuster. Do NOT destroy or salvage damaged property unless authorized to do so by the insurance adjuster.

F. Submit to examinations under oath by any person named by the Insurer and produce for examination all writings, books of account, bills, invoices and other vouchers, or certified copies thereof if originals be lost, at such reasonable time and place as may be designated by the Insurer or its representative, and permit extracts and copies thereof to be made. No such examination under oath or examination of books or documents shall be deemed to be a waiver of any defense which the Insurer might otherwise have with respect to any loss or claim; but all such examinations and acts shall be deemed to have been made or done without prejudice to the Company's liability.

G. Subject to the Limit of Liability and the terms, conditions, and limitations of the policy, all adjusted losses shall be paid or made good to the Named Insured within sixty (60) days after presentation and acceptance of the satisfactory proof of interest and loss to the Insurer. No amount shall be paid on an adjusted loss or made good if the Insured has collected the same from others.

2. VALUATION

Subject to the Limit of Liability, sublimits or Aggregate Limit of Liability, the Insurer shall not be liable beyond the cost to repair, replace, or re-erect the Insured Property at the time and place of loss, with materials of like kind and quality, less the cost of betterment, salvage, or other recovery including contractors reasonable profit and overhead in the proportion as that included in the original contract documents, or 15% profit and overhead, whichever is lesser. If the Insured Property is not replaced, then the loss shall be settled on the Actual Cash Value basis with proper deduction for depreciation, salvage or other recovery and exclusive of profit and overhead.

3. PROTECTION OF PROPERTY

In the case of direct physical loss or direct physical damage to Insured Property by perils insured under the policy, it shall be lawful and necessary for the Insured, his or their factors, servants, or assigns, to sue, labor, and travel for in and about the defense, safeguard, and recovery of the Insured Property, or any part thereof, without prejudice to this insurance, nor shall the acts of the Insured or Insurer, in recovering, saving, and preserving the Insured Property in case of loss be considered a waiver or an acceptance of abandonment. The expenses so incurred shall be borne by the Insured and the Insurer proportionately to the extent of their respective interests.

4. OTHER INSURANCE

This Policy shall not provide coverage to the extent of any other insurance, whether prior or subsequent hereto in date, and by whomsoever effected, directly or indirectly covering the same property against the same peril; and the Company shall be liable for direct physical loss or direct physical damage only for the excess value beyond the amount due from such other insurance, subject to the applicable Deductible.

5. INSUREDS' REPRESENTATIVE

The first Named Insured shall be the sole and irrevocable agent of each and every Insured for the purpose of:

A. Payment of premium;
B. Giving or receiving notice of cancellation;
C. Requesting amendments to this policy and accepting amendments to the policy made by the Insurer.

6. LOSS PAYABLE

Loss, if any, shall be payable to the first Named Insured and/or its assigned designee**.**

7. PARTIAL OCCUPANCY OR USE

Notwithstanding anything to the contrary elsewhere in the policy, the Owner and/or tenants may occupy or use any completed or partially completed portion of the Insured Property, provided that the Insured warrants that all fire protection shall be in service and fully operational during such occupancy or use.

SELECTED DEFINITIONS

The following terms have been defined in the Master Policy and will be applied in the interpretation of certain wording used herein or within the Master Policy.

1. FLOOD:

Flood shall mean the rising, overflowing or breaking of boundaries of rivers, lakes, streams, ponds or similar natural or man-made bodies of water, or from waves, tidal waves, tidal waters, wave wash, or spray from any of the foregoing, surface waters, rain accumulation run off, all whether driven by wind or not.

2. CONTAMINANTS OR POLLUTANTS:

Contaminants and/or Pollutants shall mean any material which after its release or discharge can cause or threaten damage to human health and/or human welfare, or causes or threatens damage, deterioration, loss of value, marketability and/or loss of use to Insured Property; including, but not limited to, bacteria, virus, or hazardous substances as listed in the Federal Water Pollution Control Act, Clean Air Act, Resource Conservation and Recovery Act of 1976, and/or Toxic Substances Control Act, or as designated by the U.S. Environmental Protection Agency.

3. LAND MOVEMENT:

Land Movement shall mean all land movement however caused, whether by natural event or man-made including but not limited to, earthquake, volcanic eruption, tsunami, subsidence, landslide, mudflow, or rockfall.

4. OCCURRENCE:

Occurrence shall mean any one loss, disaster, or casualty, or series of losses, disasters, or casualties arising out of one event. With respect to the perils of Flood, Land Movement, or riots, one event shall be construed to be all losses arising during a continuous period of seventy-two (72) hours. With respect to the peril of Water Damage, one event shall be construed to be all losses arising during a continuous period of ninety-six (96) hours.

The Insured may choose the time from which any such period shall be deemed to have commenced, provided it shall not be earlier than the time of the first loss sustained by the Insured during the Occurrence.

5. WATER DAMAGE:

All water damage excluding flood, however caused, whether by natural event or man-made, including but not limited to interior water damage, damage due to water from pipe breakage or sprinkler leakage, damage from rainfall and/or resulting runoff; all whether wind driven or not.

PROJECTS EXCLUDED AND/OR MUST BE UNDERWRITTEN SEPARATELY. THESE PROJECTS MAY BE SUBJECT TO DIFFERENT RATES, DEDUCTIBLES, TERMS AND CONDITIONS.

(A) Construction Cost exceeds:

- $150 Million regardless of Construction Type (Standalone project-specific policy may apply on projects over $100 Million)
- $25 Million for Wood Frame (Standalone project-specific policy may apply on projects over $10 Million)
- $25 Million for Joisted Masonry
- $50 Million for Structural Renovations

(B) Project involves the following:

- Construction occurring outside of the State of California
- Co-Generation Facility
- Stadium or arena
- Bridge
- Tunnel
- Excavations greater than 1,000 feet in length or 40 feet in depth
- Transmission and/or distribution lines extending greater than 1,000 feet in length from the perimeter project site including cable, telecom, wires, poles, towers, and electrical
- Directional Drilling
- Gas Turbine
- Power Plants

(C) Project involves the following, without being delivered in combination with other new "ground-up" construction:

- Water or Sewer Pipelines, Cut and Cover, Open Trench, Utility Relocations (exceeding $25M in value), Central Utility Plants, Waste Water, or Water Treatment Facilities. (Standalone projects means when the scope of work is not included in the estimated Construction Cost of a building project).

(D) Project requires coverage for:

- Land Movement (e.g. Earthquake)
- Flood
- Terrorism
- Delay in Completion/Business Interruption

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FINAL DISTRIBUTION OF CONTRACT DOLLARS

Project Name: Campus Solar Roof Initiative **Project No.** 950581

Provide the following information for each contracting party including the Contractor/Design Builder and each Subcontractor regardless of tier*
Attach additional sheets if necessary.

1	2	3	4	5				6	
Full Name of Business	**Street, Address, City, State and ZIP**	**Telephone No.**	**Contact Name**	**Business Categories**				**Contract Dollars**	
				SBE*	DBE*	WBE*	DVBE*	Amount ($)	(%)
Contractor/Design Builder:									
Subcontractors:									
Total Contract Amount:			Column 5 - Business Categories					**SUBTOTALS**	
			SBE = Small Business Enterprise						
			DBE = Disadvantaged Business Enterprise						
			WBE = Woman Business Enterprise						
			DVBE = Disabled Veteran Business Enterprise						

*Regardless of tier, a completed Self-Certification must have been submitted with the Report of Subcontractor Information for each SBE, DBE, WBE, DVBE indicated on this Exhibit.

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SELF-CERTIFICATION

Project Name: Campus Solar Roof Initiative
Project No.: 950581

For the Contractor/Design Builder and each Subcontractor indicated on the Report of Subcontractor Information the following must be completed. Indicate all Business category(ies) that apply by initialing next to the applicable category(ies):

Initial if applicable

Small Business Enterprise (SBE) - an independently owned and operated concern certified, or certifiable, as small business by the Federal Small Business Administration (SBA). (Size standards by Standard Industrial Classification codes required by the Federal Acquisition Regulations, Section 19.102, may be found at http://www.sba.gov/content/table-small-business-size-standards.) The eligibility requirements for California contracting purposes is on the Department of General Services website at http://www.dgs.ca.gov/pd/Programs/OSDS/SBEligibilityBenefits.aspx. The University may rely on written representation by the vendors regarding their status.

Initial if applicable

Disabled Veteran Business Enterprise (DVBE) - a business that is at least 51% owned by one or more disabled veterans or, in the case of any publicly owned business, at least 51% of the stock of which is owned by such individuals and whose management and daily business operations are controlled by one or more of such individuals. A Disabled Veteran is a veteran of the military, naval, or air service of the United States with a service connected disability who is a resident of the State of California. To qualify as a veteran with a service connected disability, the person must be currently declared by the United States Veterans Administration to be 10% or more disabled as a result of service in the armed forces.

Initial if applicable

Disadvantaged Business Enterprise (DBE) - a business concern that is at least 51% owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly owned business, at least 51% of the stock of which is owned by such individuals and whose management and daily business operations are controlled by one or more of such individuals. Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as members of a group without regard to their individual qualities. Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free private enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged. Business owners who certify that they are members of named groups (Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans) are to be considered socially and economically disadvantaged.

Initial if applicable

Women-Owned Business Enterprise (WBE) - a business that is at least 51% owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

Initial if applicable

None of the above categories apply.

I hereby certify under penalty of perjury under the laws of the State of California that I have read this certification and know the contents thereof, and that the business category indicated above reflects the true and correct status of the business in accordance with Federal Small Business Administration criteria and Federal Acquisition Regulations, FAR 19 pertaining to small, disadvantaged, women-owned, and disabled veteran business enterprises. I understand that falsely certifying the status of this business, obstructing, impeding or otherwise inhibiting any University of California official who is attempting to verify the information on this form may result in suspension from participation in University of California business contracts for a period up to five (5) years and the imposition of any civil penalties allowed by law.

INFORMATION FURNISHED BY: _____
(Print or Type Name of Owner and/or Principal)

_____
(Name of Business or Firm)

a _____
(Insert type of business e.g. corporation, sole proprietorship, partnership, etc.)

By: _____ _____
(Signature) *(Title)*

_____ _____
(Print Name) *(Date)*

PRIVACY NOTICE

The State of California Information Practices Act of 1977 (effective July 1, 1978) requires the University of California to provide the following information to individuals who are asked to supply personal information about themselves. Information furnished on the Self-Certification form may, in some cases, identify personal information of an individual.

- The University of California, Riverside is requesting the information contained in this form and the accompanying Report of Subcontractor Information.
- The Small Business Outreach Program Manager at the University of California, Riverside, is responsible for maintaining the requested information. The contact information for the Small Business Outreach Program Manager may be found at: http://www.ucop.edu/procurement-services/_files/sbdmgr.xlsx
- The maintenance of information is authorized in part by Public Contract Code section 10500.5.
- Furnishing the information requested on this form is mandatory. If SBE, DBE, WBE and/or DVBE status is applicable, furnishing such information is mandatory.
- Failure to provide the information may be a violation of bidding procedures and/or breach of the contract and the University may pursue any and all remedies permitted by the provisions of the Contract Documents.
- The information on this form is collected for monitoring and reporting purposes in accordance with state law and University policy.
- The individual may access information contained in this form and related forms by contacting the Small Business Outreach Program Manager(s).

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INTENT TO FILE NOTICE OF COMPLETION

Project Name: Campus Solar Roof Initiative Project No. 950581

To: _____
Contracts Department

From: _____
Project Manager

Please file a Notice of Completion for the subject Project. The Project was accepted by University and University's Representative on:

_____
(Month/Day/Year)

and the following action items have been performed:

Checklist

A. As-Built Drawings received from Contractor/Design Builder approved by University and University's Representative. _____ (Initial if applicable)

B. Final Punch List is signed off by University's Representative and all items are completed to the satisfaction of University. _____ (Initial if applicable)

C. Manuals and Warranties on equipment with a List of Manufacturers (Exhibit 27) have been transmitted to Facilities Management. _____ (Initial if applicable)

D. Exhibit 13, Final Distribution of Contract Dollars, Exhibit 14, Self Certification, and Exhibit 16, Report of Subcontractor Information, and Exhibit 18, Application for Retention Release (for full release of final retention) forms have been received from Contractor/Design Builder approved by University and University's Representative. _____ (Initial if applicable)

E. Unconditional Waivers and Releases Upon Final Payment (Exhibit 11B) for Contractor/Design Builder and all listed Subcontractors. _____ (Initial if applicable)

Attached are transmittals evidencing performance of the above actions. Also attached is a completed Declaration of Building Value Form for the subject Project (if applicable).

ACCEPTED:

_____
Signature
(UCR Project Manager)

_____ _____
(Print Name) *(Date)*

ACCEPTED:

_____
Signature
(UCR Sr. Project Manager)

_____ _____
(Print Name & Title) *(Date)*

ACCEPTED:

_____
Signature
(UCR Campus Architect)

_____ _____
(Print Name) *(Date)*

Attachments: **Transmittals for Items A, B, C, D, E**
Declaration of Building Value Form (if applicable)

UCR Planning, Design & Construction

REPORT OF SUBCONTRACTOR INFORMATION

Project Name: Rooftop Solar

Project No. 950581

Provide the following information for each contracting party including the Contractor and each Subcontractor regardless of tier*
Attach additional sheets if necessary.

1	2	3	4	5	6	7		8			
Full Name of Business	Portion of the Work	Street Address, City, State and ZIP	Telephone No / FAX No	Contact Name	Type of Ownership	License Info **		Business Categories* (Check all categories that apply)			
						License Classification**	License No. **	SBE*	DBE*	WBE*	DVBE*
GENERAL CONTRACTOR											
								☐	☐	☐	☐
SUBCONTRACTORS											
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐

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Project Name: Student Success Center
Project Number: 950512

1	2	3	4	5	6	7		8			
Full Name of Business	Portion of the Work	Street Address, City, State and ZIP	Telephone No / FAX No	Contact Name	Type of Ownership	License Info **		Business Categories* (Check all categories that apply)			
						License Classification**	License No. **	SBE*	DBE*	WBE*	DVBE*
GENERAL CONTRACTOR											
								☐	☐	☐	☐
SUBCONTRACTORS											
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐
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								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐

Column 6 – Type of Ownership	Column 8 - Business Categories
SP = Sole Proprietorship P = Partnership C = Corporation JV = Joint Venture O = Other	SBE = Small Business Enterprise DBE = Disadvantaged Business Enterprise WBE = Woman Business Enterprise DVBE = Disabled Veteran Business Enterprise

* Regardless of tier, a completed Self-Certification must be submitted for each SBE, DBE, WBE, DVBE indicated on this Exhibit.
** List only those License Classification and Numbers relevant to this project.

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APPLICATION FOR RETENTION RELEASE

Project Name: Campus Solar Roof Initiative **Project No.** 950581

To: _____

From: _____

Date: _____ ☐ Interim Application ☐ Final Application

(UCR BUDGET & FINANCE USE ONLY)
Date: _____ Initials: _____
☐ Accepted ☐ Rejected
☐ Resubmit

Amount of Retention

1. Total retention held to date: _____
2. Accrued interest to date: _____
3. Amount of retention to be released: _____
4. Amount of accrued interest to be released: _____
5. Retention to be withheld (remaining): _____
6. Accrued interest to be withheld: _____
7. **Total amount to be released:** _____

Justification and Supporting Documentation (Attach separate sheets as needed)

1. Attachments (Check those included with this application):
   - ☐ Contractor/Design-Builder request for release (attached justification letter)
   - ☐ ***Consent of Surety to Partial or Final Release of Retention***
   - ☐ Notary Acknowledgement
   - ☐ Power of Attorney
   - ☐ Unconditional/Conditional Waiver and Release(s) (General and all Subcontractors)
2. Action items remaining prior to Final Completion:

_____ _____

_____ _____

Approvals

Name and Address of Surety: _____

_____

_____

Name of Attorney-in-Fact: _____

The above named surety consents to the release amount in item 7 above and shall not exonerate or abrogate the payment or performance bonds for the Contract.

SUBMITTED BY:

_____
Authorized Signature
(Contractor/Design Builder)

_____
(Print Name & Title)

APPROVED BY:

_____
Signature *(Date)*
(University's Representative)

_____
Signature *(Date)*
(University's Responsible Administrator)

_____
Signature *(Date)*
(Contracts)

KEY DATES:

Beneficial Occupancy: _____
Substantial Completion: _____

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BULLETIN

University of California, Riverside

BULLETIN NO. _____

Today's Date: _____

Contract Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

To Contractor/Design Builder: _____

Address: _____

SUBJECT: _____

DESCRIPTION:

ACTION TO BE TAKEN: (as checked below)

1. ☐ **SUBMIT ESTIMATE ONLY**: You are not authorized to proceed with this work. *(Make reference to this Bulletin when replying)*
2. ☐ You are authorized to proceed with this work at no change in the contract cost or construction time.
3. ☐ Issued for information only.
4. ☐ Other: _____

REFERENCE:

1. ☐ This Bulletin is complete.
2. ☐ See Revised Sheet No. (s) _____ dated _____ which is a part of this Bulletin and a revision to Architect's Drawings Sheet No.(s) _____ dated _____ .
3. ☐ See Sheet No.(s) _____ for revisions dated _____ .
4. ☐ See Drawing No.(s) _____ dated _____ which is a part of this Bulletin and is an additional new sheet to the plans.
5. ☐ Other: _____

By: UNIVERSITY OF CALIFORNIA, RIVERSIDE

_____

(Authorized Signature)

_____

(Print Name & Title)

UCR | Planning, Design & Construction

REQUEST FOR INFORMATION (RFI)

University of California, Riverside

RFI NO. _____

Today's Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

To: _____

From: _____

Subject: _____

Make Reference to:	**Make Reference to:**
Building: _____	Spec. Section: _____
Level: _____ Room: _____	Drawing: _____ Detail: _____

Initiating Subcontractor: _____ Sub RFI#: _____ Date: _____

Information Requested: ☐ **High Priority** ☐ **Low Priority**

Requires UCR Response? ☐ Yes ☐ No Response Due By: _____

By: _____ (Print Name & Title) _____ (Authorized Signature) _____ (Date)

This RFI is due to: ☐ Contractor/Design Builder Error ☐ A/E Error ☐ Substitution ☐ Field Condition ☐ UCR Request

This RFI affects: CPM Activity #_____ Sub: _____ Critical Path: _____

Contractor/Design Builder's Proposed Solution:

Does this proposed solution affect the Contract amount? ☐ Yes ☐ No *If yes, specify value:* $_____

Does this proposed solution affect the Contract schedule? ☐ Yes ☐ No *If yes, specify number of days:* _____

UCR Response:

☐ Response includes user input ☐ Reviewed in the field ☐ Photos Taken

This response is a confirmation of the verbal RFI response given to: _____ on: _____

By: _____ (Print Name & Title) _____ (Signature) _____ (Date)

Contractor/ Design Builder ▼ UCR	UCR ▼ Consultant	Consultant ▼ UCR	UCR ▼ Contractor/Design Builder
_____ (Date)	_____ (Date)	_____ (Date)	_____ (Date)

UCR | Planning, Design & Construction

LETTER OF INSTRUCTION

University of California, Riverside

LOI NO. _____

Today's Date: _____

Contract Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

To Contractor/Design Builder: _____

Address: _____

Description:

The following information is hereby issued as a clarification or interpretation of the Contract Documents. This is a clarification or interpretation only and is not intended to change the scope of the Work, the Contract Sum, or the Contract Time.

BY UNIVERSITY'S REPRESENTATIVE:

_____
(Signature)

_____
(Name & Title)

_____
(Date)

UCR | Planning, Design & Construction

MATERIAL/PRODUCT SUBSTITUTION REQUEST
(ATTACH THIS FORM PER 01 6000)

Project Name: Rooftop Solar **Project No.** 950581

To: University's Representative
From: _____
Date: _____ Substitution No. _____

(UCR USE ONLY)
Review Date: _____
☐ Accepted ☐ Rejected
☐ Conditional Acceptance*

The following material/product substitution is submitted for review and consideration:

Specified Item: _____

Specification Section Number: _____ Sub-Article: _____

Proposed Substitution *(Mfg/Type/Model/Etc.)*: _____

Substitution Rationale:

List applicable impact on dimensions, layout, and any changes to project drawings:

List point-by-point differences between this substitution and the specified item:

Justification and Supporting Documentation (Attach separate sheets as needed)

Substantial advantage (e.g. cost, time, energy savings, etc.):

Check Applicable Attachments

☐ Manufacturer's Technical Data
☐ Laboratory Test or Performance Results
☐ Drawings and Wiring Diagrams
☐ Drawings/Description of Changes by Other Trades
☐ Other: _____
☐ Samples
☐ Manufacturer's Warranty
☐ Manufacturer's Maintenance Instructions
☐ Documentation of Code Compliance

The undersigned Contractor/Design Builder certifies:
(a) Proposed substitution has been fully investigated and determined to be of equal or superior to the specified product.
(b) Same or better warranty will be furnished for proposed substitution as for specified product.
(c) Same maintenance service and source of replacement parts, as applicable, is available.
(d) Proposed substitution does not affect dimensions and functional clearances.
(e) Responsibility for design changes, including resulting construction costs.

By Contractor/Design Builder:

_____ _____
(Authorized Signature) *(Print Name & Title)*

_____ _____
Signature (University's Representative) *Signature (Quality Assurance Representative)*

***UCR Comments:** _____

☐ *If checked, additional submittal is required per Section 01 3300.*

[DO NOT EXPAND THIS TRANSMITTAL PAGE TO MORE THAN A SINGLE SHEET]

UCR | Planning, Design & Construction

INSPECTION REQUEST

INSPECTION REQUEST INSTRUCTIONS USING CFORMS

1. *Log into http://ucr.cforms.net
2. Complete Automated Inspection Request Form
3. Select your Permit # from the drop down menu and request the inspection you are in need of
4. An e-mail will be sent to the IOR for that project, advising them that you are requesting inspection
5. Once that inspection is conducted, the IOR will input the disposition into CForms (approved, disapproved, corrections, etc.) and may add photos, documents, etc.
6. Results of the inspection is known immediately by those assigned to the project via email. Inspectors can also upload photos and other documents and attach them to the inspection file in CForms
7. Completed "As-Built" plans of project shall be provided to Inspector of Record (IOR) prior to final inspection signature
8. Once the work is completed, request a final inspection and a final inspection will be conducted. If approved, the permit will be signed as approved and complete.

*Access to CForms must be granted by Inspection Group prior to accessing CForms.

UCR | Planning, Design & Construction

SCHEDULE OF UNIVERSITY INSPECTIONS

University of California, Riverside

Today's Date: _____

Contract Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

To: UC Riverside, Planning, Design & Construction

From Contractor/Design Builder: _____

RE: PUNCH LIST SCHEDULE

The project is nearing completion.
We request that the ***FINAL INSPECTIONS*** and ***PUNCH LIST*** take place according to the following schedule:

SCHEDULED MEETINGS					
DISCIPLINE/TRADE	**NOTES**	**DAY**	**DATE**	**TIME**	**ACCEPTED?**
Roofing				☐ AM / ☐ PM	☐ YES ☐ NO
Electrical				☐ AM / ☐ PM	☐ YES ☐ NO
Structural				☐ AM / ☐ PM	☐ YES ☐ NO
Other				☐ AM / ☐ PM	☐ YES ☐ NO
Other				☐ AM / ☐ PM	☐ YES ☐ NO
Other				☐ AM / ☐ PM	☐ YES ☐ NO
Other				☐ AM / ☐ PM	☐ YES ☐ NO
Other (List):					
				☐ AM / ☐ PM	☐ YES ☐ NO
				☐ AM / ☐ PM	☐ YES ☐ NO
				☐ AM / ☐ PM	☐ YES ☐ NO
				☐ AM / ☐ PM	☐ YES ☐ NO
				☐ AM / ☐ PM	☐ YES ☐ NO
				☐ AM / ☐ PM	☐ YES ☐ NO

We anticipate preparing the Beneficial Occupancy Change Order for: _____.
(Date)

The Punch Lists will be attached and distributed. Notify the undersigned immediately with questions/concerns with the schedule above.

cc:

By Contractor/Design Builder: _____ _____
(Authorized Signature) *(Print Name & Title)*

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LIST OF MANUFACTURERS

Project Name: Rooftop Solar **Project No.** 950581

Contractor/Design Builder: _____

This exhibit shall be completed and submitted during stage four of the project closeout procedure. Refer to Specification Section 01 7700 CLOSEOUT PROCEDURES.

INSTRUCTIONS:

1. List all MANUFACTURERS selected for this project.
2. Please indicate by checking the appropriate boxes if a warranty has been submitted.

ROOF:			**OTHER:**		
1.	_____	☐	10.	_____	☐
2.	_____	☐	11.	_____	☐
3.	_____	☐	12.	_____	☐
4.	_____	☐	13.	_____	☐
ELECTRICAL:			**MISCELLANEOUS:**		
5.	_____	☐	14.	_____	☐
6.	_____	☐	15.	_____	☐
7.	_____	☐	16.	_____	☐
8.	_____	☐	17.	_____	☐
9.	_____	☐	18.	_____	☐

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PROJECT PUNCH LIST

Project Name: Rooftop Solar **Project No.** 950581

SPECIFY LOCATION
☒ **INTERIOR** ☐ **EXTERIOR**

Inspected By:	**Re-Inspected By:**	**Final Inspection By:**	**Final Acceptance By:**
(Print Name)	*(Print Name)*	*(Print Name)*	*(Print Name)*
(Date)	*(Date)*	*(Date)*	*(Date)*

Item No.	Bldg.	Level	Room	Dwg.	WALLS				Flr	Clg	Dr	Wdw	Othr	Key Note	Comments	WORK VERIFIED BY					
					N	E	S	W								Sub	Date	GC	Date	UCR	Date

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KEY NOTE INDEX

1	Add Brace	51	Plumb Floor
2	Add Hanger	52	Plumb Paving
3	Add Seismic Brace	53	Pull-wire in Conduit
4	Adjust Cab. Doors	54	Re-align Door
5	Adjust Closer	55	Regrade Area
6	Adjust Device	56	Refinish Cabinets
7	Adjust Diff/Grill	57	Refinish Door
8	Adjust Door	58	Repaint Railing
9	Adjust Drawers	59	Remove Rocks
10	Adjust Fitting	60	Remove Tape
11	Adjust Fixture	61	Replace Ballast
12	Adjust Light Fixture	62	Repl. Ceiling Tile
13	Adjust Flex	63	Replace Device
14	Adjust Hardware	64	Replace Filters
15	Adjust Hinges	65	Replace Flatwork
16	Adjust Hydrant	66	Replace Flooring
17	Adjust Latch	67	Replace Insulation
18	Adjust Margins	68	Replace Tile
19	Adjust Motion Sensor	69	Repaint
20	Adjust Photo Cell	70	Repaint Door
21	Adjust Shelves	71	Repaint Piping
22	Adjust Valve Boxes	72	Repair Countertop
23	Carpet Bubbling	73	Repair Base
24	Caulk Access Door	74	Repair Depression
25	Caulk Air Terminal	75	Repair Drywall
26	Caulk Casework	76	Repair Plaster
27	Caulk Device	77	Repair Flatwork
28	Caulk Fixture	78	Repair Flooring
29	Caulk Flashing	79	Repair Frame
30	Caulk Frame	80	Repair Grid
31	Caulk Tile	81	Repair Grout
32	Ceiling Tile Missing	82	Repair Insulation
33	Clean Diffuser	83	Repair Roofing
34	Clean Grout	84	Repair Scratches
35	Clean Fixture	85	Repair Sleeves
36	Correct Leak	86	Repair Trim
37	Cover Plate Missing	87	Repair Wall Covering
38	Door Silencers	88	Repair Window Frame
39	Fill Pothole	89	Screws to Access Doors
40	Finish Edges	90	Screws Missing
41	Firestopping Required	91	Screw Pop-out
42	Flashing Missing	92	Sprinkler Escutcheon
43	HW Boots @ Sink	93	Stake Trees
44	J-box Cover	94	Tag Electrical Wiring
45	Labels/Signs Missing	95	Thermostat cover
46	Paint Ceiling Grid	96	Tighten Cover Plate
47	Paint Diffuser	97	Tighten Fixture
48	Paint Duct/Valve	98	Tile Pop-out
49	Paint Inadequate	99	Touch up paint
50	Panelboard Labels	100	Uncover Valves

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NOTIFICATION FOR EQUIPMENT DEMONSTRATION AND TRAINING

University of California, Riverside

Today's Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

To UCR Project Manager: _____

From Contractor/Design Builder: _____

RE: Equipment Demonstration/Training Schedule

The proposed schedule for system inspection, equipment and maintenance instruction for specialty items is as follows:

SPECIFIED ITEM		DAY/DATE/TIME/LOCATION
08332	Coiling Fire Doors	
08360	Sectional Overhead Doors	
14212	Elevators	
15300	Fire Sprinkler System	
15400	Plumbing	
15500	HVAC System	
16000	Electrical Distribution	
16720	Fire Alarm	
	Other (Please List)	

DAILY SUMMARY

THURSDAY MARCH 22, 2015	Time:	THURSDAY MARCH 22, 2015	Time:
STATE FIRE MARSHAL	9:00 - 10:30	LECTURE HALL SOUND	8:30 - 10:00
PLUMBING	10:30 - 11:00	CONFERENCE SOUND	8:30 - 10:00
HVAC SYSTEMS	10:30 - 12:00	OPERABLE PARTITIONS	10:00 - 10:30
ENERGY MANAGEMENT CONTROLS	10:30 - 12:00	SECTIONAL DOORS	10:00 - 10:30

All meetings will originate at the specified location, unless otherwise notified.

Please arrange to have the appropriate representatives from your office or department in attendance. If anyone has concerns with this schedule, please let me know at your earliest convenience.

Cc:

UCR | Planning, Design & Construction

CERTIFICATE OF BENEFICIAL OCCUPANCY

University of California, Riverside

Date of Issuance: _____

Contract Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

University's Representative: _____

Contractor/Design Builder: _____

University takes Beneficial Occupancy of the portion of the Work described as follows:

1. Beneficial Occupancy shall be for the following portion of the Work:

2. The date of commencement of Beneficial Occupancy of the above described portion of the Work is:

_____
Date
(Month, Date, Year)

3. The systems or equipment listed on Schedule 1 to this Certificate are fully operational and will be utilized by the University. The Contractor/Design Builder shall remain fully responsible for the operation and maintenance of such systems and equipment. For such systems and equipment only, the Guarantee to Repair Period shall commence on the date set forth in Paragraph 2 of this Certificate.

4. Contractor/Design Builder shall continue to maintain all insurance required by the Contract in full force and effect.

5. A list of items to be completed or corrected in the portion of the Work described in Paragraph 1 of this Certificate prior to Final Completion is set forth in Schedule 2 to this Certificate. The failure to include any items on such a list does not alter the responsibility of the Contractor/Design Builder to complete all Work in accordance with the Contract Documents.

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CERTIFICATE OF BENEFICIAL OCCUPANCY

Project Name: Student Success Center Project No. 950512

PLANNING, DESIGN & CONSTRUCTION

(Signature)

(Print Name & Title)

(Date)

ENVIRONMENTAL HEALTH & SAFETY

(Signature)

(Print Name & Title)

(Date)

CONTRACTOR/DESIGN BUILDER

(Signature)

(Print Name & Title)

(Date)

FACILITIES MANAGEMENT

(Signature)

(Print Name & Title)

(Date)

PLANNING, DESIGN & CONSTRUCTION

(Signature)

(Print Name & Title)

(Date)

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

(Signature)

(Print Name & Title)

(Date)

cc:
Project Manager
Facilities Management
Contractor/Design Builder
Document Control
University's Representative
Director of Quality Assurance
UCR Budget & Finance
Insurance Company
Contract Administrator
Bonding Company

UCR | Planning, Design & Construction

CERTIFICATE OF BENEFICIAL OCCUPANCY

Project Name: Student Success Center Project No. 950512

Contractor/Design Builder

Contacts for Beneficial Occupancy

GENERAL CONTRACTOR/DESIGN BUILDER

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

ELECTRICAL CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

MECHANICAL (HVAC) CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

PLUMBING CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

CONTROLS CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

ELEVATOR CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

UCR | Planning, Design & Construction

CERTIFICATE OF BENEFICIAL OCCUPANCY

Project Name: Student Success Center Project No. 950512

SCHEDULE 1
FULLY OPERATIONAL SYSTEMS AND EQUIPMENT

INSTRUCTIONS: List all fully operational building operating systems and equipment accepted by the University. The Guarantee to Repair Period shall commence on the date set forth in Paragraph 2 of this Certificate for the following systems and equipment only.

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CERTIFICATE OF BENEFICIAL OCCUPANCY

Project Name: Student Success Center Project No. 950512

SCHEDULE 2
ITEMS TO BE COMPLETED OR CORRECTED PRIOR TO FINAL COMPLETION

INSTRUCTIONS: List all items to be completed or corrected in the portion of the Work described in Paragraph 1 of this Certificate prior to Final Completion. The failure to include any items on this list does not alter the responsibility of the Contractor/Design Builder to complete all Work in accordance with the Contract Documents.

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CERTIFICATE OF SUBSTANTIAL COMPLETION

University of California, Riverside

Date of Issuance: _____

Contract Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

University's Representative: _____

Contractor/Design Builder: _____

1. The Work has been reviewed and the date of ***Substantial Completion*** is hereby established as:

_____
(Date)

2. A Certificate of Beneficial Occupancy was issued on:

_____ ☐ ***NOT APPLICABLE***
(Date)

3. **University will release the following amount of retention to Contractor/Design Builder:**

_____
(in words)

$ _____
(in figures)

In accordance with the Contract Documents, Contractor/Design Builder is notified as follows:

A. Without limitation of Contractor/Design Builder's obligation to fully complete the Work within the Contract Time, Contractor/Design Builder shall complete or correct the Work listed on Schedule 2.

B. Contractor/Design Builder shall be responsible for all Contract requirements except for the following items for which the University is responsible for: security, maintenance, heat, utilities, insurance and damage to the Work or such designated portion thereof.

C. The systems or equipment listed on Schedule 1 of this Certificate are fully operational and will be utilized by the University. The Contractor/Design Builder shall remain fully responsible for the operation and maintenance of such systems and equipment. For such systems and equipment only, the Guarantee to Repair Period shall commence on the date set forth in Paragraph 1 of this Certificate.

D. A list of items to be completed or corrected prior to Final Completion is set forth in Schedule 2 of this Certificate. The failure to include any items on such a list does not alter the responsibility of the Contractor/Design Builder to complete all Work in accordance with the Contract Documents.

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CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name: Rooftop Solar Project No. 950581

PLANNING, DESIGN & CONSTRUCTION

(Signature)

(Print Name & Title)

(Date)

ENVIRONMENTAL HEALTH & SAFETY

(Signature)

(Print Name & Title)

(Date)

CONTRACTOR/DESIGN BUILDER

(Signature)

(Print Name & Title)

(Date)

FACILITIES MANAGEMENT

(Signature)

(Print Name & Title)

(Date)

PLANNING, DESIGN & CONSTRUCTION

(Signature)

(Print Name & Title)

(Date)

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

(Signature)

(Print Name & Title)

(Date)

cc:
Project Manager
Facilities Management
Contractor/Design Builder
University's Representative
Director of Quality Assurance
UCR Budget & Finance
Document Control
Insurance Company
Contract Administrator
Bonding Company

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CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name: Rooftop Solar Project No. 950581

Contractor/Design Builder

Contacts for Substantial Completion

GENERAL CONTRACTOR/DESIGN BUILDER

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

ELECTRICAL CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

MECHANICAL (HVAC) CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

PLUMBING CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

CONTROLS CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

ELEVATOR CONTRACTOR

Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

OTHER

Trade/Discipline: _____
Person to Contact: _____
Business Phone: _____
Fax: _____
Mobile/Pager: _____
Email Address: _____

UCR Planning, Design & Construction

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name: Rooftop Solar Project No. 950581

SCHEDULE 1
FULLY OPERATIONAL SYSTEMS AND EQUIPMENT

INSTRUCTIONS: List all fully operational building operating systems and equipment accepted by the University that have not already been accounted for in the executed Certificate of Beneficial Occupancy. The Guarantee to Repair Period shall commence on the date set forth in Paragraph 2 of this Certificate for the following systems and equipment only:

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CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name: Rooftop Solar Project No. 950581

SCHEDULE 2
ITEMS TO BE COMPLETED OR CORRECTED PRIOR TO FINAL COMPLETION

INSTRUCTIONS: List all items to be completed or corrected in the portion of the Work described in Paragraph 1 of this Certificate prior to Final Completion. The failure to include any items on this list does not alter the responsibility of the Contractor/Design Builder to complete all Work in accordance with the Contract Documents.

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GENERAL CONTRACTOR CLAIM CERTIFICATION

Project Name: Rooftop Solar Today's Date: _____

Project No. 950581 Contract Date: _____

Contractor/Design Builder: _____

PURSUANT TO ARTICLE 4.3.3 OF THE GENERAL CONDITIONS, I CERTIFY AS FOLLOWS:

1. The Claim to which this certification is attached is made in good faith.

2. Amounts claimed for costs, expenses and damages incurred by Contractor are accurate and complete. Supporting data for amounts incurred by Contractor is accurate and complete. Any such supporting data, including any such new amounts, submitted after the execution of this certification, will be accurate and complete.

3. To the best of my knowledge and belief, amounts claimed, and supporting data submitted by Contractor on behalf of any and all subcontractors or suppliers, of all tiers, or any person or entity under Contractor, are accurate and complete. Contractor will not submit, after the date of execution of this certification, any such supporting data, including any such new amounts that, to the best of my knowledge and belief, is not accurate and complete.

4. The amount requested accurately reflects the adjustment of the Contract Sum for which the Contractor believes the University is liable.

5. Attached hereto is a certification that has been executed by each Subcontractor claiming not less than 5% of the total monetary amount sought by the claim to which this certification is attached.

6. I am duly authorized to certify the Claim on behalf of the Contractor.

I declare, under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this Declaration was executed at:

_____, _____ _____, _____ State of _____, _____
(City) *(County)*

on _____.
(Month/Day/Year)

_____
(Signature)

_____
(Print Name)

_____
(Company Name)

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SUBCONTRACTOR CLAIM CERTIFICATION

Project Name: Campus Solar Roof Initiative Today's Date: _____

Project No. 950581 Contract Date: _____

Contractor/Design Builder: _____

PURSUANT TO ARTICLE 4.3.3 OF THE GENERAL CONDITIONS, I CERTIFY AS FOLLOWS:

1. The portion of the Claim made on behalf of the Subcontractor to which this certification is attached is made in good faith.

2. Amounts claimed for costs, expenses and damages incurred by the Subcontractor are accurate and complete. Supporting data for amounts incurred by the Subcontractor is accurate and complete. Any such supporting data, including any such new amounts, submitted to Contractor after the execution of this certification, will be accurate and complete.

3. To the best of my knowledge and belief, amounts claimed, and supporting data submitted to Contractor by the Subcontractor on behalf of any and all subcontractors or suppliers to Subcontractor, of all tiers, or any person or entity under Subcontractor, are accurate and complete. Subcontractor will not submit, after the date of execution of this certification, any such supporting data, including any such new amounts that, to the best of my knowledge and belief, is not accurate and complete.

4. The amount requested accurately reflects the amount for which the Subcontractor believes the University is liable to Contractor.

5. I am duly authorized to certify the Claim on behalf of the Subcontractor.

I declare, under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this Declaration was executed at:

_____, _____ _____, _____ State of _____, _____
(City) *(County)*

on _____.
(Month/Day/Year)

_____
(Signature)

_____
(Print Name)

_____
(Company Name)

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EXPANDED LIST OF SUBCONTRACTORS

(to be submitted as soon as each subcontractor is selected – see General Conditions)

Project Name: Rooftop Solar **Project No.** 950581

Provide in the spaces below:

(a) Phase of work (Phase 1 – Design Development or Phase 3 – Construction)
(b) The portion of the work which will be done by each subcontractor. The Design Builder shall list only one subcontractor for each such portion
(c) The name of each subcontractor who will perform work or labor or render service to the Design Builder in or about the construction of the work or improvement, or a subcontractor licensed by the state of California who, under subcontract to the Design Builder, specifically fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of 1/2 of 1 percent of the Design Builder's total bid
(d) Type of license
(e) Verified license number
(f) Location of the place of business (full street address, city, state and zip code)

Subcontractor Information						
Phase (a)	**Portion of the Work Activity (b)**	**Full Name (c)**	**Type of License (d)**	**Verified License No. (e)**	**Street Address (f)**	**City, State, Zip Code (f)**

UCR | Planning, Design & Construction

EXPANDED LIST OF SUBCONTRACTORS

(to be submitted as soon as each subcontractor is selected – see General Conditions)

Project Name: Rooftop Solar **Project No.** 950581

Subcontractor Information						
Phase (a)	**Portion of the Work Activity (b)**	**Full Name (c)**	**Type of License (d)**	**Verified License No. (e)**	**Street Address (f)**	**City, State, Zip Code (f)**

(Note: Add additional pages if required.)

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COMPLETED PROJECT DOCUMENT TRANSMITTAL

University of California, Riverside

Date: _____

Project Name: Campus Solar Roof Initiative Project No. 950581

To Facilities Management: ATTN: _____

From D&CS Project Manager: _____

The referenced project has been completed and the Notice of Completion has been filed. Pursuant to the requirements of the Contract Documents the Contractor/Design Builder has submitted the required Record Drawings Operation and Maintenance Manuals Instructions for Systems and Equipment and Warranties Guarantees and Bonds. The submittals listed on the attached sheets have been reviewed by the Project Manager and Project Inspector of Record and have been found to comply with the requirements of the contract.

PLANNING, DESIGN & CONSTRUCTION PROJECT MANAGER	PLANNING, DESIGN & CONSTRUCTION DIRECTOR OF CONSTRUCTION & INSPECTION
_____ *(Signature)*	_____ *(Signature)*
_____ *(Print Name)*	_____ *(Print Name)*
_____ *(Date)*	_____ *(Date)*

RECEIVED BY FACILITIES MANAGEMENT

_____ *(Signature)*

_____ *(Print Name & Title)*

_____ *(Date)*

Attachments:
Warranties, Guarantees, and Bonds
Operations and Maintenance Manuals
Instructions for Systems and Equipment
Record Drawings

UCR | Planning, Design & Construction

COMPLETED PROJECT DOCUMENT TRANSMITTAL

Project Name: Rooftop Solar Project No. 950581

WARRANTIES, GUARANTEES, AND BONDS

INSTRUCTIONS: Attach warranties, guarantees, and bonds for all materials, furnishings and equipment provided by Contractor/Design Builder as required by Specification Section 01 7700 CLOSEOUT PROCEDURES.

UCR | Planning, Design & Construction

COMPLETED PROJECT DOCUMENT TRANSMITTAL

Project Name: Rooftop Solar Project No. 950581

OPERATIONS AND MAINTENANCE MANUALS

INSTRUCTIONS: Attach all operations and maintenance manuals provided by Contractor/Design Builder as required by Specification Section 01 7700 CLOSEOUT PROCEDURES.

UCR | Planning, Design & Construction

COMPLETED PROJECT DOCUMENT TRANSMITTAL

Project Name: Rooftop Solar Project No. 950581

INSTRUCTIONS FOR SYSTEMS AND EQUIPMENT

INSTRUCTIONS: Attach all instructions for systems and equipment in accordance with the instructions in Specification Section 01 7700 CLOSEOUT PROCEDURES.

UCR | Planning, Design & Construction

COMPLETED PROJECT DOCUMENT TRANSMITTAL

Project Name: Rooftop Solar Project No. 950581

RECORD DRAWINGS

INSTRUCTIONS: Attach all record drawings provided by Contractor/Design Builder as required by Specification Section 01 7700 CLOSEOUT PROCEDURES.

DOCUMENT 00 0110 – TABLE OF CONTENT

DIVISION 01 – GENERAL REQUIREMENTS

Section No.	Section Title
01 1000	Summary
01 1400	Design Builder Use of Site
01 2600	Contract Modifications
01 2900	Payment Procedures
01 3100	Project Management and Coordination
01 3150	Coordination and Detailing Activity
01 3200	Construction Progress Documentation
01 3233	Photographic Documentation
01 3250	Web Based Construction Management
01 3300	Submittal Procedures
01 3540	Environmental Mitigation
01 4000	Quality Requirements
01 4100	Regulatory Requirements
01 4200	Reference Standards
01 4550	Roofing and Waterproofing Inspection Services
01 5000	Temporary Facilities and Controls
01 5639	Tree and Plant Protection
01 6000	Product Requirements
01 7300	Execution
01 7329	Cutting and Patching
01 7419	Construction Waste Management
01 7700	Closeout Procedures
01 7823	Operation and Maintenance Data
01 7839	Project Record Documents
01 7900	Demonstration and Training
01 9113	General Commissioning Requirements

.....

.....

SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Work covered by the Proposal Documents.
2. Type of the Contract.
3. Work phases.
4. Work under other contracts.
5. Products ordered in advance.
6. University-furnished products.
7. Use of premises.
8. University's occupancy requirements.
9. Work restrictions.
10. Specification formats and conventions.

B. Related Sections include the following:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of University's facilities.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Rooftop Solar, Project No. 950581.

1. Project Location: 900 University Ave., Riverside, CA 92521

B. Owner: Regents of the University of California

1. Owner's Representative:
   a. University of California, Riverside, Planning, Design & Construction Offices.
   b. John Franklin, Project Manager
   john.franklin@ucr.edu

C. The Work consists of the following:

Design Conditions:

1.3 TYPE OF CONTRACT

A. Project will be designed and constructed under a single prime contract.

1.4 WORK PHASES

A. The Work shall be conducted in three (3) phases in the following order, with each phase substantially complete before beginning the next phase unless otherwise directed by the University's Representative:

1. Phase One: This phase consists of the preparation of Schematic and Design Development level drawings and specifications based upon the design document submitted as part of the Design Builder's Proposal for the project which have been accepted by the University. The Contract Time for this phase is identified in the Contract. The Contract Time periods for this phase shall commence on the date identified in the Notice to Proceed.
2. Phase Two: This phase consists of the preparation of Construction Documents, Drawings and Specifications, based upon the documents approved in Phase One of the Project. The Contract Time for this phase will commence upon the completion of Phase One.
3. Phase Three: This phase consists of the Construction of the Project based upon the documents approved in Phase Two of the Project. The Work Contract Time for this phase is identified in the Contract. The Contract Time period for this phase shall commence on the date identified in the Contract Documents.

B. Before commencing Work of each phase, submit a schedule showing the sequence, commencement and completion dates, and move-out and -in dates of University's personnel for all phases of the Work.

1.5 WORK UNDER OTHER CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 USE OF SITE

A. General: Design Builder shall have full use of construction site for operations as indicated by the Contract limits. Design Builder use of premises is limited only by University's right to perform work or to retain other contractors on portions of Project. Design Builder shall have limited use for construction operations outside of the Contract limits.

B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb adjacent portions of Project site beyond areas in which the Work is indicated. Areas within project fence limits that are not scheduled for improvements are to be restored to their original condition at final completion.

1. Limits: Confine constructions operations to:

   a. Work area: Areas where the new construction is located.
   b. Lay-down area: Areas for use in access, storage, and other typical activities. Lay-down areas are to be restored to their original condition at final completion.

2. University Occupancy: Allow for University occupancy of Project site.
3. Driveways and Entrances: Keep fire lanes, driveways, parking garage, loading areas, and entrances serving other facilities clear and available to University's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

   a. Schedule deliveries to minimize use of driveways and entrances.
   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

4. Parking:

   a. General parking for construction forces shall be coordinated with Design Builder, UCR TAPS (Transportation and Parking Services) and University Representative. Monthly parking passes are available for purchase at:
      1) 683 Linden Street
         Riverside, CA 92521
   b. Limited parking may be allowed adjacent to Contractors on site office facilities as well as designated temporary construction lay-down area.

   c. Comply with the University's parking regulations.

C. Use of Site for Dwelling: The Site may not be used for residential purposes under any conditions. Do not provide or allow on-site facilities that could be used for habitation.

1.7 UNIVERSITY'S OCCUPANCY REQUIREMENTS

A. Full University Occupancy: University will occupy existing adjacent building(s) during entire construction period. Cooperate with University during construction operations to minimize conflicts and facilitate University usage. Perform the Work so as not to interfere with University's day-to-day operations. Maintain existing exits, unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used adjacent facilities without written permission from University's Representative.
2. Provide not less than 7 days notice to University's Representative of activities that will affect University's operations.

B. University Occupancy of Completed Areas of Construction: University reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion of all portions of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. University will prepare a Certificate of Beneficial Occupancy for each specific portion of the Work to be occupied before completion of the project. Comply with requirements in Division 01 Section, "Closeout Procedures" for partial occupancy.
2. Obtain a Beneficial Occupancy before University occupancy.
3. Before partial University occupancy, mechanical and electrical systems shall be operational, and required tests and inspections shall be successfully completed. On occupancy, University will operate and maintain mechanical and electrical systems serving occupied portions of building.
4. On occupancy, University will assume responsibility for maintenance and custodial service for occupied portions of building.

1.8 WORK RESTRICTIONS

A. On-Site Work Hours: Work shall be generally performed during extended working hours of 7:00 a.m. to 9:00 p.m., Monday through Friday, Saturdays (when necessary) 8:00 a.m. to 5:00 p.m., except as otherwise indicated. Requests for exceptions must be submitted to the University two days before the Work is to commence:

1. No Sunday work.
2. Weekend Hours: to be approved in advance by the University's Representative.
3. Early Morning Hours: if the University determines that it is unlikely to affect adjacent campus activities and personnel.
4. Hours for Utility Shutdowns: shall be during off hours or weekends unless otherwise approved by the University's Representative.
5. Night work to be approved in advance by the University Representative for the coordination of Equipment Deliveries due to adjacent ongoing project construction.

B. Noise: Prior to initiating on-site construction, University Representative shall approve Design Builder specifications that include measures to reduce construction/demolition noise to the maximum extent feasible. These measures shall include, but are not limited to, the following:

1. Noise-generating construction activities occurring Monday through Friday shall be limited to the hours of 7:00 am to 7:00 pm, except during summer, winter, or spring break at which construction may occur at the times approved by University Representative.
2. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) off-campus land uses shall be limited to the

hours of 9:00 am to 6:00 pm on Saturdays, with no construction occurring on Sundays or holidays.

3. Noise-generating construction activities occurring on weekends in the vicinity of (can be heard from) on-campus residential housing shall be limited to the hours of 9:00 am to 6:00 pm on Saturdays, with no construction on Sundays or holidays. However, as determined by University Representative, if on-campus residential housing is unoccupied (during summer, winter, or spring break, for example), or would otherwise be unaffected by construction noise, construction may occur at any time.
4. Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise-reduction devices to minimize construction-generated noise.
5. Stationary construction noise sources such as generators, pumps or compressors shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible, or as approved by University Representative.
6. Laydown and construction vehicle staging areas shall be located at least 100 feet from noise-sensitive land uses (i.e., campus housing, classrooms, libraries, and clinical facilities), as feasible, or as approved by University Representative.
7. All neighboring land uses that would be subject to construction noise shall be informed at least two weeks prior to the start of each construction project, except in an emergency situation. Provide sufficient notice to University Representative to allow notice to be issued by the University or work shall not be allowed.
8. Loud construction activity such as jackhammering, concrete sawing, asphalt removal, core drilling, pile driving, and large-scale grading operations occurring within 600 feet of a residence or an academic building shall not be scheduled during any finals week of classes. A finals schedule is available on the University's website.

C. University Holidays: The following is a list of University holidays. No Work requiring inspection should be scheduled on these dates. Design Builder shall verify with the University's Representative the specific dates of each University holiday for each year.

1. New Year's Day
2. Martin Luther King Day
3. Presidents' Day
4. Cesar Chavez Day
5. Memorial Day
6. Independence Day
7. Labor Day
8. Veteran's Day
9. Thanksgiving Day (and day following)
10. Christmas Eve Day
11. Christmas Day
12. New Year's Eve Day

D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by University or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify University not less than fourteen days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without University's Representative written permission. Under no circumstances shall the contractor shutdown utility systems.
3. Utility outages involving reclaimed water, potable water, high temperature water, chilled water, compressed air, natural gas, and 12 kV electricity shall be conducted by or under the supervision of the University's Facilities Management.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.

1.9 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and 2014 CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
3. Refer to General Conditions, Article 1, paragraph 1.3.4 for additional requirements.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Refer to General Conditions, Article 1, paragraph 1.3.5.
2. Refer to General Conditions, Article 1, paragraphs 1.3.6 and 1.3.7 for additional requirements.
3. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Design Builder. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Design Builder or by others when so noted.

a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.10 MISCELLANEOUS PROVISIONS

A. Archaeological Artifacts: The University requires that all excavation and related construction activities be suspended immediately on discovery of archaeological artifacts on any construction site until the University's Representative authorizes continuation of construction activities.

1. Archaeological artifacts include, but are not limited to, pottery shards, bone fragments, spear points, and arrowheads.
2. If archaeological artifacts are found during excavation operations, stop all excavation activities immediately. Notify the University's Representative to arrange for a site inspection. Take precautions to protect artifacts in place. Do not remove or disturb artifacts unless authorized to do so by the University's Representative.
3. A qualified paleontologist shall be retained by the University to perform periodic project-specific inspections of the excavations and to salvage exposed fossils. The paleontologist shall be allowed to divert or direct grading in the area of an exposed fossil in order to facilitate evaluation and, if necessary, salvage the exposed fossil. Due to the small nature of the fossils present, fine mesh screens shall be used at the discretion of the paleontologist at project-specific inspections to collect matrix samples for processing. Provisions for preparation and identification of any fossils collected shall be made before donation to a suitable repository. All fossils collected shall be donated to an institution with a research interest in the materials.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 1400 – DESIGN BUILDER'S USE OF THE PROJECT SITE

PART 1 - GENERAL

1.1 USE OF PUBLIC THOROUGHFARES AND UNIVERSITY ROADS

A. Design Builder shall make its own investigation of the condition of available public thoroughfares and University roads, and of the clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the Project site.

B. Where materials are transported in the prosecution of the Work, do not load vehicles beyond the capacity recommended by manufacturer of the vehicles or prescribed by any applicable state or local law or regulation.

C. Use only established roads on the campus; provided, however, that such temporary haul roads as may be required in the work shall be constructed and maintained by Design Builder, subject to the approval of University's Representative. Refer to Section 01 3540 Environmental Mitigation and 01 7419 Construction Waste Management for descriptions of the Design Builder's requirements for providing an approved haul route plan to and from the campus.

D. Provide protection against damage whenever it is necessary to cross existing sidewalks, curbs, and gutters in entering upon the University roads and public thoroughfares. Repair and make good immediately at the expense of Design Builder all damages thereto, including damage to existing utilities and paving, arising from the operations under the Contract.

E. Truck staging is not allowed on campus or on any residential street surrounding the campus.

1.2 WATCHMAN'S SERVICES

A. The University will not be providing security services for the Project.

B. During all hours that Work is not being prosecuted including weekends and holidays, furnish such watchman's services as Design Builder may consider necessary to safeguard materials and equipment in storage on the Project site, including Work in place or in process of fabrication, against theft, acts of malicious mischief, vandalism, and other losses or damages.

C. The University will not be liable for any loss or damage.

1.3 SERVICE CONTINUITY

A. Within the areas of the Work, investigate and uncover all drainage lines, sewers, electrical ducts, and other piping in use or forming continuations or

utility systems required for other buildings or improvements upon the campus, and maintain such services in operation during performance of the Work of the Contract.

B. Maintain continuous services to all existing facilities during the period of construction except for the following conditions:
   1. Perform Work that involves "shut-down" of existing facilities at such times as will cause the least inconvenience to the University activities, performing at night, on Saturdays, Sundays, holidays and at the discretion of University's Representative. Furnish University's Representative written notice of exact date and time of "shut-down" at least thirty (30) working days in advance, unless a longer period is specified or agreed upon by the University. On jobs with short performance time, Design Builder shall verify with University's Representative the number of days required in advance for shut-down.
   2. The Design Builder shall include in the base bid all costs related to overtime necessary for the Work. No extra payment will be allowed for overtime to meet this requirement or the Contract Schedule.

1.4 SITE DECORUM

A. Design Builder shall control the conduct of its employees (including subcontractor's employees) so as to prevent unwanted interaction initiated by Design Builder's employees with University of California, Riverside (UCR) students, UCR staff, UCR Faculty or other individuals (except those associated with the Project), adjacent to the Project site. Without limitation, unwanted interaction by Design Builder employees would include whistling at or initiating conversations with passersby. In the event that any Design Builder employee initiates such unwanted interaction, or utilizes profanity, Design Builder shall, either upon request of University's Representative or on its own initiative, replace said employee with another of equivalent technical skill, at no additional cost to the University. No recreational/music radio sounds, other than two-way communication type, shall be audible outside the physical structure under construction. No smoking is allowed inside any structure under construction or University Building.

1.5 STORAGE

A. Design Builder's use of the Project site for the Work and storage is restricted to the areas required for the performance of the Contract or as approved by University's Representative.

1.6 TEMPORARY STAIRS, SCAFFOLD AND RUNWAYS

A. Provide all scaffolds, stairs, hoist plant, runways, platforms, and similar temporary construction as may be necessary for the performance of the Contract. Such facilities shall be of the type and arrangement as required for their specific use, substantially constructed throughout and strongly supported, well secured and complying with all applicable rules and regulations of the

Industrial Accident Commission of the State of California and all applicable laws and ordinances. Refer to Section 01 4100, Regulatory Requirements.

B. Arrange for construction equipment access to areas which may be partly blocked by existing obstructions.

1.7 CONTROL OF CONSTRUCTION WATER

A. Provide impermeable floor coverings and suitable dams to prevent damage by water used for the Work. Immediately clean up and remove all surplus water and water spilled in non-working areas. Do not allow water to overflow gutters, flood streets or parking lots.

1.8 DUST CONTROL, AIR POLLUTION AND ODOR CONTROL

A. The Design Builder shall employ measures to prevent the creation of dust, air pollution and odors.

1. Unpaved areas where vehicles are operated shall be periodically wetted down or given an equivalent form of treatment as defined in South Coast Air Quality Management District (SCAQMD) Rule 403 to eliminate dust formation.
2. All volatile liquids including fuels or solvents shall be stored in closed containers.
3. No open burning of debris, lumber or other scrap will be permitted.
4. Equipment shall be maintained in a manner to reduce gaseous emission.
5. Low sulfur fuel shall be used for construction equipment.
6. Stockpiles of excavated materials shall be protected and covered with material to prevent airborne transmission.
7. Design Builder shall provide street sweeping whenever silt from construction site is carried over to adjacent streets.

1.9 NOISE CONTROL

A. Noise control shall be maintained by the Design Builder in all areas of construction, guarding against any undue noise which may impair proper use of adjacent facilities. Activities with the highest noise potential shall be scheduled for times when background ambient noise levels are highest (i.e., during peak commute hours). Design Builder shall use noise suppressed equipment available and/or shall muffle/control noise on equipment to the maximum extent possible. Noisy construction-related operations (e.g. mixing concrete) shall be accomplished off-site to the extent feasible. Those operations which cannot be performed off-site shall be done on those areas of the site furthest from noise sensitive receptors.

B. The following noise control procedures shall be employed:

1. Maximum Noise: The Design Builder shall use equipment and methods during the course of this work that are least disruptive to adjacent offices or residences. Noise levels for trenchers, graders, trucks and pile drivers

shall not exceed 90 dBA at 50 feet as measured under the noisiest operating conditions. For all other equipment, noise levels shall not exceed 85 dBA at 50 feet.

2. Equipment: Jack hammers shall be equipped with exhaust mufflers and steel muffling sleeves. All diesel equipment shall have exhaust muffled. Air compressors shall be of a quiet type such as a "whisperized" compressor.
3. Operations: Machines shall not be left idling. Electric power shall be used in lieu of internal combustion engine power wherever possible. Equipment shall be maintained to reduce noise from vibration, faulty mufflers, or other sources.
4. Scheduling: Noisy operations shall be scheduled so as to minimize the disturbance and duration to adjacent neighborhoods and nearby student Housing complexes.

1.10 EROSION CONTROL

A. Exposed earth surfaces shall be watered to minimize dust generation as necessary according to weather conditions.

B. During winter construction, an erosion and sediment-transport control plan incorporating standard erosion control practices shall be implemented prior to the first day of earth moving activities.

1. Erosion control shall include retaining sediments within project site by the use of catch basins; using interceptor ditches and benches to prevent gullying of slopes; and preparing and implementing erosion control plans.

C. Storm Water Pollution Prevention Plan (SWPPP):

1. Design Builder to obtain all necessary SWPPP permits and designate a Qualified SWPPP Practitioner (QSP) to oversee the project. The Design Builder shall retain and oversee the QSP for the duration of the schedule until Substantial Completion of Phase 2.

1.11 TRENCHING SHORING:

A. Protection. Pursuant to Labor Code Sections 6705 and 6707, Design Builder shall include in its base bid all costs incident to the provision of adequate sheeting, shoring, bracing or equivalent method for the protection of Life and Limb which shall conform to the applicable Federal and State Safety Orders.

B. Before beginning excavation five feet or more in depth, Design Builder shall provide to University's Representative a detailed plan showing the design or shoring, bracing, sloping, or other provisions to be made for worker protection from the hazards of caving ground during the excavation. The proposed plan shall comply with the State of California Construction Safety Orders, Title 8 and Title 24 of the California Code of Regulations. (CCR). The detailed plan shall be prepared by a registered civil or structural engineer registered in the State of California. The cost of required engineering services shall be borne by Design

Builder and shall be deemed to have been included in the base bid for the Work.

C. The receipt of any plan showing the design of shoring, bracing, sloping, or other provisions for worker protection shall not relieve Design Builder from its obligation to comply with Construction Safety Orders Standards and Title 24 CCR for the design and construction of such protective Work, and Design Builder shall indemnify University and University's Representative from any and all claims, liability, costs, action and causes of action arising out of or related to the failure of such protective systems. Design Builder shall defend University, its officers, employees, and agents and University's Representative in any litigation of proceeding brought with respect to the failure of such protective systems.

D. Comply with State of California Construction Safety Orders, Article 6 - Excavations, Trenches, Earthwork - whether or not the excavation, trench, or earthwork is five feet or more in depth.

END OF SECTION 01 1400

SECTION 01 2300

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by Design Builder and stated on the Price Proposal Form for certain work defined in the Proposal Requirements that may be added to or deducted from the Lump Sum Base Proposal amount if the University decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.
2. Design, engineering, coordination, labor, materials, equipment, accessories, and Design Builder and subcontractor overhead, mark-up and profit required for the alternate work shall be included in the Alternate cost.

1.3 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

E. Contract Time: Complete accepted Alternates with the time stipulated for the Work in the Agreement unless specifically provided by the University.

F. Hold the Alternates price for each Alternate for time indicated in the Alternate description beyond the date stated in the Notice to Proceed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

Alternate No. 1:

A. Fixed price for twenty-five (25) year maintenance is required. Maintenance includes, but is not limited to, the following:
   1. System Cleaning: Clean modules using only methods and frequency as recommended by manufacturer to avoid scratches and other damage. Clean exposed surfaces on other components to remove dirt, paint, or other foreign material and restore to match original factory finish.
   2. System Testing: Manufacturer recommended service person shall conduct annual verification testing to ensure actual production at the site is being accurately monitored by the online portal monitoring systems and the specified meter by the University (see Section 5-IV).
   3. System Repairs: Manufacturer recommended service person shall repair any deficiencies that occur under the system warranty and/or system performance guarantee.
   4. Monitoring system troubleshooting and assistance.

B. System Monitoring and Control: The University shall receive software/SCADA system updates along with SCADA controls (hardware), when necessary/required to keep the system up-to-date and functional. Hardware upgrades shall be included, at no cost, to maintain the integrity of the overall system, including software/online portals.

END OF SECTION 01 2300

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.2 PROPOSAL REQUESTS

A. University-Initiated Proposal Requests: University's Representative will issue a Bulletin to detail any proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the Bulletin will include supplemental or revised Drawings and Specifications. Comply with requirements of the General Conditions, Article 7 "Changes in the Work."

1. Bulletins issued by University's Representative are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change, unless directed otherwise on the Bulletin.

B. Within time specified in General Conditions after receipt of Bulletin, submit a Cost Proposal for adjustments to the Contract Sum and the Contract Time necessary to execute the change.

C. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

D. Design Builder-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Design Builder may propose changes by submitting a request for a change to University's Representative. Comply with the requirements in the General Conditions, Article 4, paragraph 4.2.

E. Cost Proposal Request Form: Use forms provided by University. Sample copies are included with the Exhibits.

1.3 CHANGE ORDER PROCEDURES

A. On University's approval of a Cost Proposal Request, University's Representative will issue a Change Order for signatures of Design Builder on form included in the Exhibits.

B. Provide all necessary backup information regarding expenditures and quantities associated with the Change Order Proposal Request as University's Representative may require.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2600

SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Cost Breakdown and Applications for Payment.

B. Related Sections include the following:

1. Division 01 Section "Allowances" for procedural requirements governing handling and processing of allowances.
2. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
3. Division 01 Section "Unit Prices" for administrative requirements governing use of unit prices.
4. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Design Builder's Contract Schedule and Submittals Schedule.

1.2 COST BREAKDOWN

A. Coordination: Coordinate preparation of the Cost Breakdown with preparation of Design Builder's Contract Schedule and General Conditions Article 9 paragraph 9.1.

1. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

B. Format and Content: Use the University's standard form, included with Application for Payment, Schedule 1. Project Manual table of contents should be used as a guide to establish line items for the Cost Breakdown.

1. Design Builder's standard form or media-driven printout will be considered on request.
2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide several line items for principal subcontract amounts, where appropriate.
3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
4. Provide a separate line item in the Cost Breakdown for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not installed. Refer to General Conditions, Article 9, paragraph 9.3.5.

a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing.

5. Provide a separate line item for mobilization that shall not exceed 1½% of the Contract Sum. Mobilization shall consist of preparatory Work and operation. This shall include but not limited to: providing bonds; insurance; financing; initial movement of personnel, equipment, supplies, and incidentals to establishment offices and other facilities and for other operations or costs incurred prior to beginning Work on the various Contract items at the project site.
6. Provide separate line items in the Cost Breakdown for initial cost of materials, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Cost Breakdown for each allowance.
8. Each item in the Cost Breakdown and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
9. Schedule Updating: Update the Cost Breakdown with each Application for Payment when Change Orders result in a change in the Contract Sum.

C. Substantiating Data: University's Representative may require substantiating information; submit data justifying line item amounts in question.

1. Provide one copy of data with cover letter for each copy of Application. Show Application number with date and line item by number with description.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by University's Representative and paid for by University.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: Refer to General Conditions Article 9, paragraph 9.3.

C. Payment Application Forms: Use forms provided by University for Applications for Payment. Sample copies are included with the exhibits.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Design Builder. University's Representative will return incomplete applications without action.

1. Entries shall match data on the Cost Breakdown and Design Builder's Contract Schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders issued before last day of Contract period covered by application.

E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to University's Representative by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. University reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit releases on University's standard forms, executed in a manner acceptable to University's Representative. Sample forms are provided with the exhibits.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. List of principal supplies and fabricators.
3. Cost Breakdown.
4. Design Builder's Contract Schedule (preliminary if not final).
5. Products list.
6. Schedule of unit prices.
7. Submittals Schedule (preliminary if not final).
8. List of Design Builder's staff assignments.
9. List of Design Builder's Design Professionals.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Surrounding Site Condition Survey Report and Videotape.

H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for University occupancy of designated portions of the Work.
3. Administrative actions and submittals that shall proceed or coincide with this application include:

    a. Occupancy permits and similar approvals.
    b. Warranties (guarantees) and maintenance agreements.
    c. Test/adjust/balance records.
    d. Maintenance instructions.
    e. Meter readings.
    f. Start-up performance reports.
    g. Changeover information related to University's occupancy, use, operation and maintenance.
    h. Final cleaning.
    i. Application for reduction of retainage, and consent of surety.
    j. Advice on shifting insurance coverage's.
    k. Final progress photographs.
    l. List of incomplete Work, recognized as exceptions to University's Representative's Certificate of Substantial Completion.
    m. Building commissioning report, if applicable to project.

I. Final Payment Application: Refer to General Conditions Article 9, paragraph 9.8. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Approved building commissioning and commissioning completion certificate.
3. Completion of items specified for completion after Substantial Completion.
4. Transmittal of required Project record documents to University.
5. Certified property survey.
6. Proof that taxes, fees and similar obligations have been paid.
7. Removal of temporary facilities and services.
8. Removal of surplus materials, rubbish and similar elements.
9. Change of door locks to University's access.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Administrative and supervisory personnel.
2. Project meetings.

    a. Preconstruction
    b. Design Progress
    c. Preinstallation
    d. Weekly Progress
    e. Shoulder to Shoulder Review Process
    f. Billing
    g. Guarantees, Bonds and Service and Maintenance Review

3. Request for Information (RFI).
4. Partnering

B. Related Sections include the following:

1. Division 01 Section “Execution” for Utility Shutdown Requirements and necessary Request Forms.
2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Design Builder's Contract Schedule.
3. Division 01 Section “Coordination and Detailing Activity” for preparing CDA drawings.
4. Division 01 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
5. Division 01 Section "Closeout Procedures" for coordinating Contract closeout.

1.2 DEFINITIONS

A. RFI: Request from Design Builder seeking information, interpretation or clarification of the Contract Documents.

B. Contingency Plan: Based upon the findings identified in the Impact Analysis, a Contingency Plan may be required by the university. This plan will identify those actions necessary to mitigate and/or minimize disruptions in utility service and to maintain operational readiness during a utility shutdown. The Design Builder shall provide all necessary management, personnel and material resources

needed to execute the plan at the time of the utility shutdown event, and such shall be included in this Contingency plan.

C. Contractor: As used herein, the Contractor is the Design Builder with overall responsibility for executing the scope of work necessitating the utility shutdown.

D. Impact Analysis: The Impact Analysis identifies all systems, operations, and parties that will be affected by the proposed shutdown of the utility and specifically what that impact is. It shall include sufficient field forensic investigations to verify as-built conditions and that all systems and parties affected by the shutdown have been identified. Drawings and work plans shall be developed to convey actual field conditions and affected physical areas and infrastructure of the facility. This research shall also identify the affected stakeholders and the resulting impacts to their operations. This Impact Analysis will be used by UCR to determine the need for development of a contingency plan.

E. UCR Architects and Engineers (A&E): is the authority requiring, and who is responsible for the review and approval process for all Capital Program project Utility Shutdown Requests and all construction documents provided to UCR.

F. UCR Architects and Engineers (A&E) Construction Inspector of Record (CIOR): Is the UCR field representative directly responsible for all construction inspections, general oversight and enforcement of all code requirements and approved construction documents, including all USR's, for the construction project. He/she will be instrumental in oversight of the Utility Shutdown event and will be present during the event.

G. UCR Architects and Engineers (A&E) Project Manager (PM): Is the UCR representative directly responsible for the preparation and general oversight and coordination of the construction project, and who is involved with the overall review, scheduling and approval of the Utility Shutdown Request (USR).

H. Utility Shutdown: A utility shutdown is any disruption or disconnects of continuity (including abandonment) of any and all utility systems for any length of time. This includes, but is not limited to: electrical, water, natural gas, fuel, fire alarm, security/automatic security cameras, sewer, communications, HVAC, automatic fire sprinkler system, etc.

I. Utility Shutdown Plan (USP): The overall plan, which includes Utility Shutdown Request Form, Impact Analysis, Shutdown Calendar, and all other details relating to the shutdown of any utilities on a specific Capital Programs, Construction and Design Project. This (USP) shall be submitted and included in the Construction Documents and Project Specifications Manual for each specific project.

J. Utility Shutdown Request (USR): The USR form identifies the time and date of the proposed shutdown, the type of shutdown, specific location, work area, affected buildings/systems, point of contact for the contractor, etc. It also

includes a required Impact Analysis. A check list is attached to the form to assist the contractor in addressing the impact analysis.

1.3 COORDINATION

A. Coordination: Coordinate design and construction operations included in different Sections of the Specifications to ensure efficient and orderly development and installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
5. Do not delegate responsibility for coordination to any Subcontractor.
6. Resolve differences or disputes between Subcontractors concerning coordination, interference.
7. Ensure that anchorage, blocking, joining, and other detailing are provided.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for University and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with the development of the construction documents and other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Design Builder's Contract Schedule.
2. Preparation of the Cost Breakdown.
3. Installation and removal of temporary facilities and controls.
4. Development of the construction documents.
5. Development of the CDA Drawings.
6. Construction of mockups.
7. Delivery and processing of submittals.
8. Progress meetings.
9. Preinstallation conferences.

10. Project closeout activities.
11. Startup and adjustment of systems.
12. Commissioning plan and commissioning schedule.

D. Coordination with the University:

1. Design Builder shall notify University's Representative in writing a minimum of 72 hours (except utility shutdowns or connections. See utility shutdown requirements in section 01 7300 - Execution.) in advance of any activity that will be outside the contract limits or that would interfere with the University's daily operation.
2. Observation of Work by University's Representative shall not be interpreted as relieving the Design Builder from responsibility for coordination of all Work, superintendents of the Work, or scheduling and direction of the Work.
3. Coordinate with University's Representative to assure that Work on the project site, access to and from the project site, and the general conduct of operations is maintained in a safe and efficient manner, and that disruption and inconvenience to existing streets and property is minimized.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as University's property.

1.4 SUBMITTALS

A. Key Personnel Names: At Notice to Proceed, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site unless submitted as part of Request for Proposal (RFP). Any changes from RFP require University's approval. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project Manager, Field Engineers and superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

B. Superintendent or assistant superintendent shall be present at any time work is being performed, including weekends and overtime hours.

1.6 PROJECT MEETINGS

A. The person designated to make decisions binding to and on behalf of the Design Builder, defined as Design Builder's Project Manager, will attend meetings described below. Additional meetings may be required for special consideration as determined by the University's Representative.

B. Preconstruction Conference: University's Representative will schedule a preconstruction conference and organizational meeting, before start of construction, at Project site or another convenient location.

1. Attendees: University's Representatives, Design Builder's Senior Officer, Design Builder's Project Manager, Field Engineers and superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project. Others may attend as invited by the University's Representative.
2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Procedures to be followed during performance of the Work.
    b. Tentative contract schedule.
    c. Phasing.
    d. Critical work sequencing and long-lead items.
    e. Designation of key personnel and their duties.
    f. Procedures for processing field decisions and Change Orders.
    g. Procedures for request for information (RFI).
    h. Procedures for testing and inspecting.
    i. Procedures for processing Applications for Payment.
    j. Distribution of the Contract Documents.
    k. Submittal procedures.
    l. LEED requirements (Sustainable design).
    m. Preparation of Record Documents.
    n. Use of the premises and if applicable, existing building(s).
    o. Work restrictions.
    p. University's occupancy requirements.
    q. Responsibility for temporary facilities and controls.
    r. Construction waste management.
    s. Parking availability.
    t. Office, work, and storage areas.
    u. Equipment deliveries and priorities.
    v. First aid.
    w. Security.
    x. Progress cleaning.
    y. Working hours.

3. Minutes: University's Representative will record and distribute meeting minutes.

C. Design Progress Meetings: University's Representative will schedule regular weekly Design Progress Meetings to determine the progress of the development of the Design portion of the Work prior to allowing construction to commence.

1. Attendees: The University Representative and University's Consultants; the Design Builder's Design Professional, the Design Builder's Senior Officer, Project Manager, Superintendent, Field Engineers, major subcontractors and others as directed by the University's Representative.
2. Agenda: Design Builder shall be responsible for developing the meeting agendas. Discuss items of significance that could affect the completion of the Construction Drawings and Specifications and have a major impact of the quality, cost and overall schedule for the Work. Agenda shall be submitted for approval to the University's Representative a minimum of 48 hours prior to meeting.
3. Minutes: Record and distribute meeting minutes.

D. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the University's Representative of scheduled meeting date a minimum of 7 days prior to meeting. Others may be invited as directed by the University's Representative.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. The Contract Documents.
    b. Options.
    c. Related request for information (RFI).
    d. Related Change Orders.
    e. Purchases.
    f. Deliveries.
    g. Submittals.
    h. Review of mockups.
    i. Possible conflicts.
    j. Compatibility problems.
    k. Time schedules.
    l. Weather limitations.
    m. Manufacturer's written recommendations.
    n. Warranty requirements.
    o. Compatibility of materials.
    p. Acceptability of substrates.
    q. Temporary facilities and controls.
    r. Space and access limitations.

s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

E. Construction Progress Meetings: Attend progress meetings at weekly intervals. Coordinate dates and location of meetings with the University's Representative.

1. Attendees: In addition to University Representatives, Design Builder's Project Manager and Superintendent, Design Professional and each subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work. Others may be invited as directed by the University's Representative.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Design Builder's Contract schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Design Builder's Contract Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review look ahead schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.

5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) Request for information (RFI).
16) Status of Bulletins
17) Status of cost proposal requests.
18) Pending changes.
19) Status of Change Orders.
20) Pending claims and disputes.
21) Documentation of information for payment requests.
22) Closeout procedures.

3. Minutes: University's Representative will record and distribute to Design Builder the meeting minutes.
4. Reporting: Design Builder shall distribute minutes of the meeting to each party recorded as present and to parties who should have been present.

   a. Schedule Updating: Revise Design Builder's Contract schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

F. Shoulder-to-Shoulder Review Process:

1. Shall be implemented in an effort to enhance and accelerate the review and approval process of submittal documents required during the Drawing Development, Construction, and Commissioning. A U.C. Riverside representative will schedule regular Design Progress Meetings to determine the progress of the development of the Design portion of the Work. These meetings will start within two weeks of the first Notice to Proceed date. This NTP date is contingent upon project award to the Design Builder and will occur as noted below:

   a. Design to Budget Period (NTP through Basis of Design): Once a week minimum and as required to accomplish this Design to Budget effort.
   b. Design Development Period (Basis of Design to 60% baseline Documents: Weekly Meetings.
   c. Design Completion by Subcontractors and Construction Period: Biweekly meetings until submittal completion then as needed and as determined by U.C. Riverside.

2. Consists of multiple (more frequent) live and active workshops involving all decision makers (Design Builder, Design Professionals; Architect and Engineers of Record, Subcontractors, Specialty Contractors, Specialty Consultants, U.C. Riverside employees, consultants and peer reviewers) where real-time decisions and approvals are accomplished. The Design Builder shall be responsible for staffing Shoulder-to-Shoulder review sessions with key personnel from the appropriate design disciplines to accommodate timely approvals.
3. Throughout the process, trust, respect, and guidelines for open communication and agreement are established and maintained. This allows for a productive integrated team, positive performance outcomes, cost savings, reduction in overall design and construction schedule.
4. Goals and Objectives:

    a. Integrate the entire project team:

        1) Establish clear lines of communication and points of contact. Project team shall consist of, but is not limited to, Design Builder, design professionals, architect and engineers of record, subcontractors, specialty contractors, specialty consultants, U.C. Riverside representatives, and agency-employed consultants.
        2) Schedule Shoulder-to-Shoulder workshops through the duration of the project (reviews may be scheduled at milestones tied to the baseline schedule – more frequent reviews may occur with larger complex packages).

            a) Meetings: To discuss significant items that could affect the completion of the Construction Drawings and Specifications or have a major impact of the quality, cost and schedule for the Work. The agenda shall be submitted to the U.C. representative a minimum of 48 hours prior to the scheduled meeting date.
            b) Agendas: the Design Builder shall be responsible for developing and distributing the meeting agendas.
            c) Minutes: the Design Builder will record and distribute the meeting minutes.

        3) Co-locate key personnel at appropriate facilities.

    b. Establish and agree on goals and objectives for a successful design:

        1) Promote an environment of cooperation, teamwork, and collaboration to develop the best solutions within the limits of the project scope and budget.

    c. Confirm and approve Project requirements post NTP:

1) Resolve outstanding issues concerning the Design Builder's Work.
2) Gain insight from the user(s) into what works and what doesn't (user(s), in turn, shall give meaningful feedback in a timely manner and not delay decisions).

d. Scope and Code Compliance Review:

1) U.C. representative and agency-employed consultants shall confirm or reject building systems or assemblies in a timely manner.
2) Mark up drawings, specs and/or cut sheets:

a) Place review comments directly on the documents (comments should be made in red, legible, and understandable).
b) Scan and upload documents onto web-based project management system to be accessed by all parties involved.

3) Identify all submittals in the submittal schedule not anticipated to be addressed in the specifications.
4) U.C. Riverside reserves the right to withhold action on any submittal that requires coordination with other submittals until all subsequent related submittals are received by the University.
U.C. Riverside's review period will not begin until all interrelated submittals are received and available for review by the University.

G. Billing Meetings: Attend a monthly meeting prior to submittal of the Application for Payment, at a location acceptable to University's Representative.

1. Attendees:

a. University's Representative
b. Design Builder's Project Manager
c. Superintendent
d. Subcontractors, as appropriate
e. Others as directed by University's Representative

2. Agenda:

a. Determination of current schedule progress.
b. Review of Work completed based on the cost loaded schedule to be billed in the Application for Payment.

3. Schedule Updating: Revise the Contract Schedule prior to the meeting based on information determined at prior progress meetings. Review

schedule revisions and prepare a final revised schedule for submission with the application for payment following the meeting.

H. Guarantee to Repair Review Meetings: In accordance with the General Conditions, Article 12 and as specified herein; attend a meeting at the fourth, eighth and 11th month following the date of Substantial Completion.

1. Attendees:

a. University's Representative
b. User's Representative
c. University's Consultants as appropriate
d. Design Builder's Project Manager
e. Design Professional, as appropriate
f. Subcontractors, as appropriate
g. Others as appropriate or as directed by University's Representative

2. Agenda:

a. Review any issues with the project that might be defective work as noticed by the University Representatives.
b. Review of guarantees, bonds, service and maintenance contracts for materials and equipment that might be in effect.
c. Walk the project site to review any defective work.

1.7 REQUEST FOR INFORMATION (RFI)

A. Procedure: Immediately on discovery of any apparent conflicts, omissions, or errors, interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form provided in the exhibits.

1. RFIs shall be submitted only by the Design Builder. RFIs submitted by entities other than Design Builder will be returned with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Design Builder's work or work of subcontractors.
3. Number RFIs sequentially. Follow RFI number with sequential numerical suffix as necessary for each resubmission. For example, the first RFI would be A001.0. The second RFI would be A002.0. The first resubmittal of RFIs A001 and A002 would be A001.1 and A002.1 respectively.
4. Limit each RFI to one subject.

B. Submit an RFI if one of the following conditions occur:

1. Design Builder discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
2. Design Builder discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents.

3. Design Builder discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.

C. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

1. Project name.
2. Date.
3. Name of Design Builder.
4. RFI number, numbered sequentially.
5. Specification Section number and title and related paragraphs, as appropriate.
6. Drawing number and detail references, as appropriate.
7. Field dimensions and conditions, as appropriate.
8. Design Builder's suggested solution(s). If Design Builder's solution(s) impact the Contract Time or the Contract Sum, Design Builder shall state impact in the RFI.
9. Design Builder's signature.
10. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

    a. Supplementary drawings prepared by Design Builder shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

D. Hard-Copy RFIs: Form included with Exhibits.

1. Identify each page of attachments with the RFI number and sequential page number.

E. Software-Generated RFIs: If allowed by the University’s Representative software-generated form with substantially the same content as indicated above.

1. Attachments shall be electronic files in Adobe Acrobat PDF compatible format.

F. The following RFIs will be returned without action:

1. Requests for approval of submittals.
2. Requests for approval of substitutions.
3. Requests for coordination information already indicated in the Contract Documents.
4. Requests for adjustments in the Contract Time or the Contract Sum.
5. Requests for interpretation of University's actions on submittals.
6. Incomplete RFIs or RFIs with numerous errors.

7. Submit an RFI in a manner that suggests that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.
8. Submit an RFI in an untimely manner without proper coordination and scheduling of Work of related trades.

G. University's action may include a request for additional information, in which case University's time for response will start again.

H. University's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Design Builder to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

1. If Design Builder believes the RFI response warrants change in the Contract Time or the Contract Sum, notify University in writing within 5 days of receipt of the RFI response.

I. On receipt of University's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify University within 5 calendar days if Design Builder disagrees with response.

J. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. Name and address of Design Builder.
3. Name and address of Architect.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date University's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

K. If Design Builder submits an RFI contrary to the above, Design Builder shall pay the cost of any review, which cost shall be deducted from the Contract Sum.

L. Design Builder shall submit request for information or clarification immediately upon discovery. Design Builder shall submit RFIs within a time frame so as not to delay the Contract Schedule while allowing the full response time described below.

1.8 RESPONSE TIME

A. University's Representative, whose decision will be final and conclusive, shall resolve such questions and issue instructions to Design Builder within a reasonable time frame. In most cases, RFIs will receive a response within 14 days. In some cases, this time may need to be lengthened for complex issues, or shortened for emergencies, as mutually agreed in writing.

B. Should Design Builder proceed with the Work affected before receipt of a response from University's Representative, within the response time described above, any portion of the Work which is not done in accordance with University's Representative's interpretations, clarifications, instructions, or decisions is subject to removal or replacement and Design Builder shall be responsible for all resultant losses.

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

1.9 PARTNERING

A. General:

1. Definition. “Partnering” is the process by which the parties to the Contract meet and agree to the manner in which business is to be conducted beyond the requirements of the Contract.
2. Legal Status. The Partnering process shall have no legal status and Change Orders shall be submitted for any change throughout the execution of the Work. The Partnering process shall in no way modify or void the Contract, nor shall it be legally binding on either party.

B. Process: Following the Notice to Proceed, the University and the Design Builder shall meet to agree upon the schedule and process for Partnering for this project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3100

SECTION 01 3150 – COORDINATION AND DETAILING ACTIVITY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative provisions for the Coordination and Detailing Activity (CDA). The CDA effort will be required on the following:

1. Mechanical room floor plans.
2. Electrical room floor plans.
3. Telephone room floor plans.
4. Areas above concealed ceilings.
5. Underground utilities.
6. Exterior elevations of buildings.
7. Other spaces for equipment provided under this contract.

B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for coordination of construction issues.
2. Division 01 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section "Closeout Procedures" for coordinating Contract closeout.

1.2 DEFINITIONS

A. CDA: CDA is an on-site coordination program to confirm aspects of the Project's design and installation in an orderly and systematic way prior to fabrication and installation. The basis of the CDA is to assure that all utilities, architectural and structural building systems are inter-coordinated and agreed upon by University, Design Builder and subcontractors.

1.3 PERFORMANCE REQUIREMENTS

A. The provisions of this Section shall not lessen Design Builder's responsibility for providing adequate coordination for all Work including Work not indicated above.

B. Contract and/or Construction Drawings may only be diagrammatic. They are not intended to necessarily represent actual fit, tolerances, clearances, routing, or offsets required to achieve final coordination of systems or building components or to otherwise avoid conflicts between such components or systems. Design Builder shall review these documents to determine the degree of difficulty required on its part to achieve proper coordination and has allocated sufficient money and personnel (notwithstanding the minimum personnel

requirements stipulated in the Contract) to accomplish the necessary coordination, fit, and routing of systems or components. University's Representative and its' consultants are not responsible for the quality or content of Design Builder's Work.

C. The University's Representative, Design Builder's Project staff, subcontractors, and Design Professionals shall participate in this program. At the completion of the CDA, Design Builder and subcontractors are required to sign off on their acceptance. Signature shall indicate that the Work represented on the CDA drawings is constructable and has been reviewed by Design Builder, Design Builder's Design Professionals, and subcontractors and all are in concurrence with information contained on the CDA Drawings.

D. Change Order Requests during CDA: Change Order requests regarding issues being detailed and coordinated under the provisions of this Section will not be accepted by University's Representative.

1.4 SUBMITTALS

A. CDA Drawings: Prepare CDA Drawings using 3D CAD program to provide the University with maximum utilization of space, for efficient installation of different components, and for coordination of installation for products and materials. The CDA drawings shall be the shop drawing for that trade. Additional shop drawings shall not be produced after signing off CDA drawings without a complete reworked of the CDA process.

1. Content: Project-specific information, drawn accurately to scale, minimum ¼"=1'-0". CDA Drawings shall not be based on reproductions of the Contract Documents or standard printed data. Reproductions and coordination with the Design Builder's Design Professional Construction Drawings may be used in preparation of the CDA drawings. Drawings shall include plans, sections, elevations or profiles in order to determine the location of equipment, products and materials in plan and height above a common reference point. Include as a minimum the following information:

   a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
   b. Indicate required installation sequences, where applicable.
   c. Indicate dimensions shown on the Contract or Construction Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and the University's minimum clearance requirements. Provide alternate sketches to University's Representative for resolution of such conflicts.
   d. CDA drawings shall contain a title block in the lower right hand corner of the sheet indicating specific location and extent of Work covered and Design Builder's company name.
   e. Dimension the location of all utilities and architectural components, vertically and horizontally, to within 1/4 inch.

f. Illustrate the correct size of equipment, materials, components, ducts, and pipes, switches, disconnects, etc. Indicate the University's minimum clearance requirements, service access locations and maintenance access as well as equipment door swings. Indicate the maintenance walkway and aisles clearance requirements.

2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit four opaque copies of each signed CDA drawing submittal. University's Representative shall return one copy with comments.
4. Submit copies of equipment cut sheets with readable dimensions.

1.5 MEETINGS

A. Orientation Meeting:

1. Prior to the start of the CDA, meet with University's Representative to discuss the CDA effort. The purpose of this meeting is to develop a mutual understanding of the administration of the CDA and the scope of the required submittals and Drawings. All members of Design Builder's Project staff shall attend the Orientation Meeting.
2. The purpose of the CDA is to expeditiously produce fully coordinated shop drawings showing a composite of systems, subsystems, along with architectural and structural elements of the Work prior to any fabrication.

B. CDA Meetings:

1. During the CDA meetings with University's Representative, the Design Builder and its subcontractors shall discuss and coordinate the locations of utilities and building elements, problems of fit, trade interfaces, and constructability. As a minimum, CDA meetings will be biweekly prior to the CDA finish milestone.
2. At the 100 percent completion meeting, all Subcontractors must sign the CDA drawings indicating their full approval and that each Subcontractor has fully coordinated its Work with the Work of other subcontractors.
3. University's Representative will review and evaluate the routings and placements of the coordinated utilities for compliance with the original design intent only.
4. University's Representative will review and confirm the University's required minimum clearances and maintenance walkways are being provided.
5. Design Builder may be required to attend additional coordination meetings as required at no additional expense to University.
6. Design Builder shall provide one set of prints of the most current CDA drawings at each CDA meetings for the University's Representative.
7. Design Builder shall bring the most current original CDA drawings to each CDA meetings.

8. Subcontractors shall bring equipment cut sheets with dimensions and maintenance clearance requirements for each piece of equipment.

C. The meetings will be facilitated by the Design Builder.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. CDA Sequence: Design Builder shall be responsible for developing a CDA flowchart for each type of program, to be approved by the University (similar to the example at the end of this Section) for a schematic of the entire CDA process as listed below.
   1. Compare Construction Drawings with Field Conditions: Review the Construction Drawings and compare the Construction Drawings with the actual conditions in the field if possible.
   2. Prepare Background Drawings: Prepare a 3D CAD background drawing that will become the common background for the detailing of the Work. The background shall accurately reflect wall lines and other elements of the Project including beams, columns, and any existing utilities. In addition to the wall layout of the Work, the background drawing shall include the anticipated locations of light fixtures, diffusers, grilles and access panels. Finish ceiling elevations and above ceiling structural mounts for equipment shall be accurately dimensioned and noted on the Drawings.
   3. Approve Background Drawings: Upon completion, the background drawing will be reviewed by Design Builder and the University's Representative for approval. Design Builder and subcontractors shall coordinate and revise the background drawings to serve as the common background drawings for coordination.
   4. Detail Duct and Gravity Flow Lines: Detail the mechanical duct work (being the largest above-ceiling utility) and gravity flow plumbing lines as the first elements to be depicted and coordinated on the approved background drawings. All Work shall be in a 3D program using a CAD based program.
   5. Identify Conflicts with Proposed Building Systems: Using 3D CAD program to identify any conflicts associated with the proposed routing of the mechanical ductwork and the gravity flow plumbing lines, with other utilities, structural members, or other items within the space.
   6. Resolve Conflicts and Re-detail as Required: Prepare a conflict list identifying each conflict and prepare a plan view and cross sectional drawings that accurately represent the nature and location of the conflicts in plan and elevation. Design Builder and subcontractors shall work with University's Representative to identify alternate acceptable routes to resolve conflicts. The Design Builder shall re-detail CDA drawings to reflect acceptable routing.

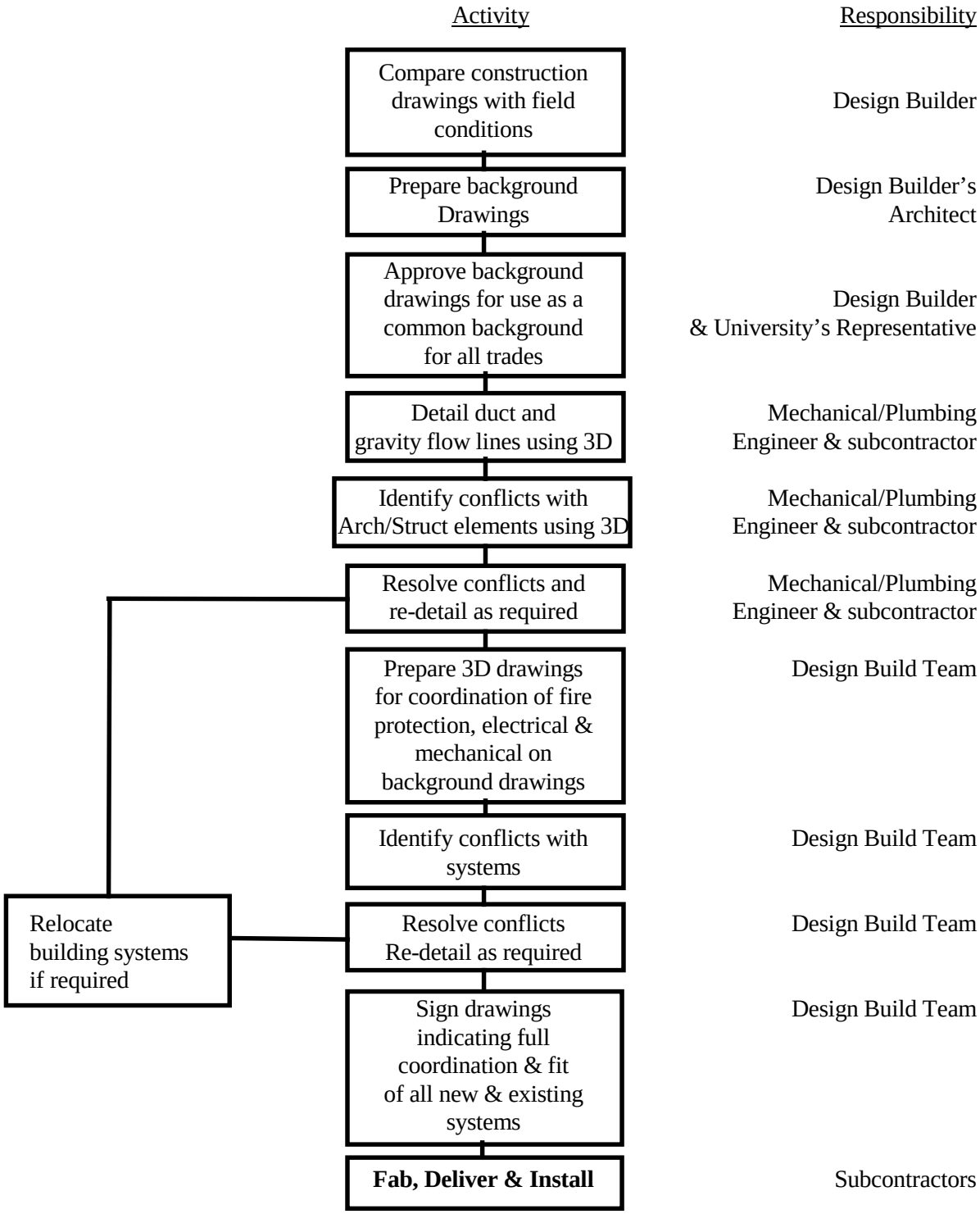
7. Use a separate 3D CAD drawing for Coordination of Electrical and Mechanical Systems on Background Drawings: Upon the completion of the HVAC and gravity flow CDA effort, the building systems provided by the electrical, plumbing, and fire sprinkler subcontractors shall be integrated with the HVAC and gravity flow lines by each respective subcontractor. Design Builder and subcontractors shall prepare an overlay CDA drawing for each system; electrical, plumbing, HVAC piping, fire sprinklers, etc. The approved background with mechanical ductwork and gravity flow plumbing system will serve as the background for these systems.
8. Identify Conflicts with Proposed Systems: Compare and identify conflicts between their proposed systems and all other systems proposed. Revise the CDA drawing with the intent of eliminating the interference's and conflicts. In addition, review in the field any conflicts associated with any building system that affects the routing of subcontractor's systems. Work closely with University's Representative, to integrate and coordinate systems within the design intent.
9. Resolve Conflicts and Re-detail as Required: Upon the completion of this CDA effort, develop a conflict list that shall identify all systems that are in conflict with another building system. Prepare plan view and cross sectional drawings as required to accurately identify the conflict and its exact location. Revise CDA drawings as required to avoid building systems that can not be relocated.
10. Sign Drawings indicting full Coordination and Fit of all Building Systems: The end product of this effort shall be a fully coordinated set of drawings, consistent with the design intent and Applicable Code Requirements for the Work. Upon the completion of the CDA drawings, Design Builder and subcontractors shall indicate that they have coordinated their Work by signing the CDA drawing. Upon the execution by Design Builder and subcontractors of the CDA drawings, fabrication can proceed.

B. Conflicts shall be resolved through the CDA process rather than at the installation stage. Conflicts occurring at the installation stage will not be the basis for additional costs or time extensions.

C. Coordination services will include review of construction drawings for their completeness, constructability, and code compliance. Failure to perform this satisfactorily will not be the basis for additional compensation.

COORDINATION AND DETAILING ACTIVITY FLOWCHART

For above ceiling phase of Work, the procedure shall be as follows:



END OF SECTION 01 3150

SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of the Contract Time during performance of the Work, including the following:

1. Preliminary Contract Schedule.
2. Design Builder's Contract Schedule.
3. Submittals Schedule.
4. Daily construction reports.
5. Material location reports.
6. Field condition reports.
7. Special reports.
8. Schedule Updates
9. Schedule Revisions
10. Recovery Plan
11. Look Ahead Schedule

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for submitting the Cost Breakdown.
2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
4. Division 01 Section "Photographic Documentation" for submitting construction photographs.
5. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the project. Activities included in a Contract schedule consume time and resources.

1. Critical activities are activities on the critical path. They shall start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the Cost Breakdown to the associated activities. The sum of costs for all activities shall equal the total Contract Sum, unless otherwise approved by University's Representative.

C. CPM: Critical path method, which is a method of planning and scheduling a project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration.

E. Days: As stated in General Conditions, calendar days.

F. Event: The starting or ending point of an activity.

G. Float: The measure of leeway in starting and completing an activity.

1. Float time: refer to General Conditions, Article 3, and paragraph 3.17.2.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

H. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

I. Major Area: A story of construction, a separate building, or a similar significant construction element.

J. Milestone: A key or critical point in time for reference or measurement.

K. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

L. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

M. Activity ID Structure: The Design Builder should use smart activity ID using alphanumeric numbers to identify the activity by CSI section, area/level or responsibility. The first digit of the activity ID should start with the project ID.

N. Calendar:There should be minimum of two calendars defined in the contract schedule. All of the activities except for the project milestones should be assigned with calendar – 1, unless specified by the University. Additional calendars may be added later if required by the Design Builder or the University. These are;

1. Calendar – 1: Working day schedule that includes all of the University's holidays and no work periods on weekends.

2. Calendar – 2: Seven-day calendar that includes no holidays and weekends.

1.3 SUBMITTALS

A. Qualification Data: For scheduling consultant.

B. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Submittal Number and Title
5. Name of subDesign Builder.
6. Description of the Work covered.
7. Scheduled date for University's final release or approval.
8. Total cost of invoice to be submitted for payment on delivery of each submittal item.
9. Refer Appendix-B for details of the format and data for Submittal Schedule.
10. Use latest version of Microsoft Excel software to develop the Submittal Schedule.

C. Preliminary Contract Schedule: Submit three copies of all required reports and plots.

1. Approval of cost-loaded preliminary Contract schedule will not constitute approval of Cost Breakdown for cost-loaded activities.
2. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

D. Preliminary Network Diagram: Submit three E-sized plots, large enough to show entire network for entire Contract period. Show logic ties for activities.

E. Design Builder's Contract Schedule: Submit three copies of all required reports and plots.

1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

F. CPM Reports: Concurrent with CPM schedule, submit three copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Total Float Report: List of all activities sorted in ascending order of total float, and then early start/early finish date.
2. Earnings Report: Compilation of Design Builder's total earnings from Notice to Proceed until the most recent Application for Payment.
3. The Design Builder shall submit four (4) sets of 'E'-size plots every month showing all the ongoing and remaining activities.
4. The Design Builder shall submit any other type of report as deemed necessary by the University.
5. Plot of critical path and all activities with less than 10 days of total float in 81/2 x 11 format.
6. A filtered report of all activities that has UCR responsibility.

G. Processing Time: Allow enough time for review, including time for resubmittals, as follows. Time for review shall commence on University's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. At a date specified in the Contract Documents, the Preliminary Contract Schedule shall be submitted in response to the University's Request for Proposals as a Technical Submittal.
2. During the Technical Submittal evaluation period the University will review the Preliminary Contract Schedule.
3. Within 14 days after the issuance of the Notice to Proceed, the Design Builder shall incorporate the University's comments and resubmit the fully cost- and resource-loaded Preliminary Contract Schedule.
4. Within 7 days after receipt of the revised Preliminary Contract Schedule, the University's Representative will reject or accept the Preliminary Contract Schedule. The Preliminary Contract Schedule will then be used to monitor the Work until the University's approval of the Contract Schedule. In case of rejection, Design Builder shall revise and resubmit the Preliminary Contract Schedule until accepted.
5. The Design Builder will use the Preliminary Contract Schedule as the basis for preparing the Contract Schedule. The Design Builder will submit the Contract Schedule to the University's Representative within 40 days of the date that the Preliminary Contract Schedule is approved. University's Representative will determine acceptability of the Contract Schedule within 14 days after its receipt.
6. In case of rejection, the Design Builder shall revise and resubmit the Contract Schedule within 7 days.
7. University's Representative will re-review and determine acceptability of the revised Contract Schedule within 7 days after its receipt.
8. Once approved by the University, the Contract Schedule will be used to monitor the Work.

H. Daily Construction Reports: Submit two copies at weekly intervals.

I. Material Location Reports: Submit two copies at weekly intervals.

J. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

K. Special Reports: Submit two copies at time of unusual event.

1.4 QUALITY ASSURANCE

A. Scheduling Consultant or Team Member Qualifications: The Design Builder's team shall include an experienced specialist in CPM scheduling and reporting acceptable to the University, with the capability of producing CPM reports and diagrams within 48 hours of University Representative's request. Submit information to demonstrate the capabilities and experience of the selected consultant or team member including:

1. Background information on the selected firm or individual team member.
2. Descriptions of completed and current projects that are similar in scope, size, and complexity.
3. References listing project names and addresses, and contact information for clients and owners.
4. Resumes of the consulting firm's principals and the professionals who will be assigned to the project or resume of team member.

B. Other information, as requested. Prescheduling Conference: Conduct conference at Project site within two weeks of NTP to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Contract Schedule and Design Builder's Contract Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, such as phasing, work stages, area separations, interim milestones and partial University occupancy.
4. Review delivery dates for University-furnished products.
5. Review schedule for work of University's separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion and startup procedures.
9. Review and finalize list of Contract activities to be included in schedule.
10. Review submittal requirements and procedures.
11. Review procedures for updating schedule.

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of Contract activities and with scheduling and reporting of separate Design Builders.

B. Coordinate Design Builder's Contract Schedule with the Cost Breakdown, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Develop a Submittals Schedule arranged in chronological order by the dates shown in the Contract Schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Cost Breakdown, and Design Builder 's Contract Schedule. Refer Appendix-B for details of the format and data for Submittal Schedule.
2. Use latest version of Microsoft Excel software to develop the Submittal Schedule.
3. Initial Submittal: Submit concurrently with preliminary contract schedule. Include submittals required during the first 90 days of construction. List those required to maintain orderly progress of the Work and those required early due to long lead time for manufacture or fabrication.

2.2 DESIGN BUILDER'S CONTRACT SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. The minimum number of activities and their description shall correspond to the Cost Breakdown. Comply with the following:

1. Activity Duration: Define activities so no construction activity is longer than 14 days, unless specifically allowed by University’s Representative.
2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

3. Submittal Review Time: Include review and resubmittal times indicated in Section 01 3300, Submittal Procedures, in schedule. Coordinate submittal review times in Design Builder's Contract Schedule with Submittals Schedule. Phase the submittal process to ensure that items are submitted in order of their importance to the construction process. Implement a system that staggers submittals by “start no earlier than” date in a number of waves.
4. Startup and Testing Time: Include sufficient/minimum of 30-day time to comply with the requirements of the relevant sections of this specification, Execution Requirements, General Commissioning Requirements; and any regulatory requirements; and assure completion of the Work within the Contract Time.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for University's administrative procedures necessary for certification of Substantial Completion.

C. Other Requirements: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract. Include milestones with a finish no later than constraints, for all of the scope of work done by others that is anticipated to impact under your contract.
3. Work by University: Include a separate activity for each portion of the Work performed by University. Coordinate with the University’s Representative and separate Design Builders and others as required to assure completion of the Work within the Contract Time.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 01 1000- Summary. Delivery dates indicated stipulate the earliest possible delivery date.
5. University-Furnished Products: Include a separate activity for each product.

   Design Builder shall include the latest date that University-furnished products are required to allow completion of the Work on schedule.
6. Work Restrictions: Show the effect of the following items on the schedule:

   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
   c. Uninterruptible services.
   d. Agency Reviews.
   e. Beneficial occupancy before Substantial Completion.
   f. Use of premises restrictions.
   g. Provisions for future construction.
   h. Seasonal variations.
   i. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

    a. Design Package(s)
    b. CDA Drawing(s)
    c. Submittals.
    d. Agency Reviews.
    e. Demolition.
    f. Purchases.
    g. Mockups.
    h. Fabrication.
    i. Sample testing.
    j. Deliveries.
    k. Installation/Construction
    l. Tests and inspections.
    m. Adjusting.
    n. Curing.
    o. Commissoning
    p. Startup and placement into final use and operation.
    q. Punch List.
    r. Closeout stages 1 thru 5 (refer section 01 7700)
    s. Training
    t. Occupancy.

8. Area/ Level Separations: Identify each major area of construction for each major portion of the Work. Indicate how each construction activity within a major area shall be sequenced or integrated with other construction activities to assure completion of items including, but not limited to, the following:

    a. Demolition.
    b. Structural completion
    c. Permanent space enclosure.
    d. Interior Build-Out
    e. Plumbing installation.
    f. Fire protection installation.
    g. HVAC installation.
    h. Electrical installation
    i. Hardscape, Landscape.
    j. Substantial Completion.

D. Milestones: Show milestones in the schedule including, but not limited to, substantial completion, completion of each stage of the work and for work done by others.

E. Cost Loading: Refer to Section 01 2900, Payment Procedures, for cost reporting and payment procedures.

1. Each activity cost shall reflect an accurate value subject to approval by University's Representative.
2. Total cost assigned to activities shall equal the total Contract Sum.

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change, if any, on the overall project schedule and Contract Time

G. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

1. Primavera Project Planner®, latest version, for Microsoft® Windows operating system.

2.3 PRELIMINARY CONTRACT SCHEDULE

A. Preparation: Indicate each significant Contract activity separately. Outline Project activities in detail through the approval of the Construction Drawings and receipt of permits. Activities to be included in the Preliminary Schedule will be as follows:

1. Detailed Submittal, review, and procurement activities including all submittals for the Work.
2. Detailed activities for CD Design thru University approval for individual design packages.
3. Construction activities for the first 90 calendar days (Three months).
4. Summarize activities for the remainder of the Work. The remainder of the Work will include, but shall not be limited to, the following activities in reasonable detail, indicating the probable critical path:
   a. Remaining Foundation and structure activities
   b. Skin and interior finishing activities
   c. MEP rough-in and finish activities.
   d. Interior finish activities
   e. Critical lead times
   f. Commissioning and move-in activities
   g. Final site work activities
5. The Preliminary Contract Schedule shall be a feasible, workable and reasonable schedule for the first 90 calendar days (three months) of Work, and will serve as the basis for development of the accepted Design Builder ’s Contract Schedule.

B. Submittal: The Preliminary Contract Schedule shall be submitted as a Technical Submittal in response to the University’s Request for Proposals.

C. Review and Approval: Upon Notice to Proceed, the University shall provide comments and suggested revisions to the selected Design Builder. Within 14 days of the date established in the Notice to Proceed, the Design Builder shall incorporate the University’s comments and submit a revised Preliminary Contract Schedule including a weekly workforce projection and monthly cash-flow analysis. The University’s Representative will accept or reject the

Preliminary Contract Schedule within 7 days after receipt of the revised Preliminary Contract Schedule. In case of rejection, Design Builder shall revise and resubmit the Preliminary Contract Schedule until accepted.

2.4 DESIGN BUILDER'S CONTRACT SCHEDULE (CPM SCHEDULE)

A. The Design Builder will use the Preliminary Contract Schedule as the basis for preparing the Contract Schedule. The Design Builder will submit the Contract Schedule to the University's Representative within 40 days of the date that the Preliminary Contract Schedule is approved. Activities shown at the summary level in the Preliminary Contract Schedule shall be detailed in the Contract Schedule. Include weekly workforce projections and monthly cash flow analysis for the duration of the Work based on indicated activities.

B. Submit a detailed submittal schedule for the entire job with the Contract Schedule submittal.

C. CPM Schedule: Prepare Design Builder 's Contract Schedule using a computerized, cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.

1. Failure to include any work item required for performance of this Contract on the CPM Schedule shall not excuse Design Builder from completing all work within applicable completion dates, regardless of University's approval of the schedule.
2. Conduct educational workshops to train and inform key Project personnel, including subDesign Builders' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates. Refer Appendix-A for details of schedule update and pay application procedure.
4. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.
5. Inclement Weather: The Supplementary Conditions indicate the number of days the Design Builder should build into the Contract Schedule for inclement weather. Within the Contract Time, include the stipulated days for "Excusable Delay" due to inclement weather conditions.
    a. Include the allowed number of inclement weather days directly before the Notice of Substantial Completion milestone in each Contract Schedule. As the number of approved inclement weather days increases, the duration of this activity will decrease the corresponding number of days.
    b. The inclement weather activity shall be on the critical path, and there shall not be any parallel activity.
    c. Excusable delays shall be first deducted from the allowance of excusable delays shown on the Contract Schedule. When the total number of days for excusable delays due to inclement weather

exceeds the number of days stipulated in the Supplementary Conditions, an extension of the Contract Time may be made by Change Order in accordance with the provisions of the General and Supplementary Conditions and Section 01 2600, Contract Modification Procedures. Extension of the Contract Time due to inclement weather will be granted only for excusable delay in excess of the number of days indicated in the Supplementary Conditions under "modification of article 8, contract time."

d. If the Design Builder fails to submit claim and documentation within the stipulated time, the inclement weather shall be construed to cause no delay in the construction.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Show dependencies and logic between activities so that the effect of progress (or lack of progress) on related activities and the overall schedule can be monitored. The list of activities shall include, but not be limited to, the following:

a. Preparation and review of Design submittals and other critical design completion dates.
b. Preparation of CDA drawings.
c. Submittal/acceptance by the State Fire Marshal.
d. Preparation, review and processing of Construction submittals.
e. Significant construction milestones (e.g., completion of demo, groundbreaking, steel top-out etc.).
f. Mobilization and demobilization.
g. Date of request of designated working spaces, storage areas, access, and other facilities to be furnished by the University.
h. Date for decision from University's Representative on designated items or orders.
i. Underground utility site work completion.
j. Foundation completion.
k. Frame completion.
l. Shell completion.
m. Interior Build-Out
n. Equipment requirements

1) The latest date that installation details shall be provided to the Design Builder to avoid schedule delays.
2) The latest delivery dates that will allow the project to be completed according to schedule.

o. Utility interruptions, relocation, and connections
p. Connecting to or penetrating existing structures
q. Punch list preparation/preparation

r. Work by University/ and or by other Design Builders that may affect or be affected by Design Builder 's activities.
s. Testing and commissioning.
t. All regulatory agency approvals (e.g., Fire Marshal, others)
u. Building move-in

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

E. Monthly Schedule Update: Prepare and submit an updated Contract Schedule to the University's Representative once each month. The updated Contract Schedule shall show the following:

1. Design Builder's estimated percentage complete for each activity in progress (Pencil Copy).
2. Actual start/finish dates for all activities shown on initial Contract Schedule with all subsequent approved additions.
3. List of materials and/or equipment delivered for which Design Builder is requesting payment and original invoice verifying cost.
4. Once the percentage completion of each activity in progress is assigned with an accurate actual start and/or finish date, the design/builder should meet with University's Representative to finalize the status of activities (Pencil Copy meeting).
5. Identification of processing errors, if any, on the previous update reports.
6. A narrative report with the updated progress analysis, which shall include, but not be limited to, a description of problem areas, current and anticipated delaying factors and their impacts, an explanation of corrective action taken, and any proposed revisions for a recovery plan (see below).
7. The updated Contract Schedule shall accurately represent the as-built condition of all completed Work and the percentage remaining of all in-progress Work activities as of the date of the updated Contract Schedule.
8. The updated Contracted Schedule shall incorporate the only changes mutually agreed upon by Design Builder and University during preceding periodic reviews. All changes resulting from Change Orders, Field Orders and all changes including but not limited to the delays, inclement weather, work sequence changes, out of sequence etc, shall be submitted at the monthly schedule logic revisions meeting (See below).
9. Following the pencil copy meeting, the Design Builder shall submit the updated Contract Schedule (File – A) at least 7 days prior to submitting the Application for Payment, in a form acceptable to the University's Representative.
10. University's Representative will determine the acceptability of the updated Contract Schedule within 7 days after its receipt.

11. No Application for Payment will be processed, nor shall any progress payments become due, until updated Contract Schedules (File – A) are accepted by the University's Representative.
12. The accepted, updated Contract Schedule shall be the Contract Schedule of record for the period it is current and shall be the basis for payment during that period.
13. Submit updated submittal schedule, along with the monthly schedule update
14. A CD ROM containing the complete Primavera Project Planner backed up data for the Contract Schedule update (File – A) and three hard copies of computer-generated reports will be furnished to the University's Representative for processing with application for payment.
15. Refer Appendix-A for details of monthly schedule update and pay application process.

F. Schedule Revisions (File – B): At the monthly Contract Schedule Revisions meeting following the University's acceptance of the monthly updated schedule, the Design Builder shall submit any proposed schedule revisions to the University's Representative, including, but not limited to, the following:

1. Revision, if any, to assumed activity durations including revisions due to inclement weather or regulatory agency review delays.
2. Fragnet of all proposed Change Orders issued during the update period showing time impact.
3. Resolution of conflicts between actual Work progress and schedule logic when out-of-sequence activities develop because of actual construction progress. Design Builder shall submit revisions to schedule logic to conform to current job status and directions, without changing original activity identification.
4. A narrative report with the updated progress analysis, which shall include, but shall not be limited to, a description of problem areas, current and anticipated delaying factors and their impacts, and explanations of corrective action taken and any proposed revisions for a Recovery Plan (see below).
5. A CD ROM containing the complete Primavera Project Planner backed up data for the Revised Contract Schedule update (File-B).
6. Within 7 days after their receipt, the University's Representative will review the proposed schedule revisions and provide comments, suggested changes, and revisions that shall be addressed by the Design Builder to the satisfaction of the University's Representative.
7. Upon acceptance by the University's Representative, schedule revisions submitted by the Design Builder shall be incorporated into the Contract Schedule in the next monthly update.

G. Earning Reports: Prepare Earnings Reports along with Applications for Payment as follows:

1. All Activities Report
    a. Show all activities sorted and grouped by various areas/stages and then the Cost Breakdown.

b. For each activity show the Activity ID, description, budgeted cost, percent completed as of the last update, percent completed to-date, cost as of the previous period, cost this period, and cost-to-date.

2. Summary Activities Report

a. Show summary activities summarized by the Cost Breakdown.
b. The summary activities report shall show Activity ID, description, budgeted cost, percent completed as of the last update, percent completed to-date, cost as of the previous period, cost this period, and cost-to-date.

H. Recovery Plan: If any stage of Work is more than 14 days behind schedule, based on an updated Contract Schedule that incorporates any approved time extensions, The Design Builder shall submit a Recovery Plan to the University's Representative within 5 days. The Recovery Plan shall propose revisions to the Contract Schedule for the next 60-day period to show how the Design Builder intends to bring the Work back on schedule. The Recovery Plan shall also include a written description of how the measures that the Design Builder intends to take to regain schedule compliance will be accomplished without additional cost to the University. Recovery Plan activities shall be identified according to their relationship to activities on the Contract Schedule.

1. Should the Design Builder fail to submit and execute such Recovery Plan, the University shall have the option to direct Design Builder to employ any or all measures necessary to regain schedule compliance, without additional cost to the University.
2. Upon acceptance by the University's Representative, the Recovery Plan shall be incorporated into the Contract Schedule during the next update.
3. Submit a Recovery Plan for each update that indicates that Work progress is more than 14 days behind schedule.
4. Should the Design Builder dispute the University's Representative determination regarding the status of contract delay, such dispute shall not relieve Design Builder of the responsibility to comply with the requirements of this Section and other related Sections until the dispute is resolved according to the Contract terms.

I. Look Ahead Schedule: On a weekly basis, prepare a detailed 2-week Look-Ahead Schedule that projects Work to be performed during the 2 weeks immediately following the weekly construction progress meeting. The Design Builder shall submit the 2-week look-ahead schedules broken down separately into Design Packages, CDA activities, Submittals and the construction activities. This will enable the University to track the progress of all these units independently.

1. Look Ahead Schedule shall cover a 28-day period, beginning with the week preceding the 3-week detailed look ahead.
2. Use the Contract Schedule as the basis for generating the 3-week detailed schedule.
3. Submit copies of the 3-week detailed schedule as required at the weekly construction progress meeting.

4. Format:

   a. Provide bar chart using same logic as Contract Schedule, with maximum 28-day construction activity duration. Provide activity identification used on the accepted Contract Schedule.
   b. Provide daily resource allocation for each trade.
   c. Provide exact activity location for scheduled Work.

5. Provide information for each significant activity, with special care taken to describe scheduling and coordination with other contracts, Work by the University, utility shutdowns, road closures, etc.
6. Show the status of all outstanding and pending submittals including scheduled and actual submittal review dates and expiration of submittal review periods for preparation, GC and AE of record reviews, UCR reviews etc.

2.5 ADJUSTMENT OF TIMES FOR COMPLETION

A. In addition to provisions of the General Conditions, Articles 7 and 8, the time for completion of the Work will be adjusted in accordance with these procedures.

B. Any request for an adjustment of the Contract Time for completion submitted by Design Builder for changes or alleged delays shall be accompanied by a complete Time Impact Analysis, which shall be submitted for review with the request by Design Builder. Time extensions will not be granted unless substantiated by the Contract Schedule, and then not until the CPM Project float time becomes zero.

C. Each Time Impact Analysis shall provide information justifying the request and stating the extent of the adjustment requested for each specific change or alleged delay. Each Time Impact Analysis shall be in form and content acceptable to University's Representative, and shall include, but not be limited to, the following:

   1. A fragmentary CPM type network (Fragnet) illustrating how Design Builder proposes to incorporate the change or alleged delay into the current updated Project Schedule.
   2. A CD ROM containing the complete Primavera Project Planner backed up data for the impacted Schedule update, which has the impacted added activities (fragnet).
   3. Identification of activities in the current updated Project Schedule which is proposed to be amended due to the change or alleged delay, together with engineering estimates and other appropriate data justifying the proposal.
   4. The Time Impact Analysis shall be determined on the basis of the date or dates when the change or changes were issued, or the date or dates when the alleged delay or delays began. The status of the construction project and Time Impact Analysis shall include event time computations for all affected activities.

5. Time Impact Analyses shall be provided for each time extension request in order to demonstrate the time impact upon the overall Project and the time for completion.

D. If, after review of the Time Impact Analysis, the University's Representative finds that Design Builder is entitled to any time extension, the Contract Time will be adjusted accordingly by Change Order, and the Design Builder shall then revise the Contract Schedule accordingly.

E. The Contract Schedule will be used in the calculation of liquidated damages or Compensable delay for each day of delay after the Contract completion date, as adjusted, until the Work is accepted.

F. When Design Builder is behind schedule by more than 14 calendar days beyond adjusted Contract completion date(s) after incorporating all approved time extensions, a recovery plan shall be submitted (refer to Recover Plan).

G. When the University's Representative initiates changes by proposed change order which have the potential to impact stipulated Contract completion dates for each phase, a network window shall be prepared by Design Builder to reflect the impact of said changes. After network window has been mutually agreed upon, and Design Builder is authorized to proceed with proposed change order, it will be incorporated into Contract Schedule. Time extensions for contracts will be considered only to the extent that there is insufficient remaining float to absorb these changes.

2.6 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries
6. High and low temperatures and general weather conditions.

    a. Rainfall, if any
    b. Total number of inclement weather days to date

7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (refer to special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Services connected and disconnected.

16. Equipment or system tests and startups.
17. Partial Completions and occupancies.
18. Substantial Completions authorized.
19. Results of construction monitoring activities including, at a minimum:

    a. Noise control
    b. Dust control
    c. Infection control if required

B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Include a detailed description of the differing conditions, together with recommendations for changing or proposed changes to the Construction Documents.

2.7 SPECIAL REPORTS

A. General: Submit special reports directly to University within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, and response by Design Builder's personnel, evaluation of results or effects, and similar pertinent information. Advise University in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 DESIGN BUILDER'S CONTRACT SCHEDULE

A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.

1. In-House Option: University may waive the requirement to retain a consultant if Design Builder employ skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications (refer to 1.4.A).
2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

B. Design Builder’s Contract Schedule Updating: At monthly intervals, the Design-Builder should update the contract schedule as follows:

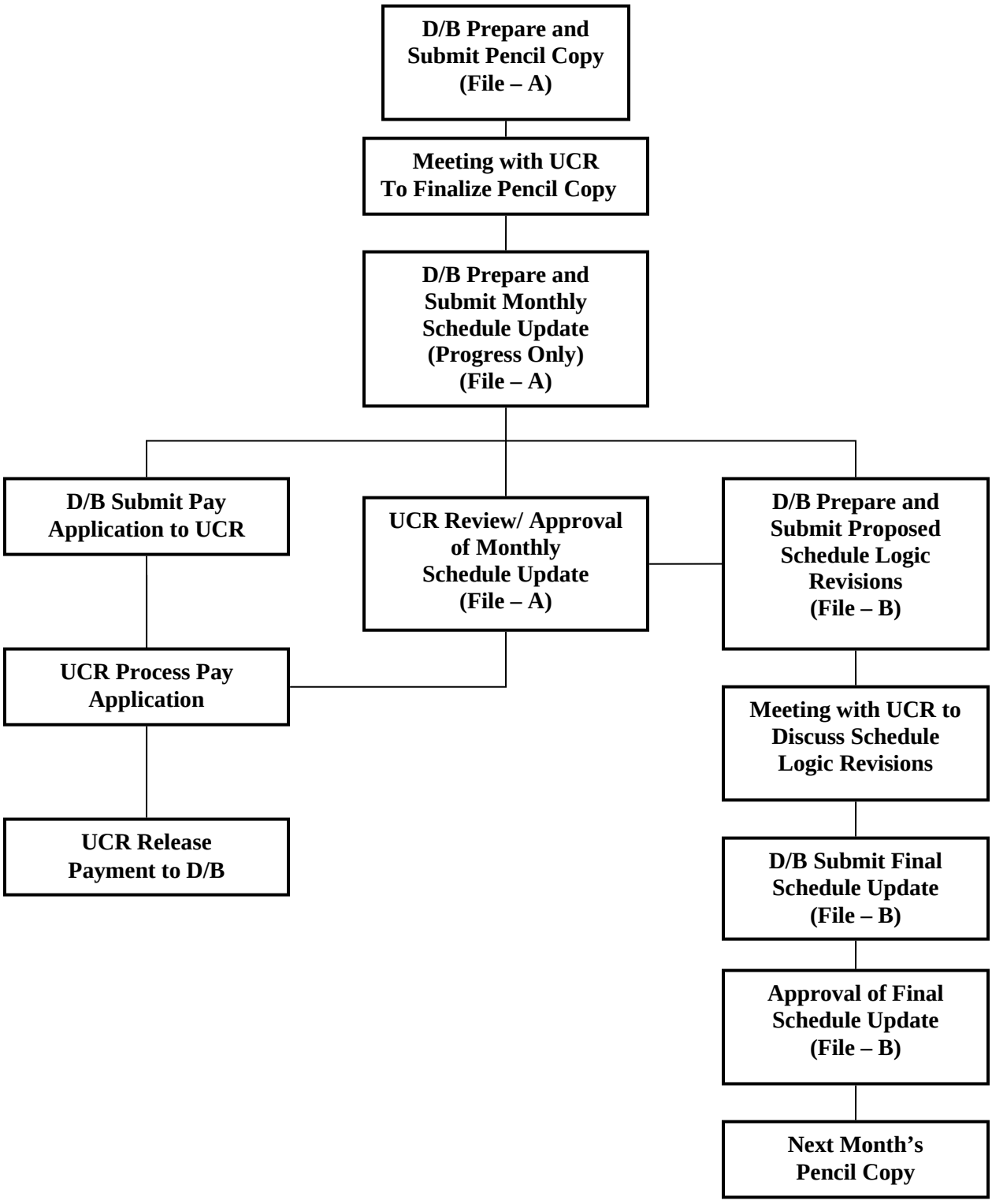
1. Pencil Copy: At the end of each month, the Design-Builder should update the schedule update with the actual progress percentage of activities, started, in progress and/or completed during the proceeding month. After the submittal of the proposed progress pencil copy schedule, Design-Builder should meet with the University's representative, to finalize the proposed progress pencil copy schedule.
2. Monthly Schedule Update (Progress Only) – (File-A): After receiving the agreed upon progress pencil copy from the University, the Design Builder should update the monthly schedule, and submit to University for review along with the required reports as mentioned in the section 2.5 under "Design Builder's Contract Schedule.
3. Pay Application: Based upon the progress made during the preceding month, the Design Builder should prepare and submit the Pay Application to the University.
4. Schedule Logic Revisions (File-B): After submitting the Monthly Schedule Update (Progress only) and Pay Application, the Design Builder should prepare and submit the proposed schedule logic revisions.
5. Schedule Logic Revision Meeting: Within a week of the proposed Schedule logic revisions submittal, the Design Builder should meet with the University's Representative, to discuss, and finalize the proposed schedule logic revisions.
6. Record Contract Schedule Update (File-B): The Design Builder should incorporate all of the proposed schedule logic revisions as discussed in the logic revision meeting with University's Representative, and submit that schedule as final Record Schedule Update for that month. This Schedule update should be used for all issues related to any time impact analysis during that month.
7. Refer Appendix-A for details of the monthly schedule update and pay application process.

C. Distribution: Distribute copies of approved schedule to University's Representative, Design Professionals, separate Design Builders, testing and inspecting agencies, and other parties identified by Design Builder with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

Appendix – A

Reference:
01 3200 – 3.1.B
01 3200 – 2.5.C-3



Appendix – B

SUBM #	CPM PACKAGE	DESIGN/ CONSTRUCTION SUBMITTAL	SPEC. SECTION	SUBMITTAL CATEGORY	DESCRIPTION	RESP.	SUBMITTAL DATES										SUBMITTAL STATUS
							REQ'D DATE FROM SUB	DATE RECEIVED FROM SUB	DATE SUBMITTED TO A/E	DATE RETURNED FROM A/E	DELTA	REQ'D DATE TO UCR	ACTUAL SUBMITTED DATE TO	DELTA	DATE RETURNED FROM UCR	DELTA	

CPM PACKAGE: Multiple submittals could represent one CPM activity in the Contract Schedule

SUBMITTAL CATEGORY: Shop drawing samples, calculations, etc.

SUBMITTAL STATUS:

RFC Reviewed for Conformance
NET No Exceptions Taken
MCN Make Corrections Noted
FRO For Record Only
REJ Rejected
R&R Revise and Resubmit
Reference: 01 3200-1.3 B-9
01 3200-2.1 A-1

END OF SECTION 01 3200

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Periodic construction photographs.
2. Preconstruction video.

B. Related Sections include the following:

1. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
2. Division 01 Section "Closeout Procedures" for submitting photographic negatives or digital media as Project Record Documents at Project closeout.
3. Division 02 Section "Structure Demolition" for photographic documentation before building demolition operations commence.
4. Division 02 Section "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.

1.2 SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with vantage points numerically marked and indicating direction of each.

B. Periodic Construction Photographs: Submit with each pay request photos taken within 3 days prior to submittal.

1. Format: Filename shall be in the following format:

a. ss-vv-ddmmyy.TIFF

1) s = set #
2) v = vantage point #
3) d = day
4) m = month
5) y = year

2. Digital Images: Submit a complete set of digital image electronic files as a Project Record Document on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.

C. Preconstruction Video: Submit one copy on DVD-R within one week of Notice to Proceed for Phase 3.

1. Identification: On each copy, provide an applied label with the following information:

    a. Name of Project and University's Project Number.
    b. Name of Design Builder.
    c. Date video was recorded.
    d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction shall be recorded on video.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.

B. Video Format: Provide in VCD, AVI, MOV, WMV or MPEG format on DVD-R±.

PART 3 - EXECUTION

3.1 PERIODIC CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date: Include date in filename for each image.
2. Date Stamp: If possible, date and time stamp each photograph as it is being taken so stamp is integral to image.
3. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to University's Representative.

C. Periodic Construction Photographs: Take 12 digital photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Use same vantage points to show status of construction and progress since last photographs were taken.

3.2 PRECONSTRUCTION VIDEO

A. Preconstruction Video: Before starting construction, record video of Project site and surrounding properties from different vantage points, as directed by University's Representative.

1. Flag construction limits before recording construction video.
2. Show existing conditions within 100 feet of Project site before starting the Work.
3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.
4. Show protection efforts by Design Builder.

B. Narration: Describe scenes on video by audio narration by microphone while video is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.
2. Begin video with name of Project, Design Builder's name, videographer's name, and Project location.

END OF SECTION 01 3233

SECTION 01 3250 – WEB-BASED CONSTRUCTION MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. The University and Design Builder shall utilize a Web-based building project management system for electronic submittal of all data and documents (unless specified otherwise by the University's Representative) throughout the duration of the Contract. The Design Builder will provide access to project documents on the system to the University and all members of the Design Build team. The joint use of this system is to facilitate electronic exchange of information, key processes, and overall management of the contract. The system shall be the primary means of project information submission and management. When required by the University's Representative, paper documents will also be provided (e.g., the signature of Contract Modifications and submission of Contract Claims). In the event of discrepancy between the electronic version and paper documents, the paper documents will govern.

B. The Design Builder's system shall provide a central online location for up-to-date project information that is accessible anytime to any team member who needs it. By allowing clients and contractors to share information online, the system will speed the exchange of documents, reduces revision cycles, and simplifies asset tracking and approvals. The system helps track all the key issues to identify and mitigate risk.

1.2 USER ACCESS LIMITATIONS

A. The Design Builder will control access to project information by assigning user profiles that define levels of access into the system; determine assigned function-based authorizations (determines what can be seen) and user privileges (determines what they can do). Entry of information exchanged and transferred between the Design Builder and its Designer of Record, subcontractors and suppliers on the system shall be the responsibility of the Design Builder.

B. Joint Ownership of Data

1. Data entered in a collaborative mode (entered with the intent to share as determined by permissions and workflows within the system) by the University and the Design Builder will be jointly owned.

1.3 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

A. Review comments made (or lack thereof) by the University on Design Builder submitted documentation shall not relieve the Design Builder from compliance with requirements of the Contract Documents. The Design Builder is responsible for managing, tracking, and documenting the Work to comply with

the requirements of the Contract Documents. University acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation and does not constitute validation of the Design Builder's submitted information.

1.4 SUBMITTALS

A. University Representative's approval is required for most submittals except submittals for information only. The following shall be submitted in accordance with Section 01 3300, "Submittal Procedures":

1. Preconstruction Submittals

a. List of Design Builder's key personnel.
b. Include descriptions of key personnel roles and responsibilities for this project.

1.5 DESIGN BUILDER RESPONSIBILITY

A. The Design Builder shall be responsible for the validity of the information it places in the system and for the abilities of their personnel. Accepted users shall be knowledgeable in the use of computers, including Internet Explorer, e-mail programs such as Outlook, word processing programs such as Word, spreadsheet programs such as Excel, and Adobe Portable Document Format (PDF) document distribution program. The Design Builder will provide training of Design Build team members including University, Design Builder, design firm, subcontractor, and engineering and consultant personnel in the use of the system as needed. All costs associated with the use of this system, except for initial training, will be evenly distributed in the project overhead and spread across the duration of the contract; a separate cost line item will not be allowed.

1. User Access Administration

a. The University's Representative will provide a list of its key project personnel to the Design Builder. Design Builder will collect similar information from each of firm participating on the Design Build team. The Design Builder will update the list of project participants with system access on a regular basis and add or remove system users as necessary.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SYSTEM UTILIZATION

A. The system shall be utilized in connection with submittal preparation and information management required by Section 01 3200 "Construction Progress

Documentation", Section 01 3300, "Submittal Procedures", Section 01 4000 "Quality Requirements" and other Division 1 sections. Requirements of this section are in addition to requirements of all other sections of the specifications.

1. Design Document Submittals

    a. Provide all design drawings and specifications in file formats specified in other sections of the contract documents.

2. Shop Drawings

    a. Shop drawing and design data documents shall be submitted as PDF attachments. All PDF shop drawing submittal documents shall have the Design Builder's review and submittal stamp (including signatures) as specified in Section 01 3300, "Submittal Procedures" the same as if submitted as hard copy. Examples of shop drawings include, but are not limited to:

        1) Standard manufacturer installation drawings.
        2) Drawings prepared to illustrate portions of the work designed or developed by the Design Builder.
        3) Steel fabrication, piece, and erection drawings.

3. Product Data

    a. Product catalog data and manufacturers instructions shall be submitted as PDF attachments to the submittal workflow process and form, except that color charts and similar color oriented pages shall be submitted as hard copy separate from and in addition to the PDF copy. Submittal forms shall indicate when hard copy color documents are submitted. All PDF product data submittal documents shall have the Design Builder's review and submittal stamp (including signatures) as specified in Section 01 3300, "Submittal Procedures" the same as if submitted as hard copy. Examples of product data include, but are not limited to:

        1) Manufacturer's printed literature.
        2) Preprinted product specification data and installation instructions.

4. Samples

    a. Sample submittals shall be physically submitted as specified in Section 01 3300, "Submittal Procedures". Design Builder shall enter submittal data information into the system with a copy of the transmittal form(s) attached to the submittal. Examples of samples include, but are not limited to:

        1) Product finishes and color selection samples.
        2) Product finishes and color verification samples.
        3) Finish/color boards.
        4) Physical samples of materials.

5. Administrative Submittals

   a. All correspondence and Preconstruction submittals shall be submitted using the system. Examples of administrative submittals include, but are not limited to:

      1) Digging permits and notices for excavation.
      2) List of personnel accessing the system.
      3) List of contact personnel.
      4) Notices for roadway interruption, work outside regular hours, and utility cutovers.
      5) Request for Information (RFI).
      6) Construction Schedules and associated reports and updates.
      7) Each schedule submittal specified in Specification Section 01 3200 shall be submitted as a native backed-up file of the scheduling program being used. The schedule will also be posted as a PDF file in the format specified in Specification Section 01 3200. Due to data transfer rates, do not display relationship lines in the graphical depiction of the schedule.
      8) Submittal Register: Design Builder shall submit a submittal register with input data for dates for submission and upon acceptance of the register, load the register up to the system and update as required by the Contract documents.
      9) Plans for safety, demolition, environmental protection, and similar activities.
      10) Quality Control Plan(s), Testing Plan and Log, Quality Control Reports, Production Reports, Quality Control Specialist Reports, Preparatory Phase Checklist, Initial Phase Checklist, Field Test reports, Summary reports, Rework Items List, etc.
      11) Meeting minutes for Post Award Kick-off Meeting, design review meetings, quality control meetings, progress meetings, pre-installation meetings, etc.
      12) Any general correspondence submitted.

6. Compliance Submittals

   a. Test report, certificate, and manufacture field report submittals shall be submitted as PDF attachments. Examples of compliance submittals include, but are not limited to:

      1) Field test reports.
      2) Quality Control certifications.
      3) Manufacturer’s documentation and certifications for quality of products and materials provided.

7. Record and Closeout Submittals

   a. Operation and maintenance data and closeout submittals shall be submitted as PDF documents during the approval and review stage as specified, with actual set of documents submitted for final. Examples of record submittals include, but are not limited to:

      1) Operation and Maintenance Manuals: Final documents shall be submitted as specified.
      2) Record Drawings: Final documents shall be submitted as specified.
      3) Extra Materials, Spare Stock, etc.: Submittal forms shall indicate when actual materials are submitted.

8. Exceptions

   a. Documents with legal consequences, contract modifications, contract claims, security implications, and those required by other agencies may require an additional submittal as original hard copy with original signatures and seals. Hard copies of these documents shall be submitted as specified or as directed by the University's Representative.

END OF SECTION 01 3250

SECTION 01 3300 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections include the following:

1. See “Scope of Work” for Design Professionals Work and submittal process.
2. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the Cost Breakdown.
3. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
4. Division 01 Section “Coordination and Detailing Activity” for submitting CDA Drawings.
5. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Design Builder's Contract Schedule and the Submittals Schedule.
6. Division 01 Section "Photographic Documentation" for submitting construction photographs and construction videotapes.
7. Division 01 Section “Product Requirements” for selection of products for submittal and product substitutions.
8. Division 01 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
9. Division 01 Section "Closeout Procedures" for submitting warranties.
10. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
11. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
12. Division 01 Section "Demonstration and Training" for submitting material used for training of University's personnel.
13. Divisions 02 through 33 Sections for specific requirements for submittals in those Sections.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires University's responsive action.

B. Informational Submittals: Written information that does not require University's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. University reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on University's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 4 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. University will advise Design Builder when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 2 days for review of each resubmittal.

D. Identification: Completely fill out and attach the University’s “Submittal Transmittal” form on each submittal for identification. Provide a Design Builder review sheet after the transmittal and include the following:

1. Indicate name of firm or entity that prepared each submittal on review sheet.
2. Provide a space approximately 6 by 8 inches on review sheet to record Design Builder's and Design Professional review and approval markings and action taken.
3. Include the University’s Project name and number, date and submittal number.
4. Submittal number shall be as follows,, include revision identifier on resubmittals only:

    a. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 1000.01).

Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 1000.01.A).

b. Number and title of appropriate Specification Section.
c. Drawing number and detail references, as appropriate.
d. Location(s) where product is to be installed, as appropriate.
e. Other necessary identification.

E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless University observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

G. Transmittal: Package each submittal individually by specification section and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. University will return submittals, without review, received from sources other than Design Builder. Substitutions are to be submitted separate from submittals, using the substitution request form as the transmittal.

1. Transmittal Form: Use facsimile of sample form provided with Exhibits.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "NET or MCN" by University's Representative.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.

J. Use for Construction: Use only final submittals with mark indicating "NET or MCN" by University's Representative.

K. LEED Submittals: Comply with requirements specified in Division 01 Section "Sustainable Design Requirements."

1. Submit LEED submittals in the following format:

a. PDF electronic file.

L. Material Safety Data Sheets (MSDSs) for LEED Certification: Submit information necessary to show compliance with LEED certification requirements.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Post electronic submittals as PDF electronic files directly to Web-based building project management system specifically established for Project.

a. University will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Submit electronic submittals via email as PDF electronic files.

a. University will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2.2 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections to demonstrate the way the Design Builder proposes to conform to the information given and the design concept expressed in the Contract Documents.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment per specification section.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable. Clearly indicate exact item submitted and in such a manner that reproduction by photocopying will not loose intent.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Compliance with specified referenced standards.
k. Testing by recognized testing agency.
l. Application of testing agency labels and seals.

m. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.
5. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.
m. Relationship to adjoining construction clearly indicated.
n. Seal and signature of professional engineer if specified.
o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Submit Shop Drawings in the following format:

a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.

b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as University's property, are the property of Design Builder.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

   a. Number of Samples: Submit three and the number of samples the Design Builder wants returned. The University will retain three samples. Provide full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. University will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit three and the number of samples the Design Builder wants returned. The University will retain three samples.

      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
2. Number and name of room or space.
3. Location within room or space.
4. Submit product schedule in the following format:

    a. PDF electronic file.

F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation".

G. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

H. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

I. Cost Breakdown: Comply with requirements specified in Division 01 Section "Payment Procedures."

2.3 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Submit in the following format:

    a. PDF electronic file.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. CDA Drawings: Comply with requirements specified in Division 01 Section “Coordination and Detailing Activity“

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and Universities, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research/Evaluation Reports: Prepare written evidence, from ICBO Evaluation Service, Inc. unless another evaluation organization has been approved by the University's Representative, that product complies with California Building Code. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity

covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

U. Construction Photographs and Videotapes: Comply with requirements specified in Division 1 Section “Photographic Documentation."

V. Material Safety Data Sheets (MSDS’s): Submit information directly to the University’s Representative. Submit MSDS within 30 days of the associated material being delivered to the Project Site or sooner, as required by law. Material and Safety Data Sheets shall be kept on the Project Site throughout the course of the Work.

2.4 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are required after the Construction Documents are stamped “Reviewed for Conformance”, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to University.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit one original and seven copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 DESIGN BUILDER’S REVIEW

A. Design Builder and Design Professional shall review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract and Construction Documents. Note corrections and field dimensions. Mark with approval stamps before submitting to the University’s Representative.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Design Professional and Design Builder's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

C. Coordinate each submittal with requirements of the Work and of the Contract Documents. Any submittal that is not complete or not clearly identified for review will be rejected and returned to the Design Builder for re-submission.

D. Begin no fabrication or Work that requires submittals until the return of University Representative's final reviewed submittals.

3.2 UNIVERSITY'S ACTION

A. General: University will not review submittals that do not bear Design Builder's and Design Professional's approval stamp and will return them without action.

B. Action Submittals: University will review each submittal, make marks to indicate corrections or modifications required, and return it. University will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. "NET" No Exceptions Taken
2. "MCN" Make Corrections Noted
3. "REJ" Rejected
4. "R&R" Revise and Resubmit

C. Informational Submittals: University will review each submittal and will not return it, or will return it if it does not comply with requirements. University will forward each submittal to appropriate party.

D. Failure to properly and clearly mark the submittal to indicate use and options may cause submittal return without review. Submittal will be marked "Revise and Resubmit".

E. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 3300

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Quality assurance and quality control.
2. Quality Control Plan.
3. Inspection
4. Special Inspection and Testing.
5. Mockups.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Design Builder of responsibility for compliance with the Contract Document requirements.

1. Specific quality assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Design Builder's other quality assurance and control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Design Builder to provide quality assurance and control services required by University's Representative, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
2. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Inspector of Record: (I.O.R.) Employed by the University to observe, inspect and conduct tests required or deemed necessary to confirm work is in accordance with the contract documents, California Code of Regulations or other applicable regulatory requirements.

B. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and

deficiencies and substantiate that proposed construction will comply with requirements.

C. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by University's Representative.

D. Mockups: Full-size, physical assemblies that are constructed on-site to illustrate finish and materials. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Special Inspection and Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct special inspection and testing and acceptable to University's Representative, to establish performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Design Builder or another entity engaged by Design Builder as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of California Code of Regulations to work in California.

L. Inspection Request: Written request submitted by the Design Builder to the University's Representative for inspection of completed work.

1.3 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to University's Representative for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to University's Representative for a decision before proceeding.

1.4 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written inspection and testing report that include the following:

1. Date of issue.
2. University's Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For University's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

E. Quality Control Plan: Prepare and submit a plan describing procedures and methods the Design Builder will utilize to control the quality of the Work as specified in “Quality Control Plan” Article.

1.5 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Approved Fabricator Qualifications: Special inspections required by this section are not required where off-site fabrications are done on the premises of a fabricator approved by the University. The firm shall comply with the requirements of the California Building Code Section 1701.7.

F. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in California and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar to those indicated for this Project in material, design, and extent.

G. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

H. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and that is acceptable to University's Representative.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Design Builder's responsibilities include the following:

   a. Provide test specimens representative of proposed products and construction.
   b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
   c. Provide sizes and configurations of test assemblies and mockups to adequately demonstrate capability of products to comply with performance requirements.
   d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
   e. When testing is complete, remove test specimens, assemblies, Type 2 mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality assurance service to Design Builder, with copy to University's Representative. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by University's Representative.

2. Notify University's Representative 14 days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain University Representative's approval of mockups before starting work, fabrication, or construction by submitting drawings indicating mockup extent.
5. Type 1 Mockups: An in-place review of items, areas, materials and systems prior to execution, with approval by University's Representative. It is not the intent to modify materials or installation but to verify quality control expectations of the Design Builder. The mockups shall include all materials, finishes, outlets, fixtures, structural elements and construction details to complete the finished appearance of a room or area. The exact location shall be verified with the Design Builder's sequencing and the University's Representative.
6. Type 2 Mockups: The Type 2 mock-up is an independent structure and is not intended to be a part of the completed building or system within the building. It is the intent to verify material, interface of systems, and to establish the minimum quality that is required. The Type 2 mock-up is not intended to replace product samples required by individual Sections in Divisions 02 through 33.
7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
8. Demolish and remove mockups when directed, unless otherwise indicated.

L. Special Inspector Qualifications: An individual with the demonstrated experience and capability to conduct special testing and inspecting of the particular type of construction or operation requiring special inspection.

1.6 QUALITY CONTROL

A. University Responsibilities: Where quality control services are indicated as University's Responsibility, University will engage a qualified testing agency to perform these services.

1. All work performed by the Design Builder shall be observed and inspected by the University's Inspector of Record for compliance with the Contract Documents, applicable codes and regulatory requirements.
2. All materials, products, equipment, off-site fabrications and assemblies shall be inspected by the University's Representative or Inspector of Record for compliance upon delivery to the project site and prior to installation.
3. University will furnish Design Builder with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
4. Coordinate all activities associated with University's Consultants and other University Departments.
5. Payment for these services will be by the University, except for transportation and daily living expenses outside of Riverside County shall

be reimbursed by the Design Builder in order to comply with the Design Builder's off-site fabrication or construction.

6. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Design Builder, and the Contract Sum will be adjusted by Change Order.

B. Design Builder's Responsibilities: Tests and inspections not explicitly assigned to the University are the Design Builder's responsibility. Perform quality control services required of Design Builder by California Codes to verify and confirm quality of materials, off-site fabrication, pre-fabricated assemblies, pre-assembled equipment and systems whether specified or not.

1. Where services are indicated as Design Builder's responsibility, or where quality standards for materials can not be verified, engage a qualified testing agency to perform these quality control services.

    a. Design Builder shall not employ same entity engaged by University, unless agreed to in writing by University.

2. Notify testing agencies and the University's Representative at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality control services are indicated as Design Builder's responsibility, submit a certified written report, in duplicate, of each quality control service to the University's Representative.
4. Testing and inspecting requested by Design Builder and not required by the Contract Documents are Design Builder's responsibility.
5. Additional tests or special inspections required to establish that such portion of the Work complies with the Contract Documents.
6. Do not cover any piping, wiring, ducts, or other installations until they have been inspected and approved by the University's Representative.
7. In addition, the Design Builder shall be responsible for reimbursement to the University for:

    a. Reimbursement for travel and daily living expenses which are beyond normal inspection costs, when the University's Testing Laboratory or inspector is required to conduct inspections outside of the Riverside County/Orange County/Los Angeles County area.
    b. Cost of retesting construction revised or replaced construction by the Design Builder, where required tests were performed on original construction.
    c. Cost of retesting construction used as temporary facilities by the Design Builder.
    d. Costs of testing construction required by the Design Builder's substitutions.

8. Submit additional copies of each written report, when they so direct by the University's Representative.

C. Manufacturer's Field Services: Where indicated, engage a factory authorized service representative to inspect field assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Design Builder's responsibility, provide quality control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

1. If such additional tests or inspections establish that such portion of the Work fails to comply with the Contract Documents, all costs of such additional tests and inspections, and all other costs resulting from such failure, including compensation for University's Representative and University's consultants, shall be deducted from the Contract Sum by Change Order

E. Testing Agency Responsibilities: Cooperate with University's Representative and Design Builder in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify University's Representative and Design Builder promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service through Design Builder.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Design Builder.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.
2. Do not cover any piping, wiring, ducts, or other installations until they have been inspected and approved by the University's Representative or certified, if certification is required.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality control services required by the Contract Documents. Submit schedule within 60 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to University's Representative, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.7 SPECIAL INSPECTION and TESTING

A. Special Inspection and Tests: University will engage a qualified special inspector to conduct special inspection and tests required by the California Building Codes as the responsibility of the University, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying University's Representative promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to University's Representative with copy to Design Builder.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

1.8 UNIVERSITY'S INSPECTORS

A. The IOR shall report to University's Representative. The IOR shall observe construction in progress and shall have the following responsibilities and limitations on authority.

1. Act under the direction of University's Representative.
2. Observe installation and work in progress as a basis for determining conformance of the work, materials and equipment with the Contract Documents. IOR will report any discrepancies observed to University's

Representative and Design Builder. Only University's Representative has the final authority to make approvals or rejections.

3. Only University's Representative shall interpret the requirements of the Contract Documents. If any item is ambiguous, University's Representative shall make a written interpretation. If Design Builder requests changes or modifications to the Contract Documents, University's Representative shall make a written determination on the requested changes or modifications.
4. Prepare and submit an inspection report to University's Representative for each inspection performed.
5. Review application for payments.
6. Assist University's Representative in reviewing the test and inspection results of testing laboratories.
7. The IOR is not authorized to permit deviations from the requirements of the Contract Documents unless such deviation has been approved by University's Representative in writing.
8. The IOR shall not supervise, coordinate, or direct the Work. The IOR has no responsibility or control over Design-Builder's construction means, methods, techniques, sequences, procedures, or coordination of any portions of the Work, or over any safety programs in connection with the Project

B. The failure of University, University's Representative and its representatives and consultants, or University's IOR to observe or inspect the Work, or to detect deficiencies in the Work, or to inform Design Builder of any deficiencies which may be discovered, shall not relieve Design Builder, its subcontractors regardless of tier, or suppliers from their responsibility for construction means, methods, techniques, sequences and procedures, construction safety, nor from their responsibilities to carry out the work in accordance with the Contract Documents and to detect and correct defective work as defined in the General Conditions.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials and finishes for mockups shall comply with the requirements specified in the various applicable sections of the specifications, and shall match previously submitted and approved samples.

B. Mockups shall incorporate all related construction materials and finishes upon the completed Work.

PART 3 - EXECUTION

3.1 INSPECTION REQUESTS:

A. Submit inspection request to the University's Representative at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.

B. All work performed by the Design Builder or sub-contractors shall be reviewed and approved for compliance with the Contract Documents by the Design Builder prior to submittal of the Inspection Request.

C. Design Builder's responsibility on the day on inspection:

1. Have plans that are stamped "Reviewed for Conformance" by the University available at the construction site.
2. Have product, material or equipment Submittals marked "NET or MCN" to show approval by the University available at the construction site.
3. Submit Inspection Request 48 hours in advance of inspections and material and equipment deliveries.
4. Provide equipment, utilities, lighting and access necessary for University's Representative to conduct inspections.

3.2 QUALITY CONTROL PLAN

A. Prepare a plan describing procedures and methods the Design Builder will utilize to control the quality of the 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 referenced 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, 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.
4. Plans and procedures for receiving, inspecting and accepting material and items. These shall include examination of physical condition and compliance with 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's Representative.
b. Inspection of materials for authenticity to preclude counterfeit parts, for items and attributes of concern identified by University's Representative.
c. Verifying for compliance and traceability, maintaining, and turnover to the University, certificates of conformance and mill certificates required by Contract Documents or codes or standards invoked, for materials received.

5. Provisions for identifying defective Work. Bring to University Representative's attention, for consultation and possible relief, those cases where correction within the specified requirements may introduce a significant schedule penalty, personnel hazard, or compromise the quality of installed items, or is otherwise impractical.
6. Controls to assure that only the "Reviewed for Conformance" construction documents are utilized in the Work.

   a. This includes provisions for removing superceded versions from the work area, except where explicitly and prominently marked "Void - For information only"; such as to retain annotated installation data.

7. Detailed formal procedures or instructions for the performance of special processes, such as welding or concrete placement. These procedures/instructions and personnel performing special processes shall be qualified and certified as required by codes and standards invoked in the Contract Documents.
8. Controls providing for periodic calibration of testing and measurement equipment, including unique equipment identification and calibration tracking.
9. 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 submission to University's Representative.
10. Identify all test and inspections that the Design Builder proposes to be conducted by the University.

3.3 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to University's Representative.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for University Representative's reference during normal working hours.

3.4 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

B. Protect construction exposed by or for quality control service and special inspection and testing activities.

C. Repair and protection are Design Builder's responsibility, regardless of the assignment of responsibility for quality control services or special inspection and testing activities.

D. Maintain and protect the mockups during construction to serve as a standard for approving work incorporated into the Project. Do not alter, remove or destroy mockups until University's Representative authorizes their removal.

3.5 MOCKUP INSTALLATION

A. Mockups shall be constructed in accordance with the approved construction drawings, specific mock-up drawings, and approved shop drawings and product data. If changes are required, the Design Builder shall complete modifications to all documents.

B. Type 1 Mockups shall be revised as required to achieve proper quality control standards that shall be achieved by the Design Builder.

C. Type 2 Mockups shall be located where directed, and shall not be built "in place" as part of the permanent construction. Periodic inspections by the University and Design Builder will be given during the construction process to review the installation.

1. Insofar as possible, mockups shall illustrate contiguous materials and finishes, and be arranged in the same relationship, as they will appear in the finish construction.
2. Each kind of material shall be fabricated, installed and finished by the various subcontractors or others who will be furnishing and performing the Work in the permanent construction.
3. Protect and clean as required to leave the mock-up and adjacent areas in proper condition, upon completion of the Work.
4. Remedial measures, which may be necessary on mockups, shall maintain standards of quality and durability required by the Contract Documents, and shall be subject to approval by the University's Representative.
5. When so directed by the University's Representative, Type 2 mockups shall be dismantled and the materials disposed of by the Design Builder.

6. Type 2 Mockups shall be approved by the University's Representative, before materials are ordered for the Project.

3.6 MOCKUP INSPECTION

A. Notify University's Representative at the start of construction of mockups and provide progress reports to allow the University's Representative to schedule inspections.

B. After approximately 50 percent of each mockup has been built, request University Representative's preliminary review before completion. Incorporate visual and technical changes or variations requested by the University's Representative into mockups during their construction and prior to their completion, insofar as possible.

C. Obtain University Representative's acceptance of visual and technical qualities of mockups before commencing the corresponding Work for the Project.

D. Should the Type 1 or Type 2 mockups fail to meet the University Representative's approval, they shall be taken down or dismantled, and reconstructed to the extent necessary, until acceptance has been obtained.

E. Time the completion and reworking of mockups necessary to obtain acceptance to avoid delay in the construction schedule of the Project. Update the Construction Schedule to reflect required revisions to mockups.

INSPECTION REQUEST

TO: _____ NUMBER: _____

FROM: _____ DATE: _____

DWG REF:_____ DETAIL:_____

SHOP DWG:_____

PROJECT SCHEDULE ACTIVITY ID NO._____

DATE OF INSPECTION:_____ TIME OF INSPECTION: _____

TYPE OF INSPECTION:_____

SPECIFIC LOCATION OF INSPECTION (IE. FLOOR, COL LINE, ETC.):

_____

_____

_____

_____

_____

ALL WORK REQUESTED FOR INSPECTION HAS BEEN REVIEWED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS BY DESIGN BUILDER'S SUPERINTENDENT PRIOR TO NOTIFICATION OF INSPECTION REQUEST.

SIGNED:_____ DATE:_____

UCR USE ONLY

DATE REC'D: _____

DATE OF INSPECTION: _____ TIME OF INSPECTION:_____

INSPECTOR: _____ □ INSPECTION REPORT ATTACHED

COMMENTS:

_____

_____

_____

COPIES: □ UNIVERSITY □ CONSULTANTS
□_____□_____
□ FILE

NONCONFORMING WORK NOTICE

TO: _____ NUMBER: _____

FROM: _____ DATE: _____

SPEC. SEC. REF.:_____ PARA:_____ DWG REF:_____ DETAIL: _____

DESCRIPTION OF DEFECTIVE CONDITION:_____

_____

_____

_____

_____

REPORTED BY: _____

CORRECTIVE ACTION SHOULD BE TAKEN AS SOON AS POSSIBLE AND COORDINATED WITH THE INSPECTOR OF RECORD. IF FURTHER INFORMATION IS NEEDED, ADVISE THE UNIVERSITY'S REPRESENTATIVE.

DESCRIPTION OF CORRECTIVE ACTION TAKEN: _____

_____

_____

_____

_____

_____

ACCEPTED BY:_____ DATE:_____

cc:

END OF SECTION 01 4000

SECTION 01 4100 – REGULATORY REQUIREMENTS

1.1 SUMMARY

A. Section Includes:

1. The standards and codes applicable to the Work.
3. Regulatory notifications

B. Related Requirements:

1. Design Builder's Use of the Project Site: Section 01 1400
2. Reference Standards: Section 01 4200.

1.2 APPLICABLE CODES AND STANDARDS

A. Codes which apply to this Project include, but are not limited to, the following including additions, changes, and interpretations adopted by the enforcing agency in effect as of the date of these Contract Documents.

1. California Code of Regulations (CCR)

a. Title 8, Industrial Relations
b. Title 17, Public Health
c. Title 19, Public Safety
d. Title 20, Public Utilities and Energy
e. Title 21, Public Works
f. Title 22, Environmental Health
g. Title 24: Building Standards Code
   1) Part 2, California Building Code
   2) Part 3, California Electric Code
   3) Part 4, California Mechanical Code
   4) Part 5, California Plumbing Code
   5) Part 6, California Energy Code
   6) Part 7, California Elevator Safety Construction Code
   7) Part 9, California Fire Code
   8) Part 11, California Green Building Standards Code
   9) Part 12, California State Reference Standards

B. In addition to the above codes, work shall comply with the following:

1. California Environmental Quality Act (CEQA).
2. California Health and Safety Code.
3. California Occupational Safety and Health Act Standards (Cal-OSHA).
4. California Department of Transportation (Caltrans): Standard Specifications, latest edition.
5. National Fire Protection Association (NFPA): Standards 13, 24, 72, and 80.
6. Americans with Disabilities Act - Title II (ADA).
7. Federal Occupational Safety and Health Act (OSHA).

8. Federal Environmental Protection Agency – Clean Air Act.
9. Storm Water Pollution Prevention Act.

C. All work shall meet or exceed code requirements.

D. References in the Specifications to "code" or to "building code," not otherwise identified, shall mean the foregoing specified codes, together with the additions, changes, amendments, and interpretations adopted by the enforcing agency and in effect on the date of these Contract Documents.

E. Where other regulatory requirements are referenced in these Specifications, the affected work shall meet or exceed the applicable requirements of such references.

F. Regulatory requirements referred to shall have full force and effect as though printed in these Specifications.

1.3 OTHER APPLICABLE LAWS AND REGULATIONS

A. All applicable federal, state, and local laws and the rules and regulations of governing utility districts and the various other authorities having jurisdiction over the construction and completion of the Project, including the latest rules and regulations of the state fire marshal, OSHA, and the California Labor Code, shall apply to the Contract throughout, and they shall be deemed to be included in the Contract the same as though printed in these Specifications.

1.4 CONFLICTS

A. Nothing stated in this Section of the Specifications or other Sections of the Specifications, the other Contract Documents shall be construed as allowing Work that is not in strict compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinances, codes and standards.

B. Unless otherwise directed by the University's Representative, if a conflict exists between referenced regulatory requirements and the Contract Documents, comply with the one establishing the more stringent requirements.

1.5 TRENCHING AND SHORING

A. All Work shall be in full accordance, but not necessarily limited to the following codes and regulations: Titles 8, 19, 21, 22, & 24, State of California, California Code of Regulations (CCR), California Occupational Safety and Health Administration (OSHA). For Additional requirements refer to Section 01 1400 Design Builder’s Use of the Project Site.

1.6 REGULATORY NOTIFICATIONS

A. Submit all required notifications to Federal, State of California, State in which disposal facility is located if not in California, regional, and local agencies with regulatory responsibilities associated with the Work activities that are included in the Contract. All notifications shall be served in writing, in the form required by the

agency requiring notification, and in a timely manner so as not to negatively impact the Project schedule. Serve notifications at least 10 business days in advance (or earlier if required by agency) of activity requiring notice. The Design Builder shall serve all required notifications in writing to all governmental and quasi- government agencies having notification requirements pertaining to any portion of the Work included in the Project.

B. Design Builder shall file a Notice of Intent for coverage under State General Construction Activity Storm Water Permit National Pollutant Discharge Eliminate System (NPDES). Design Builder shall comply with applicable permit requirements including the project Storm Water Pollution Prevention Plan.

1.7 PERMITS, NOTIFICATIONS, AND CERTIFICATES

A. Underground Service Alert (USA) Notifications: Prior to commencing clearing, excavation and trenching, coordinate with Underground Service Alert of Southern California for field verification and marking of utilities within the limits of Project site. Design Builder shall be responsible for outlining limits of excavation with white chalk paint prior to coordination with USA. Coordination shall require 2 business days' advance notification prior to start of excavation work. Provide USA notification permit number to the University's Representative prior to starting site Work.

B. In no event, shall the Design Builder install materials that contain asbestos, PCB, lead or other known hazardous materials unless prior written approval is obtained from the University.

C. Regulated Carcinogens by Title 8 California Code of Regulations (CCR), Subchapter 7, Group 16 (Control of Hazardous Substances), Article 110 (Regulated Carcinogens).

1. Products containing chemicals regulated as carcinogens by the State of California are not allowed for use on University projects.
2. Case-by-case exceptions may be considered for products containing the following Cal/OSHA recognized carcinogens:

   a. Methylene Chloride, 5202
   b. Cadmium, 1532, 5207
   c. Inorganic Arsenic, 5214
   d. Formaldehyde, 5217
   e. Benzene, 5218

3. Case-by-case exceptions may only be made when suitable alternative products are not available. Such exceptions are subject to written approval by the University's Representative.
4. Exceptions require that the Design Builder shall have an established carcinogen program as required by Cal/OSHA (§5203. Carcinogen Report of Use Requirements) and shall submit to University's Representative, a copy of the Cal/OSHA Confirmation of Report for Cal/OSHA carcinogens.
5. When exceptions are granted, the Design Builder is responsible for providing to the University's Representative a copy of the semi-annual Confirmation of Report received from Cal/OSHA or, in lieu of that, a copy of the Design Builder's semi-

annual report as submitted to Cal/OSHA at periods not to exceed 6 months, or at project closeout, whichever occurs first.

C. Fire Department and Additional Notifications, Manifests, and Requirements: As required by University and coordinated by Design Builder with the University's Representative.

END OF SECTION

SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. "Approved": The approval of The University's Representative or University, as called for by Contract Documents.

B. "Directed": A command or instruction by University's Representative. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

C. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

D. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

E. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

F. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

G. "Provide": Furnish and install, complete and ready for the intended use.

H. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

AA	Aluminum Association, Inc. (The) www.aluminum.org	(703) 358-2960
AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.transportation.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) www.aatcc.org	(919) 549-8141
ABAA	Air Barrier Association of America www.airbarrier.org	(866) 956-5888
ABMA	American Bearing Manufacturers Association www.abma-dc.org	(202) 367-1155
ACI	ACI International (American Concrete Institute) www.aci-int.org	(248) 848-3700
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The)	(205) 257-2530

	www.aeic.org	
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association (Now part of CPA)	
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)	
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts, Inc. www.aosaseed.com	(405) 780-7372
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600

APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industry International) www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (Now WCSC)	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWPA	American Wood-Preservers' Association www.awpa.com	(205) 733-4077
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353

AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BICSI	BICSI www.bicsi.org	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee www.bissc.org	(866) 342-4772
CCC	Carpet Cushion Council www.carpetcushion.org	(610) 527-3880
CDA	Copper Development Association www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(613) 230-9263
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CRRC	Cool Roof Rating Council www.coolroofs.org	(866) 465-2523 (510) 485-7175

CPA	Composite Panel Association www.pbmdf.com	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet & Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Cast Stone Institute www.caststone.org	(717) 272-3744
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association www.eima.com	(800) 294-3462 (770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee www.ejdc.org	(703) 295-5000
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association www.esda.org	(315) 339-6937
FM Approvals	FM Approvals www.fmglobal.com	(781) 762-4300

FM Global	FM Global (Formerly: FMG - FM Global) www.fmglobal.com	(401) 275-3000
FMRC	Factory Mutual Research (Now FMG)	
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. www.floridaroof.com	(407) 671-3772
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council www.fsc.org	49 228 367 66 0
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GRI	(Now GSI)	
GS	Green Seal www.greenseal.org	(202) 872-6400
GSI	Geosynthetic Institute www.geosynthetic-institute.org	(610) 522-8440
HI	Hydraulic Institute www.pumps.org	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (Now CSA International)	

ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IEST	Institute of Environmental Sciences and Technology www.iest.org	(847) 255-1561
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510
ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
ISO	International Organization for Standardization www.iso.ch	41 22 749 01 11
	Available from ANSI www.ansi.org	(202) 293-8020
ISSFA	International Solid Surface Fabricators Association www.issfa.net	(877) 464-7732 (702) 567-8150
ITS	Intertek Testing Service NA www.intertek.com	(972) 238-5591
ITU	International Telecommunication Union www.itu.int/home	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association (Now part of CPA)	

LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association, Inc. www.maplefloor.org	(847) 480-9138
MFMA	Metal Framing Manufacturers Association www.metalframingmfg.org	(312) 644-6610
MH	Material Handling (Now MHIA)	
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc. www.mss-hq.com	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(312) 332-0405
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(800) 797-6623 (281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900

NCPI	National Clay Pipe Institute www.ncpi.org	(262) 248-9094
NCTA	National Cable & Telecommunications Association www.ncta.com	(202) 775-3550
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (303) 697-8441
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association) www.nofma.org	(901) 526-5016
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400

NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736 (540) 751-0930

NTRMA	National Tile Roofing Manufacturers Association (Now TRI)	
NWWDA	National Wood Window and Door Association (Now WDMA)	
OPL	Omega Point Laboratories, Inc. (Now ITS)	
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting & Decorating Contractors of America www.pdca.com	(800) 332-7322 (314) 514-7322
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute http://pgi-tp.ce.uiuc.edu	(217) 333-3929
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America) www.landcarenetwork.org	(800) 395-2522 (703) 736-9666
PTI	Post-Tensioning Institute www.post-tensioning.org	(602) 870-7540
RCSC	Research Council on Structural Connections www.boltcouncil.org	
RFCI	Resilient Floor Covering Institute www.rfci.com	(301) 340-8580
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
SAE	SAE International www.sae.org	(877) 606-7323 (724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(516) 294-5424

SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)	
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIA	Security Industry Association www.siaonline.org	(703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)	
SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association www.smacentral.org	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers www.smpte.org	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPRI	Single Ply Roofing Industry www.spri.org	(781) 647-7026
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333

SWRI	Sealant, Waterproofing, & Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Truss Plate Institute, Inc. www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrasssod.org	(847) 649-5555 (800) 405-8873
TRI	Tile Roofing Institute www.tileroofing.org	(312) 670-4177
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USGBC	U.S. Green Building Council www.usgbc.org	(202) 828-7422
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Now WCSC)	
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 297-2109

WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WIC	Woodwork Institute of California (Now WI)	
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 570-5441
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CCR (CBC)	California Code of Regulations, Title 24, also known as the California Building Standards Code www.bsc.ca.gov	(916) 263-0916
IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICBO	International Conference of Building Officials (See ICC)	
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)	
ICC	International Code Council www.iccsafe.org	(888) 422-7233 (703) 931-4533
ICC-ES	ICC Evaluation Service, Inc. www.icc-es.org	(800) 423-6587 (562) 699-0543
SBCCI	Southern Building Code Congress International, Inc. (See ICC)	

UBC	Uniform Building Code (See ICC)	

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce www.commerce.gov	(202) 482-2000
DOD	Department of Defense http://.dodssp.daps.dla.mil	(215) 697-6257
DOE	Department of Energy www.energy.gov	(202) 586-9220
EPA	Environmental Protection Agency www.epa.gov	(202) 272-0167
FAA	Federal Aviation Administration www.faa.gov	(866) 835-5322
FCC	Federal Communications Commission www.fcc.gov	(888) 225-5322
FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(800) 488-3111
HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-4000
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478

OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999
PBS	Public Building Service (See GSA)	
PHS	Office of Public Health and Science www.osophs.dhhs.gov/ophs	(202) 690-7694
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department www.state.gov	(202) 647-4000
TRB	Transportation Research Board www.nas.edu/trb	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA) Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080
CFR	Code of Federal Regulations Available from Government Printing Office www.gpoaccess.gov/cfr/index.html	(866) 512-1800 (202) 512-1800
UFAS	Uniform Federal Accessibility Standards Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation www.dca.ca.gov/bhfti	(800) 952-5210 (916) 574-2041
CCR	California Code of Regulations www.calregs.com	(916) 323-6815
CPUC	California Public Utilities Commission www.cpuc.ca.gov	(415) 703-2782
SCAQMD	South Coast Air Quality Management District www.aqmd.gov	(800) 288-7664
SWRCB	State Water Resources Control Board www.swrcb.ca.gov	(916) 341-5537

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200

SECTION 01 4550 - ROOFING AND WATERPROOFING INSPECTION SERVICES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for roofing and waterproofing inspection services.

B. Related Sections include the following:

1. Division 01 Section, “Project Management and Coordination” for meeting requirements.
2. Division 07 Section, “Cold Fluid-Applied Waterproofing” for waterproofing requirements.
3. Division 07 for roofing requirements.

1.2 REFERENCE PUBLICATIONS

A. "Quality Control in the Application of Built-Up Roofing" published and available from National Roofing Contractors Association, 8600 Bryn Mawr Avenue, Chicago, IL 60631-3502, (312) 693-0700.

B. NRCA Roofing and Waterproofing Manual published as noted in paragraph A above.

1.3 SUBMITTALS

A. Review the roofing and waterproofing system(s) submittal and keep one set of submittals after final approval by University's Representative.

B. Secure University's Representative prior approval of date and time for preconstruction conference, all substrate inspections and preinstallation conference meetings.

1. Notify the inspection service, the subcontractor(s), system manufacturer(s), authorized representative(s) and other interested parties, and secure their agreement to attend.
2. At least 72 hours prior to the preconstruction meeting notify the University's Representative of the names of persons expected to attend.

C. Records:

1. Maintain a complete and legible file, in chronological order, containing a copy of each report, certificate, and other communication received relative to the Work of this Section.
2. Upon completion of the Work of this Section, deliver a copy of the complete file to the University's Representative.
3. Maintain file of photographs of critical phases of installation as determined with University's Representative at pre-installation meeting.

1.4 ROOFING AND WATERPROOFING INSPECTION SERVICES

A. For the Work of this Section, the inspection agency is subject to approval by University's Representative**.**

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION CONFERENCE

A. A pre-construction conference shall be held during the initial phase of construction between University's Representative, Design Builder, Design Builder's Superintendent and all related subcontractors directly involved with potential failure of the membrane(s) due to inferior workmanship, defects, etc. and who shall be responsible for the construction.

B. Drawings and Specifications shall be reviewed in detail. Resolve differences between the Specifications of the Design Builder’s Architect and the specifications of the material manufacturer. Incorporate these decisions into the job record either as field orders or as change orders.

C. Confirm that Drawings and Specifications contain provisions for the deck slope, drainage, surface condition, and nailers for attachment of the membrane and flashing.

D. Areas used by the roofing and/or waterproofing subcontractor to store materials and equipment shall be clearly established.

E. Establish required clearances for areas adjacent to waterproofing areas so that the handling of materials and application procedures can be performed in a safe manner.

F. Establish requirements for backfilling operations and for the use of scaffolding.

G. Establish installation procedures for mechanical devices that will penetrate the roofing and/or waterproofing membrane to prevent cutting the membrane after it is installed. Membrane penetrations shall be minimized.

H. If any roofed or waterproofed surface will be used as a working platform after the materials have been applied, an agreement must be reached on how and who will protect the membrane during this construction period.

I. The roofing and/or waterproofing manufacturer's representative, in coordination with University's Representative, Design Builder, and the inspection agency will determine whether the substrate surface meets the Contract Document requirements and pre-construction agreements and is ready for the application of waterproofing materials.

J. If the Design Builder is instructed to proceed over what it determines to be an unsatisfactory surface, it shall:

1. State its objections in writing to University's Representative; and
2. Include in its statement a copy of the instructions given; and
3. Inform the other associated parties of its objections.

K. Agreement shall be reached determining who will approve the waterproofing Work and who will be present for required testing.

3.2 PRE-INSTALLATION MEETING

A. Conduct a substrata inspection and a pre-installation meeting within three to ten days prior to scheduled start of installation. Minutes of the meeting will be taken by the Design Builder, who will also distribute same to attending parties.

B. Visually inspect all substrata upon which roofing or waterproofing is scheduled to be applied.

1. Determine general acceptability, and determine areas requiring further preparation.
2. Determine acceptable remedies for unacceptable areas.

C. Discuss proposed schedule for installation of the membranes, and reach agreement as to dates of start and finish of installation.

D. Discuss proposed methods for installation of the membranes, and equipment and personnel to be used.

E. Discuss inspection methods to be used, reports to be issued by the inspector, responsibilities and limits of responsibilities of the inspector, and potential problems arising from use of methods not agreed to in the pre-installation meeting.

F. The manufacturer's representative shall instruct the University's inspector and the inspection agency how to verify the correct installation and the inspector shall be furnished with a copy of the manufacturer(s) literature and installation instructions at the jobsite. Deviations from the instructions shall only be allowed if approved in writing by the manufacturer's representative(s) and the University's Representative.

3.3 INSPECTION DURING ROOFING MEMBRANE INSTALLATION

A. The system manufacturer(s) or the authorized representative(s) shall be present on the Project site during installation continuously or at intervals as determined in the pre-construction conference.

B. Verify that materials delivered to the job site are those approved by the University's Representative for use on this Work.

C. Visually observe installation of membranes including, but not necessarily limited to:

1. Check kettle temperatures, and verify that bitumens are not heated beyond temperatures recommended by the manufacturer of the approved system materials.

2. At least three times daily, check temperatures of bitumens as delivered to the roof deck and verify that temperatures of bitumens are within the range recommended by the manufacturer of the approved membrane system materials.
3. Verify use of installation procedures agreed upon in the pre-installation meeting.
4. Call attention of Design Builder Superintendent and the subcontractor's representative on the job to unacceptable methods and unacceptable results.
5. Report to the Design Builder and to the University's Representative if the subcontractor fails to correct unacceptable methods or unacceptable results.
6. Verify that workers on the roof do not step on plies of felts while bitumen is still hot and for at least the same working day.

D. Make one test cut if directed by University's Representative prior to application of final surfacing.

1. Except as otherwise approved by the University's Representative, make the test cuts 12 inches square and through all layers of the membranes that are in place.
2. By precise weighing of identical 12-inch square pieces of felt, determine the amount of bitumens applied in the one square foot sample (roofing only).
3. Verify that the subcontractor provides proper patching of areas where test cuts were made.
4. Include within the daily report a statement of weights (and corresponding adequacy or inadequacy of membrane(s) at test cuts.

E. Make final visual inspection of the entire installation.

1. Compile a list of items required to be revised or replaced.
2. Deliver a copy of the list to the subcontractor(s), University's Representative, and to others as appropriate.
3. Verify proper revision or replacement of all items on the list.

3.4 INSPECTION DURING WATERPROOFING INSTALLATION

A. Verify that materials delivered to the jobsite are those approved by University's Representative.

B. Attend both pre-construction and pre-installation conferences between Design Builder, applicator, manufacturer, University's Representative and other subcontractors responsible for quality of substrates.

3.5 TESTING AND SAMPLING

A. Flood Testing shall be performed for horizontal membrane applications. The area to be tested shall be flooded until at least 1 inch of standing water covers the entire surface. In no case shall water be allowed to stand above the finished level of the membrane flashing. Drains shall be plugged, and permanent or temporary curbings shall be formed to retain the water for a period of at least 24 hours. Any leaks found during this period shall be repaired and the area re-tested.

B. When it is impractical, as determined by University's Representative, to flood-test an area because the slope of the substrate would cause excessive water build-up in places, the membrane can be tested by allowing water from a hose to run continuously over the area for a period of eight hours. During this period, the entire area must remain completely flooded.

C. If flood testing is impractical as determined by University's Representative that because of job conditions, weather, location, etc. perform a thorough inspection of the horizontal membrane.

All laps, terminations, and flashings must be carefully checked for any evidence of fishmouths, incomplete adhesion or other conditions that may be detrimental to the watertight integrity of the membrane.

3.6 REPORTS

A. Make daily written reports of inspection activities, delivering copies to the subcontractor(s) and others as agreed in the pre-installation meeting.

B. Upon completion of the membrane installation(s), compile a comprehensive report covering activities performed under this Section, and deliver a copy of the report to:

1. University's Representative;
2. Design Builder and subcontractor(s);
3. Others as agreed in the pre-construction and pre-installation meetings.

3.7 LIMITS OF ROOFING AND WATERPROOFING INSPECTOR'S RESPONSIBILITIES

A. During progress of the installation, the inspection agency's inspector is required to:

1. Make visual observations and compile reports described in this Section;
2. Advise the University's Representative and the subcontractor's representative(s) on the job as to unacceptable methods and unacceptable results when so observed by the inspector.

B. In connection with the installation, "unacceptable methods and unacceptable results" mean methods and results other than:

1. Those required and recommended by the manufacturer of the approved system materials.
2. Those required by pertinent regulations of governmental agencies having jurisdiction.
3. Those required by the Specifications.
4. Those agreed upon in the pre-construction and pre-installation meetings.

C. The roofing and waterproofing inspector is not empowered to:

1. Act for, or in lieu of, representatives of authorities having jurisdiction;
2. Give directions to the Design Builder, subcontractor, or workmen on the job;
3. Revise any part of the Contract Documents; or
4. Approve any change in the methods agreed upon in the pre-installation meeting.

D. Failure of the inspector to observe unacceptable methods or unacceptable results during progress of the Work will not absolve the Design Builder from his responsibility to complete the Work in accordance with the specified requirements and the agreed methods.

END OF SECTION 01 4550

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections include the following:

1. Section 01 1000 Summary for limitations on utility interruptions and other work restrictions.
2. Section 01 3300 Submittal Procedures for procedures for submitting copies of implementation and termination schedule and utility reports.
3. Section 01 7300 Execution Requirements for progress cleaning requirements.
4. Divisions 02 through 33 Sections for specific requirements for temporary facilities and control requirements for products, materials and equipment in those Sections.

1.2 DEFINITIONS

A. Permanent Enclosure: As determined by University's Representative, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, University's construction forces, University's Representative, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Parking Permits: Limited parking for workers employed on the Work may be provided within the fenced-in Project site boundary and to the extent that space for that purpose is available without interference with University activities or activities related to performance of the Work. Design Builder (and workers employed on the work) shall be responsible for obtaining parking permits for personal vehicles should they intend to utilize University parking lots on campus.

1. Comply with the parking regulations.

C. Sewer Service: Where available, the University will pay sewer service use charges for sewer usage by all entities for construction operations.

D. Water Service: Pay water (potable and/or reclaimed water) service use charges to the University for water used by all entities for construction operations when connected to the University water system.

E. Electric Power Service: Pay electric power service use charges to the University for electricity used by all entities for construction operations when connected to the University electrical system.

F. Phone Service: Pay phone service and use charges for construction operations and University's Field Office.

G. Natural Gas Service: Pay natural gas service use charges to the University for gas used by all entities for construction operations when connected to the University natural gas system.

1.4 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Field Offices: Submit floor plans, list of equipment including product data, and evidence of regulatory approval.

C. Storm Water Pollution Prevention Plan (SWPPP): Prepare the SWPPP in accordance with the General Permit to discharge storm water associated with construction activity. The SWPPP shall be prepared by an individual knowledgeable about storm water pollution prevention methods and requirements. The SWPPP shall be implemented prior to commencement of construction activities and shall include but not be limited to: the construction site, lay down area, remote contractor parking site (if provided) and the temporary trailer facilities. SWPPP shall include any off project site lay down area if applicable.

D. Traffic Control Plan: Submit traffic control plan for vehicular, pedestrian and bicycle traffic around the project construction site. Show locations of barricades, lights, and signage. Traffic control plans shall be prepared by persons knowledgeable about the fundamental principles of temporary traffic controls and the work activities performed. The design, selection and placement of traffic control devices for the traffic control plan shall be based on engineering judgment and in accordance with Part 6 of the California Manual on Uniform Traffic Control Devices for Streets and Highways.

E. Provide a schedule of any activity that will impact traffic, or any planned lane or street closure, for approval by the University's Representative and giving a minimum of 14 business days notice before closing any street, parking stall or access pathway.

F. Submit four copies of above submittals. University will return one copy.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with California Electric Code.

B. Tests and Inspections: Arrange for University's Representative or the utility company's to test and inspect each temporary utility before use. Obtain required certifications and permits.

1. Notify University's Representative 72 hours prior to connection to a University utility service to obtain permit with University Facilities Management approval.
2. Notify University's Representative after installation of backflow prevention device to obtain certification on installation from the University Facilities Management.

C. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:

1. Cal OSHA Requirements.
2. University's Environmental Health and Safety (EH&S) regulations.
3. South Coast Air Quality Management District (SCAQMD).
4. California State Fire Marshal.
5. Federal and State storm water management regulations for construction activities.

D. Standards: Comply with CFC Article 87, "Fire Safety during Construction, Alteration or Demolition of a Building" and ANSI A10 Series standards for "Safety Requirements for Construction and Demolition".

E. Permits: For projects one acre or more in size, a Notice of Intent (NOI) and Notice of Termination (NOT) shall be prepared under the General Permit for Storm Water Discharges. The NOI and NOT forms must be submitted to State Water Resources Control Board (SWRCB) through coordination with the University's Representative. Yearly permit fees are to be included for the duration of the project, until Notice of Termination is filed through SWRCB.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before University's acceptance, regardless of previously assigned responsibilities.

B. Site Ingress and Egress

1. Take all necessary precaution to ensure the safety of the bicyclists and pedestrians that use the campus roads, pathways or service drives.

2. During inclement weather, clean the roads, drives or pathways affected to prevent slickness of the surface. The surface shall be maintained in a safe and usable condition for motorists, bicyclists and pedestrians.
3. Construction operations are permitted to block only 1/2 of a street, drive or pathway at a time for momentary site access unless specified otherwise or approved. Campus streets shall be operational and usable by the University at all times.

C. Temporary use of parking spaces outside Limits of the Work:

1. Obtain written approval of the University's Representative if any existing parking spaces outside the Limits of the Work must be temporarily blocked or used for access, storage, loading, protection against damage from construction operations (paint overspray, etc.) or any other activity associated with the Work.
2. Request approval at least 3 business days in advance of the requested commencement of the use of the parking spaces. University reserves the right to refuse approval, with no change to the Contract Sum.

D. Protection: Where Work is in progress overhead and materials or objects could potentially fall, construct temporary covered pedestrian walkways over each building entrance or existing walkway. Walkway covers shall extend out 12 feet in length for the first floor and an additional 4 feet for each additional floor of the building. Walkway covers shall extend from face of building. Place and maintain yellow safety construction flagging or ropes with signage to prevent pedestrians from coming within 25 feet of Work in progress overhead and to route pedestrians in and out of building entrances.

E. Safety Precautions: Perform Work in such a manner as to prevent damage to existing facilities to remain or to be salvaged. Hazardous Work shall not be left standing or hanging, but shall be knocked or pulled down to avoid damage or injury to employees or the public.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials suitable for the use intended. If acceptable to the University's Representative, undamaged previously used materials in serviceable condition may be used.

B. Pavement: Comply with Division 32 pavement Sections.

C. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails.

D. Portable Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts;

minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.

E. Lumber and Plywood: Comply with requirements in Division 06 Section "Rough Carpentry or Miscellaneous Carpentry" or as specified below.

1. For job-built fencing, temporary offices, shops and sheds within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
2. For signs and directory boards, provide exterior type, Grade B Plywood conforming to PS-1, of sizes and thickness indicated.

F. Roofing Materials: Provide UL Class "A" standard weight asphalt shingles complying with ASTM D 3018, or UL Class "C" mineral surfaced roll roofing complying with ASTM D 249 on roofs of job-built temporary offices, shops and sheds.

G. Gypsum Board: Minimum 1/2-inch-thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36.

H. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

I. Paint: Comply with requirements in Division 9 painting Sections.

1. For job-built temporary offices, shops, sheds, fences and other exposed lumber and plywood, provide exterior grade acrylic-latex emulsion over exterior primer.
2. For sign panels and applying graphics, provide exterior grade alkyd gloss enamel over exterior primer.
3. For interior walls of temporary offices, provide two coats interior latex flat wall paint.

J. Tarpaulins: Provide waterproof, fire resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent, nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

K. Water Hoses: Provide 3/4 inch heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shutoff nozzles at hose discharge.

L. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

M. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

N. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Where exposed to breakage, provide lamps with guard cages or tempered glass enclosures. Provide exterior fixtures where exposed to moisture.

O. First Aid Supplies: Comply with governing regulations.

P. Metal plating and metal bridging for covering trenches shall be non-skid with waffle-patterns or right angle undulations or shall be coated with a non-skid product. Plating shall be installed with no protruding edges or corners sticking up and with no bouncing or shifting.

2.2 TEMPORARY FACILITIES

A. General: Provide new facilities and equipment suitable for the use intended. If acceptable to the University's Representative, undamaged previously used materials in serviceable condition may be used.

B. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading. Provide steps and landings at all entrance doors.

C. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 12 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- square tack board.
3. University’s IOR office measuring 8’ X 10’ with plan table, desk and two chairs with telephone service.
4. Drinking water and private toilet.
5. Coffee machine and supplies.
6. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
7. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.

D. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as specified. For special areas not listed, provide fire extinguishers as required by locations and classes of fire exposures.

1. Provide hand-carried, portable UL rated, Class "A" fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers.
2. Comply with NFPA 10 and CFC Article 87 for classification, extinguishing agent and size required by location and class of fire exposure.
3. Locate fire extinguishers in field offices, storage sheds, tool houses, other temporary buildings, and throughout the Site. In the area under construction, provide at least one fire extinguisher for each 5,000 sq. ft of building floor area. Locate fire extinguishers so that a person never has to walk more than 100 feet to obtain one.

B. Heating Equipment: Unless University authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas heaters with individual space thermostatic control.

1. Use of gasoline burning or oil-fired space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to University's Representative, and marked for intended use.
3. Permanent HVAC System: If University authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of **8** at each return air grille in system and remove at end of construction.

C. Meters: For measurement of water, electricity, gas or other utilities used by Design Builder, provide meters acceptable to University's Representative for measurement of utility use.

D. Backflow preventer: Reduced Pressure Principal type.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with University's Representative and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system or University's private system as directed by University's Representative.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
2. Disinfecting: Disinfect temporary water piping prior to use.
3. Provide water meter and backflow prevention device.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Toilets: Use of University's existing toilet facilities will not be permitted.

E. Heating and Cooling: Provide temporary heating or cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

G. Electric Power Service: Use of University's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to University. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service overhead, unless otherwise indicated.
2. Connect temporary service to University's existing power source, as directed by University.
3. Provide electric meter.

H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

I. Telephone and Electronic Communication (i.e. Data) Service: Provide temporary telephone and data service, including electronic mail, in University's field office and common-use facilities for use by all construction personnel. Install at least one telephone line(s) for each field office.

1. Provide additional telephone lines for the following:

a. Provide a dedicated telephone line for each facsimile machine in each field office.
b. Provide a dedicated telephone line for each computer in each field office.

2. At each telephone, post a list of important telephone numbers.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Architect's office.
e. Engineers' offices.
f. University's office.
g. Principal subcontractors' field and home offices.

3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
4. Order voice/data service through UCR Campus Communications (UCR C&C). Coordinate with UCR C&C the point of connection for said services.
a. Provide data connections as needed to Contractor's field office.
b. Provide data connection to the University Representative's trailer to accommodate each work space, computer, and equipment needs.
c. Installation shall be by a University's approved contractor.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines or existing buildings. Comply with CFC Article 87.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion may be permitted to use permanent facilities, under conditions acceptable to University.

B. Traffic Controls: Comply with requirements of University Police or authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.
3. Traffic Control: Provide traffic control and flagman's services at all points where conveying equipment engaged on the Work regularly enters upon or crosses city, county or University maintained roads. The methods of traffic control and locations of flagman's stations shall be subject to the approval of the University's Representative.
4. Fire Access Lane: Maintain a minimum constant 24-foot-wide fire truck access route at all times during construction where fire access lane is shown or required to serve existing buildings.
5. Adopt all practical means to minimize interference to traffic. Access to other University facilities in the area shall be maintained at all times.
6. Furnish all directional signage barricades, lights, and flagmen required to control vehicular, pedestrian and bicycle traffic and provide and maintain suitable temporary barricades, fences, directional signs, or other structures as required for the protection of the public; and maintain, from the beginning of twilight through the whole of every night on or near the obstructions, sufficient lights and barricades to protect the public and Work.
7. Install and maintain such devices that are necessary to provide reasonably safe passage for the traveling public, including pedestrians and bicyclists around the project, as well as for the safeguard of workers.

C. Parking: Use designated areas of University's existing parking areas for construction personnel. Provide transportation as required to and from the project site to off project site lay down area or remote construction parking lot (if provided). Coordinate specific locations with University Representative.

D. Dewatering Facilities and Drains: Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or University Facilities nor endanger permanent Work or temporary facilities.

E. Project Identification Signs: Provide Project identification signs. Install signs where directed by the University's Representative to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.
3. Provide two project identifications signs in accordance with Campus Standard detail.

4. Provide signs for traffic direction and warnings such as "Construction Project" and "Keep Out" to facilitate control of personnel and vehicles. Use only the minimum number necessary, to 2' x 4' maximum size.

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of the University's Representative and authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements. Follow Best Management Practices for Solid Waste Management.

G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
2. Crane Operation, Staging and Storage

a. Operator Training and Crane Certification: Prior to starting crane operations, provide copies of operator's training and crane certification to the University's Representative.
b. Crane Staging Area: Crane staging areas will be required to be coordinated with the University's Representative a minimum of 5 business days in advance of loading and removal of crane and/or materials from the roof.
c. Storage: will not be allowed on-project site except at remote staging areas.

H. Temporary Elevator Use: Refer to Division 14 Sections for temporary use of new elevators.

I. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

J. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

K. Scaffolding: Provide scaffolding as required to complete the Work. Coordinate platform elevations and tower locations with the building design to permit Work to be conducted in accordance with the requirements for joints, changes in materials, and application of materials.

L. Temporary Shoring: Provide temporary shoring as required to protect existing buildings, utilities and other improvements that will be affected by construction activities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental

regulations and follow Best Management Practices that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects to the project site, lay down area, remote contractor parking and temporary trailer facilities.

B. Temporary Erosion and Sedimentation Control: Apply Best Management Practices (BMPs) to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

1. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

C. Stormwater Control: Comply with SWRCB and apply Best Management Practices (BMPs). Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains. These provisions are also required at off project site lay down areas.

D. Tree and Plant Protection: Comply with requirements below or as specified in Division 32 Section "Temporary Tree and Plant Protection."

1. Preserve and protect existing trees and plants at Site, which are designated to remain, and those adjacent to Site.
2. Consult with University's Representative and remove agreed-on roots and branches, which interfere with construction. Employ qualified tree surgeon to remove, and to treat cuts.
3. Protect root zones of trees and plants:

    a. Do not allow vehicular traffic or parking.
    b. Do not store materials or products.
    c. Prevent dumping of refuse or chemically injurious materials or liquids.
    d. Prevent formation of puddles or continuous running water.

4. Carefully supervise excavating, grading, filling, and subsequent construction operations, to prevent damage.
5. Replace, or suitably repair, trees and plants designated to remain which are damaged or destroyed due to construction operations.
6. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for University. Perform control operations lawfully, using environmentally safe materials. Construction activities shall not produce stagnant water ponds conducive to mosquito breeding habitat at any time.

F. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily seeing through and entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations and as indicated on Drawings or approved by the University's Representative.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide University with one set of keys or install University's padlock and daisy chain padlocks to allow either University or Design Builder to enter site.
3. Provide breakaway gates for fire department access in accordance with state fire authority requirements.

G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction, unsecured existing buildings and tunnel construction openings. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.

I. Comply with SCAQMD regulations for grading phase, including Rule 403 and Rule 402, the Nuisance Rule. To ensure that construction trucks do not emit fugitive dust and that there is no nuisance impact off the site, the contractor shall as a minimum do the following:

1. Moisten soil more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from exceeding 100 feet in any direction
2. Apply chemical stabilizers to disturbed surface areas (completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.
3. Water open storage piles hourly or cover with temporary coverings.
4. Water exposed surfaces at least twice a day under calm conditions and as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.
5. Wash mud-covered tires and under-carriages of trucks leaving construction sites.
6. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing project sites.
7. Securely cover loads of dirt with a tight fitting tarp on any truck leaving the construction sites to dispose of excavated soil.

8. Cease grading during periods when winds exceed 25 miles per hour.

J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

1. Where heating or cooling is needed and permanent enclosure is not complete provide temporary weather tight enclosure for building exterior.

K. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with CFC Article 87.

1. Prohibit smoking in hazardous fire-exposure areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

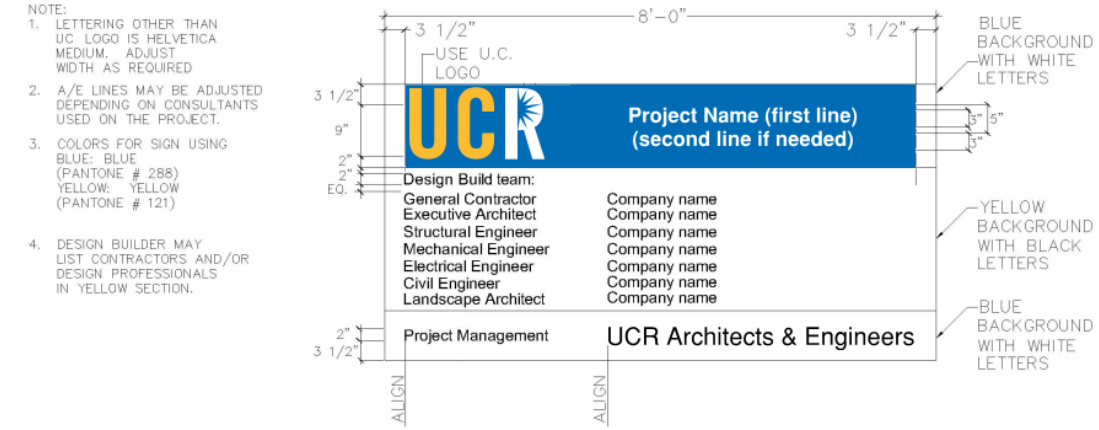
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

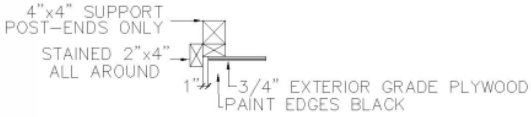
D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Design Builder. University reserves right to take possession of Project identification signs.
2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by University's Representative.
3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

NOTE:
1. LETTERING OTHER THAN UC LOGO IS HELVETICA MEDIUM. ADJUST WIDTH AS REQUIRED
2. A/E LINES MAY BE ADJUSTED DEPENDING ON CONSULTANTS USED ON THE PROJECT.
3. COLORS FOR SIGN USING BLUE: BLUE (PANTONE # 288) YELLOW: YELLOW (PANTONE # 121)
4. DESIGN BUILDER MAY LIST CONTRACTORS AND/OR DESIGN PROFESSIONALS IN YELLOW SECTION.



JOB SIGN
N.T.S.



TYP. FRAME SECTION
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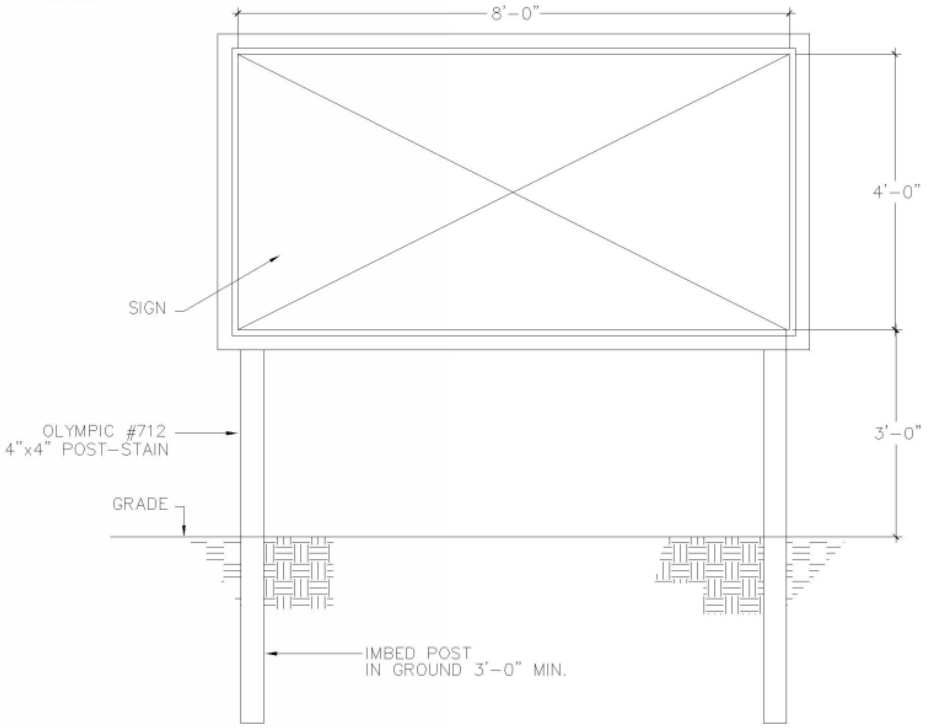

2015 12 18 Date	University of California Riverside Architects & Engineers Campus Standard & Design Criteria	PROJECT SIGN FOR DESIGN BUILD	01 5000-01
NO SCALE Scale	Project Name	Sheet Title	Sheet No.

END OF SECTION 01 5000

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and product substitutions.

B. Related Sections include the following:

1. Division 01 Section "Allowances" for products selected under an allowance.
2. Division 01 Section "Alternates" for products selected under an alternate.
3. Division 01 Section "References" for applicable industry standards for products specified.
4. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
5. Divisions 02 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Design Builder.

1. The following are not considered substitutions:

a. Revisions to Contract Documents requested by the University's Representative.

b. Specified options of products and construction methods included in Contract Documents.
c. The Design Builder's determination of and compliance with governing regulations and orders issued by governing authorities.

1.3 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1. Coordinate product list with Design Builder's Contract Schedule and the Submittals Schedule.
2. Form: Tabulate information for each product under the following column headings:

a. Specification Section number and title.
b. Generic name used in the Contract Documents.
c. Proprietary name, model number, and similar designations.
d. Manufacturer's name and address.
e. Supplier's name and address.
f. Installer's name and address.
g. Projected delivery date or time span of delivery period.
h. Identification number on Contract Schedule network.
i. Identification of items that require early submittal approval for scheduled delivery date.

3. Initial Submittal: Within 30 days after date of the Notice to Proceed, submit electronic copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
4. Completed List: Within 60 days after date of the Notice to Proceed, submit electronic copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
5. University's Action: University will respond in writing to Design Builder within 14 days of receipt of each product list. University's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. University's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit electronic copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided by University.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified material or product cannot be provided.
b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by University and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. List of similar installations for completed projects with project names and addresses and names and addresses of Owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to University's Representative.
i. Detailed comparison of Design Builder's Contract Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Design Builder's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
l. Design Builder's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. University's Action: If necessary, University will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. University will notify Design Builder of acceptance or rejection of proposed substitution within 21 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance: signed Substitution Request form indicating acceptance from University's Representative.
b. Use product specified if University cannot make a decision on use of a proposed substitution within time allocated.
c. If the University's Representative determines the proposed substitution is unacceptable, then the specified material, product or equipment shall be provided.
d. The decision of the University's Representative is final.

4. Do not use Submittal Transmittal form with a Substitution Request form. Substitution shall be submittal separate from submittals with the Substitution Request form as the cover sheet. Any substitutions submittal with general submittal may be rejected without review.

1.4 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

B. Compatibility of Options: If Design Builder is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. If the proposed substitution requires that portions of the Work be redesigned or removed in order to accommodate the substituted item, submit design and engineering calculations prepared by a California licensed design professional.

D. Samples may be required for substitutions. Tests required by University's Representative for the determination of quality and utility shall be made by Design Builder's Testing Laboratory and at the expense of Design Builder, with acceptance of the test procedure first given by University's Representative.

E. In reviewing the supporting data submitted for substitutions, University's Representative will use, for purposes of comparison, all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Specifications. If more than two submissions of supporting data are required, the cost of reviewing the additional supporting data shall be borne by Design Builder; and University will deduct the costs from the Contract Sum.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Reject delivery of damaged or defective items. Promptly remove damaged or defective products from the Project site and replace with new at no change in Contract Sum.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store sand, rock, or aggregate materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
6. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
7. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
8. Protect stored products from damage.
9. Periodically inspect stored products to assure that products are maintained under specified conditions and are free from damage and deterioration.

D. Imported Materials and Products:

1. Imported materials and products require special handling in shipping crates. Document and examine materials at the following points:

    a. At the origination point prior to crating.
    b. At the port of embarkation (for damage to crates).
    c. At the port of entry (for damage to crates).
    d. Immediately following delivery to the Site.

2. If crates show signs of damage, open them and inspect materials and products.
3. Reject damaged or defective products or materials, and replace promptly.
4. Provide detailed Bill of Goods at each point listed above, indicating quantity and condition of each item. At port locations, Bill of Goods may be accepted unless damage is observed.
5. Imported materials and products may contain hazardous materials not allowed in the United States. Provide certification that materials and products do not contain any hazardous materials banned by the Environmental Protection Agency (EPA), such as asbestos, lead paint, PCB, etc.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Design Builder of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to University.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for University.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. University reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," University will make selection.

5. Where products are accompanied by the term "match sample," sample to be matched is University's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. “Or Equal”: Where products are specified by manufacturers name and accompanied by the term "or equal", comply with provisions in Part 2 "Product Substitutions" Article to obtain approval for use of an unnamed product.
8. Products shall not contain any hazardous materials banned by the Environmental Protection Agency (EPA), such as asbestos, lead paint, PCB, etc.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, and indicates “no known equal” provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, and indicates “no known equal” provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Visual Matching Specification: Where Specifications require matching an established sample, select a product that complies with requirements and matches University's sample. University's decision on whether a proposed product matches will be final.
    a. When approval of a color, pattern or texture sample match by the University is required, provide the best match that complies with the specification and also provide the two nearest in the selection range to either direction from the same manufacturer/supplier. Application examples are:
        1) Color – shall have two color hues or shades darker and two color hues or shades lighter. Total of five selections available.
        2) Pattern – shall have two patterns that are less dense (or smaller) and two patterns that are more dense (or larger). Total of five selections available.
        3) Texture – shall have two textures that are less rough (or smaller) and two patterns that are more rough (or larger). Total of five selections available.
    b. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Article 2.2, Product Substitutions, for proposal of product.

6. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, University will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, University will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: University will consider requests for substitution if received within 90 days after the Phase 3 Notice to Proceed. Requests received after that time may be considered or rejected at discretion of University.

B. Conditions: University will consider Design Builder's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, University will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers University a substantial advantage in cost, time, energy conservation, or other considerations.
2. Requested substitution is consistent with the Contract Documents and will produce required results.
3. Substitution request is fully documented and properly submitted.
4. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
5. And one or more of the following conditions are satisfied:

    a. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
    b. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
    c. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Design Builder certifies that the substitution will overcome the incompatibility.
    d. The specified product or method of construction cannot be coordinated with other materials, and where the Design Builder certifies that the proposed substitution can be coordinated.

e. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Design Builder certifies that the proposed substitution can provide the required warranty.
f. The specified product or material has been discontinued or is no longer available.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000

SECTION 01 7300 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Utility Shutdown Requirements
2. Construction layout.
3. Field engineering and surveying.
4. General installation of products.
5. Coordination of University-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of University-accepted deviations from indicated lines and levels, and final cleaning.

1.2 UTILITY SHUTDOWN REQUIREMENTS

A. General:

1. To minimize negative impacts, UCR has developed procedures and guidelines for design builders, design professionals and Design Builders to use when planning for and requesting a utility shutdown on all construction projects.
2. Design Builder requested utility shutdowns are discretionary on UCR’s part. Not until UCR has reviewed the utility shutdown request application, and has been fully apprised of the potential risks and impacts, and any necessary contingency plans, will the Utility Shutdown Request (USR) be granted. It shall be the sole responsibility of the Design Builder to provide the above information, in accordance with the provisions in this section. A copy of the final approved Utility Shutdown Plan shall be included in the 100% Construction documents record documents.

3. The procedures and guidelines provided herein may be changed at any time by UCR for security and safety reasons.

B. Protocols for new building construction projects

1. Utility Shutdowns are defined as a singular event; one turn-off/one turn-on.
2. Shutdowns affecting adjacent facilities should occur during a maximum of a four hour window on weekends and/or during the hours of 12 am and 5 am within a 24 hour period, unless otherwise approved by UCR.
3. One USR is required for each service being disrupted.
4. Design Builders shall follow UCR “Lockout/Tagout” procedures for any utility affecting facilities “downstream” of the service. This program information shall be included in all USR related documentation provided by the Design Builder. All parties involved in the lockout/tagout process, such as, Design Builder, subcontractors, UCR Operations and Maintenance of Plant, should apply their own locks and tags. No shared lock is allowed at any time.
5. A single USR form is required for the physical shutdown of a single utility. If, by shutting down one utility, this causes loss of other systems or utilities, those other systems and utilities are identified and addressed in the Impact Analysis.
6. A USR is required for the physical shutdown of each utility even when occurring during the same time period. For example, if both electrical and water are proposed to be shut down during a given period, two URS Forms are required. Each utility shutdown will result in different impacts, likely independent of the other, and therefore will undergo independent evaluations and approvals.
7. Utility Shutdown Request (USR) must be submitted 14 calendar days prior to the proposed utility shutdown, unless otherwise required or authorized by UCR. In the event that there is an “immediate” or “emergency” utility shutdown which must occur with less than a 14 day notice, then University’s Representative shall be notified with as much time as possible with all required details and impacts included in the request. UCR staff will assist in this request as quickly as possible however no shutdown will be approved until all documents and review are completed.
8. USR’s are submitted electronically or manually, including all required documentation to the project’s University’s Representative.
9. Status of each USR review is available from the University’s Representative for each project.
10. Only UCR Operations and Maintenance of Plant (OMP) personnel are permitted to disrupt or disconnect any utility system.
11. Personnel required to be at all shutdowns include the Operations and Maintenance of Plant (OMP) personnel, who will be conducting the actual shutdown; the Design Builder; as well as Architects & Engineers (A&E) inspectors. In addition, shutdowns may require other A&E staff, UCR Environmental Health & Safety, UCR Police Department, and UCR subcontractors. All other resources necessary for the successful

shutdowns and restoration are provided by the Design Builder at the time of the Shutdown and turn-on of utilities.

12. Electrical shutdowns may be required to be scheduled at a minimum of three days apart.
13. A utility shutdown may be canceled the night of the shutdown for any of the following reasons:
    a. All elements identified in contingency plan are not in place;
    b. Design Builder is not ready within 30 minutes of scheduled shutdown;
    c. Security and operational readiness issues identified by UCR staff;
14. If a shutdown is canceled for any reason, the University's Representative and Construction Inspector of Record (CIOR) shall be contacted immediately, by the person or entity cancelling the shutdown. The University's Representative and Construction Inspector of Record will then notify all stakeholders of the cancelation.

C. UCR Roles and Responsibility

1. UCR Operations and Maintenance of Plant (OMP) performs ALL shutdowns: OMP is a division within the Business and Administrative Services (BAS) and is the ONLY party allowed to physically disrupt or disconnect any utility system. The role of OMP is to provide maintenance of the overall University facility. Utility shutdowns will be scheduled based on availability of those resources, while recognizing that it will be necessary to schedule those required resources, and calculate all fees for the service as early as is possible.
2. UCR A&E, Construction Inspector of Record (CIOR) participants on ALL shutdowns: UCR Inspectors will be present at the beginning, periodically during and at the end of all utility shutdowns and turn-on events. Inspections shall certify that the utility has been re-established satisfactorily and CIOR will document the same. UCR EH&S shall communicate UCR lockout/tagout procedures with the Design Builder.
3. UCR A&E, University's Representative participant in ALL shutdowns: The designated University's Representative is the single point of contact for the Design Builder for all utility shutdowns. The University's Representative has the initial responsibility to approve and/or reject the USR and, with others, will review the Design Builders implementation of the Contingency Plan and proposed execution of the utility shutdown and may be at the site at the time of shutdown and/or turn-on.

D. Design Builder Roles and Responsibilities

1. Design Builder shall submit a detailed Utility Shut Down Plan which shall identify all of the utilities affected, how the utility is to be isolated, maximum allowable duration of interruption (if applicable) and the affected facilities and systems, and lockout/tagout procedures for all shut downs. The Design Builder is responsible for submitting a Utility Shutdown Request (USR) for each and every proposed utility shutdown event.

2. Design Builder is responsible for developing the Impact Analysis to be included with the USR. The Impact Analysis must include the specific location of the utility shutdown, documentation of field forensic investigations to verify as-built conditions and all systems and parties affected by the shutdown, lockout/tagout procedures, and the specific impact to each system and party affected. Documentation can include written narrative, diagrams, sketches, and photos as appropriate. The Impact Analysis shall include a specific work plan for providing Design Builder personnel and equipment to support the shutdown, including requirements generated by the impacts to other systems and parties. The Impact Analysis must also identify the need for support from other entities such as UCR Communication and Computer Systems Services, UCR OMP, UCR EH&S, UCR Police Department, UCR Subcontractors, and others. Early notice is imperative for proper coordination.
3. Emergency Shutdown events will be handled on a case by case basis, however as much prior notice as possible shall be provided to the University's Representative. Immediately notify the University's Representative if/when this occurs. Only UCR A&E team members in conjunction with OMP shall decide if the event is an "emergency".
4. In communication with the University's Representative for the specific project, the Design Builder shall meet with all Shutdown Stakeholders in order to address/mitigate fully, all comments or concerns raised by the utility shutdown activity. The University's Representative will coordinate this meeting.
5. Once all comments and issues are discussed and addressed, and/or the initial Utility Shutdown Plan is approved, the Design Builder will correct and re-submit all Utility Shutdown Plan documents to the University's Representative for inclusion in the Construction Documents and Project Specifications Manual.
6. Design Builder shall prepare all Utility Shutdown forms.
7. Design Builder shall ensure that all Construction Documents are updated so that final "As-Built" documents reflect all Utility Shutdown activity for this project.
8. Design Builder is responsible for developing and implementing a contingency plan, if requested by UCR, to mitigate specific impacts during the shutdown. Any and all resources, including equipment, manpower and supervision required for the execution of the contingency plan are the responsibility of the Design Builder. This includes, but is not limited to, temporary signage, temporary power, clean-up of collateral damage, operational workarounds, etc. This may include all areas and systems impacted by the shutdown.
9. The Design Builder is responsible for issuing a monthly 30 day look-ahead calendar that includes the identification of all projected USR's. The calendar shall be updated as necessary and shall identify the Design Builder's utility shutdown identification/number (CUSR) and the date and type of the proposed shutdown.
10. During the utility shutdown, the Design Builder is responsible for documenting previously unknown conditions found at the shutdown location, and for including them within the official project construction

documents for permanent archiving with the Architects & Engineers Office.

11. The Design Builder is responsible for contacting the University's Representative at least 2 hours prior to the actual utility shutdown and prior to the utility restart. If there is any delay in the shutdown or restart from the approved schedule, the Design Builder is responsible for notifying the University's Representative as soon as that information is known.

E. Process and Procedure for submitting USP and USR's

1. The Design Builder shall submit the initial detailed Utility Shutdown Plan (USP), which includes and identifies all utilities affected, how the utility is to be isolated, maximum allowable duration of interruption (if applicable) and the affected facilities, and lockout/tagout procedures for all major shut downs. Design Builder shall also specify by-pass or temporary service if required to minimize disruption to the University. A copy of the approved plan, which includes the prepared Utility Shutdown Request (USR), will be included in the record documentation.
2. The Design Builder submits the project USR, in electronic or hard copy format, including the Impact Analysis (mandatory), to the University's Representative. This starts the required calendar day review period necessary for processing the USR. Any revisions or additions to the submitted USR, necessitating the re-submittal of the USR, will result in the restart of the required calendar day review period.
3. The University's Representative will review the submitted USR for need, completeness, and compliance with the required notification period. Any changes to the USR or Impact Analysis along with any requirement for a contingency plan will be transmitted by the University's Representative to the Design Builder. The University's Representative will provide the initial approval of the USR.
4. Following the initial approval by the University's Representative the USR, Impact Analysis, and Contingency Plan (if required) will be reviewed by Physical Plant (OMP), Environmental Health & Safety (EH&S) and other stakeholders. This review will include a technical review of the Impact Analysis, by impacted stakeholders, and coordination of schedule for the utility shutdown.
5. Upon a satisfactory review of the USR, including the Impact Analysis and Contingency Plan, the University's Representative will schedule a Stakeholder Coordination Meeting, if needed. This meeting is chaired by the University's Representative and includes the Design Builder and all applicable stakeholders identified in the USR or as part of the review process. The purpose of the meeting is to review all elements of the utility shutdown including the review of impacts and applicable contingencies to assure all known elements have been addressed. The USR and applicable Contingency Plan can be modified in this meeting provided all stakeholders are in agreement, the modification does not impact any additional stakeholder not in attendance, and the resulting shutdown in the field can be fully supported.

6. Upon satisfactory completion of the Stakeholder Coordination Meeting, the University's Representative will obtain final approval signatures.
7. The University's Representative will return the approved USR to the Design Builder with copies to all stakeholders identified in the USR as well as other parties identified by the UCR Staff.
8. Following approval of a USR, if the USR is cancelled for any reason, the University's Representative will immediately notify all stakeholders of the cancellation.

1.3 SUBMITTALS

A. Qualification Data: For land surveyor or professional engineer.

B. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.

C. Certified Surveys: Submit three copies signed by land surveyor or professional engineer and one AutoCad electronic file of survey on CD-R.

D. Final Property Survey: Submit three copies showing the Work performed and record survey data and one AutoCad electronic file of survey on CD-R.

E. Contingency Plan: Submit six copies within 60 days of Notice to Procedure for emergency plan(s) should an existing utility be damaged.

1.4 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in California and who is experienced in providing land-surveying services of the kind indicated.

B. If cleaning and protection is not performed to the satisfaction of the University's Representative, the University reserves the right to have cleaning performed by others at the Design Builder's expense.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, the Design Builder shall investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
3. Locate all known existing utilities and shut-off devices before proceeding with construction operations which may cause damage to such installations. Existing utilities shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Sum.
4. If any other structures or utilities are encountered, request University's Representative to provide direction on how to proceed with the Work.
5. If any structure or utility is damaged, take appropriate action to ensure the safety of persons and property.
6. Submit a contingency plan for emergency repair of all utilities to University's Representative for approval prior to commencing Work.

B. Acceptance of Conditions: Examine substrates, areas, and conditions, with installer or applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

    a. Description of the Work.
    b. List of detrimental conditions, including substrates.
    c. List of unacceptable installation tolerances.
    d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that it is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with University's Representative.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions

of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to University's Representative. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on form, "Request for Interpretation."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify University's Representative promptly.

B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify University's Representative when deviations from required lines and levels exceed allowable tolerances.
6. Close site surveys with an error of closure equal to or less than the standard established by industry standards.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by University's Representative.

3.4 FIELD ENGINEERING

A. Identification: University will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of University's Representative. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to University's Representative before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with NGS for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

E. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation.

1. Make vertical work plumb and make horizontal work level.

2. Install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Doors and access panels shall be kept clear.
5. Before beginning any installation, make provisions to avoid interference.
6. Relocate installed work that does not provide adequate accessibility.
7. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
8. Do not obstruct spaces and installations that are required to be clear by California Building Codes requirements.

B. Precedence of Installation Requirements:

1. Descriptive specification.
2. Product listing, classification or certification.
3. Manufacturer's installation instructions.
4. Trade association or referenced standards.
5. Most common trade practice.

C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated unless more explicit or stringent requirements are contained in contract documents.

D. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

F. Tools and Equipment: tools or equipment that produce harmful noise levels.

1. Maximum noise level for trenchers, graders, and trucks shall not exceed 90 dBA at 50 feet as measured under the noisiest operating conditions. For other equipment, noise levels shall not exceed 85 dBA at 50 feet.
2. Jack hammers shall be equipped with exhaust mufflers and steel muffing sleeves. Air compressors should be of a quiet type such as a "wisperized" compressor.
3. Machines and equipment shall not be left idling.
4. Electric power shall be used in lieu of internal combustion engine power wherever possible.
5. Schedule noisy operations so as to minimize their duration at any given location
6. Equipment shall be properly maintained to reduce noise from excessive vibration, faulty mufflers, or other sources.
7. Provide noise barriers to comply with above criteria.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application and as required by Applicable Code Requirements for accessibility. Refer questionable mounting height decisions to the University's Representative for final decision.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
4. Comply with the California Building Code requirements for earthquake Seismic Zone 4.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, produce sketch to arrange joints for the best visual effect and submit to the University's Representative for review. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

K. Isolate each part of the completed construction from incompatible material to prevent deterioration.

3.6 UNIVERSITY-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for University's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by University's construction forces.

1. Contract Schedule: Inform University of Design Builder's preferred contract Schedule for University's portion of the Work. Adjust contract Schedule based on a mutually agreeable timetable. Notify University if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include University's construction forces at preinstallation conferences covering portions of the Work that are to receive University's work. Attend preinstallation conferences conducted

by University's construction forces if portions of the Work depend on University's construction.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas at frequent intervals, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in CFC Article 87 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Puncture.
12. Abrasion.
13. Heavy traffic.
14. Soiling, staining and corrosion.
15. Bacteria.
16. Rodent and insect infestation.
17. Combustion.
18. Electrical current.
19. High speed operation.
20. Improper lubrication.
21. Unusual wear or other misuse.
22. Contact between incompatible materials.
23. Destructive testing.
24. Misalignment.
25. Excessive weathering.
26. Unprotected storage.
27. Improper shipping or handling.
28. Theft.
29. Vandalism.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory authorized service representative is required to inspect field assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

C. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

EXHIBIT A – UTILITY SHUTDOWN REQUEST (USR)

UTILITY SHUTDOWN REQUEST (USR)

APPLICATION (USR)
#2015-XXXXX

Project Number: XXXXXX Contractor USR Tracking Number: _____
Construction Project Description: _____ Project Manager: _____

1. E-mail/submit one (1) form for each utility being requested for shutdown. You must fill out separate forms for each shutdown request.
2. Shutdown information times shall be in half-hour increments.
3. E-mail completed form to the Physical Plant and A&E Project Manager.
4. Requests must be received a minimum of 30 days prior to the utility shutdown event time-NO EXCEPTIONS
5. Utilities shall be shut down and restored by OMP personnel ONLY.
6. The shutdown will not occur unless the Contractor is present at the shutdown location and work area.
7. Please complete the form in its entirety including attached Impact Analysis and Impact Analysis Checklist.

INCOMPLETE FORMS WILL NOT BE PROCESSED.
NOTICE: All forms received on Saturday, Sunday or after 1:00 p.m. (Weekdays) will be marked as "RECEIVED" on the following business day.

SHUTDOWN TIMES MAY CHANGE WITHOUT NOTICE DUE TO UNIVERSITY OPERATIONAL PRIORITIES

(Select ONE utility per form)

☐ Water ☐ Electrical ☐ Gas ☐ Fire Alarm ☐ Security System
☐ Sewer ☐ Automatic Fire Sprinklers ☐ Communications ☐ HVAC ☐ Other _____

Specific Location: _____ Work Areas Adjacent To: _____.
Affected Buildings/Systems: _____
Purpose: _____
Floor Level: _____ Landside Area: _____
Building to Remain Occupied? Yes ☐ No ☐ Is this a Laboratory? Yes ☐ No ☐

CONTACT INFORMATION:

Subcontractor: _____ Contact Name: _____
Phone Number: ( ) ___ - _____ FAX: ( ) ___ - _____ E-MAIL: _____

SHUTDOWN INFORMATION: RESTORE INFORMATION:

Day: _____ Date: _____ Time: _____ Day: _____ Date: _____ Time: _____
Comments: _____
Contractor Requestor's Name: _____ Position/Title: _____
Phone: ( ) _____ E-MAIL: _____ Submitted: _____

DO NOT WRITE BELOW THIS LINE FOR UNIVERSITY OF CALIFORNIA, RIVERSIDE USE ONLY

APPROVED ☐
DENIED (NOT APPROVED) ☐

Date (USR) Received: _____ Time: _____
Comments: _____

_____ _____
Executive Director Senior Project Manager

UCR-USR APPLICATION.1/1 (REV. 4/03/2013) Contractors Utility Shutdown Request- Application

UTILITY SHUTDOWN REQUEST (USR)

IMPACT ANALYSIS

Project No. _____ **Project Manager:** _____

Construction Project Description: _____

Detailed Description of Utility to be Shutdown:

Specific Location:

Lockout/Tagout :

Affected Systems/Equipment:

Impact of Work on Systems/Equipment/Stakeholders

Plan to Mitigate Impacts:

Proposed Work Plan for Implementing the Shutdown:

ATTACH DOCUMENTATION FO FIELD FORENSIC INVESTIGATION, SKETCHES, DIAGRAMS, PHOTOS, AND ADDITIONAL NARRATIVE EXPLANATION AS APPROPRIATE. PROVIDE NAME OF SPECIFIC STAKEHOLDERS IMPACTED

IMPACT ANALYSIS CHECKLIST (1 of 2)

UTILITY SHUTDOWN REQUEST

UCR Project Number: _____ A & E Project Manager: _____

Construction Project Description: _____

Utility to be shutdown: _____ Locations: _____

☐ Field Forensics Investigations and Documentation Complete Date of Completion: ____-____-____

NOTE: CONTRACTOR IS REQUIRED TO COMPLETE AND DOCUMENT FIELD FORENSIC INVESTIGATIONS TO VERIFY AS-BUILT CONDITIONS

Impacted Facilities	Yes	No	Description
Parking Structure	☐	☐	
Sports Field	☐	☐	
Student Recreation Center	☐	☐	
Laboratory	☐	☐	
Administration Building	☐	☐	
Class Rooms	☐	☐	
Streets	☐	☐	
Physical Plant (OMP)	☐	☐	
Central Plant/Steam Plant	☐	☐	
Sports Facility	☐	☐	
Other	☐	☐	

Impacted Parties (Stakeholders)	Yes	No	Description
Students	☐	☐	
Faculty	☐	☐	
Administration	☐	☐	
Vendors	☐	☐	
Other Contractors/Projects	☐	☐	
UCR Department	☐	☐	
IT/Communications	☐	☐	
Fire and Life Safety	☐	☐	
Police/Security	☐	☐	
Physical/Central Plan (OMP)	☐	☐	

Impacted Systems	Yes	No	Description
Water	☐	☐	
Sewer	☐	☐	
Electrical	☐	☐	
Fire Sprinklers	☐	☐	
Fire Alarms	☐	☐	
Gas	☐	☐	
Landscape/Water	☐	☐	
Security	☐	☐	
HVAC	☐	☐	
IT/Communications	☐	☐	
Other	☐	☐	

(Continued From Previous Page)

IMPACT ANALYSIS CHECKLIST (2 of 2)

UTILITY SHUTDOWN REQUEST

Project Number: _____ **A & E Project Manager:** _____

Construction Project Description: _____

Utility to be shutdown: _____ **Locations:** _____

☐ **Field Forensics Investigations and Documentation Complete** **Date of Completion:** ____-____-____

NOTE: CONTRACTOR IS REQUIRED TO COMPLETE AND DOCUMENT FIELD FORENSIC INVESTIGATIONS TO VERIFY AS-BUILT CONDITIONS

Work Plan Requirements	Yes	No	Description
Parking Structure	☐	☐	
Sports Field	☐	☐	
Student Recreation Center	☐	☐	
Laboratory	☐	☐	
Administration Building	☐	☐	
Class Rooms	☐	☐	
Streets	☐	☐	
Physical Plant (OMP)	☐	☐	
Central Plant/Steam Plant	☐	☐	
Sports Facility	☐	☐	
Other	☐	☐	

Work Plan Reviewers	Yes	No	Description-(Specific Persons who will review this Work Plan)
Students	☐	☐	
Faculty	☐	☐	
Administration	☐	☐	
Vendors	☐	☐	
Other Contractors/Projects	☐	☐	
UCR Departments	☐	☐	
IT/Communications	☐	☐	
Fire and Life Safety	☐	☐	
Police/Security	☐	☐	
Physical/Central Plan (OMP)	☐	☐	

Impacted Systems	Yes	No	Description
Water	☐	☐	
Sewer	☐	☐	
Electrical	☐	☐	
Fire Sprinklers	☐	☐	
Fire Alarms	☐	☐	
Gas	☐	☐	
Landscape/Water	☐	☐	

UTILITY SHUTDOWN (OMP)

Request for Assistance

Check Box if Meeting is Required (See Below) ☐

Project No. _____ **Project Manager:** _____

Construction Project Description: _____

Time Charged to Complete this Request for Assistance: _____

Project Manager- Detailed Description of Assistance Requested from Physical Plant (OMP):

Project Manager- Specific Location of Shutdown:

Project Manager- Affected Systems/Equipment Under Discussion:

Physical Plant (OMP) Response-Plan/Discussion to Mitigate Impacts or Proposed Work Plan for Implementing the Shutdown:

Schedule Meeting to Discuss:

ATTACH DOCUMENTATION FOR FIELD FORENSIC INVESTIGATION, SKETCHES, DIAGRAMS, PHOTOS, AND ADDITIONAL NARRATIVE EXPLANATION AS APPROPRIATE. PROVIDE NAME OF SPECIFIC STAKEHOLDERS IMPACTED

SECTION 01 7329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes procedural requirements for cutting and patching work completed within a new project.

B. Related Sections include the following:
1. Divisions 02 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
2. Division 07 Section "Penetration Firestopping" for patching fire-rated construction completed within the project.

1.2 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 7 calendar days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the Work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. University's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would reduce, in University's opinion, the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials. Care shall be taken to locate material ‘cut in’ in the least conspicuous area as practicable.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original installer; comply with original installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Floors and Walls:
   Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 7329

SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Recycling nonhazardous demolition and construction waste.
3. Disposing of nonhazardous demolition and construction waste.

B. Related Sections include the following:

1. Division 01 Section "Sustainable Design Requirements" for additional LEED requirements.
2. Division 01 Section "Temporary Facilities and Controls" for environmental-protection measures during construction.
3. Division 31 Section "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.
4. Division 04 Section "Unit Masonry" for disposal requirements for masonry waste.
5. Division 04 Section "Cast Stone Masonry" for disposal requirements for excess stone and stone waste.

1.2 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to the University.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS

A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of a minimum of 95 percent (Design Builder will be eligible to select LEED Credit MR 2.2) by weight of total waste generated by the Work.

1. Construction Waste:

a. Site-clearing waste.
b. Masonry and CMU.
c. Lumber.
d. Wood sheet materials.
e. Wood trim.
f. Metals.
g. Roofing.
h. Insulation.
i. Carpet and pad.
j. Gypsum board.
k. Piping.
l. Electrical conduit.
m. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.
6) Wood crates.
7) Plastic pails.

1.4 SUBMITTALS

A. Waste Management Plan: Submit electronic copies of plan within 30 days of date established for the Notice to Proceed.

B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

C. Waste Reduction Calculations: Before request for Substantial Completion, submit three copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

H. LEED Submittal: LEED letter template for Credit MR 2.1 and 2.2 if applicable, signed by Design Builder, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.

I. Qualification Data: For Waste Management Coordinator.

1.5 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: LEED Accredited Professional by U.S. Green Building Council. Waste management coordinator may also serve as LEED coordinator.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section 013100 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.6 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:

1. Total quantity of waste.
2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
3. Total cost of disposal (with no waste management).
4. Revenue from salvaged materials.
5. Revenue from recycled materials.
6. Savings in hauling and tipping fees by donating materials.
7. Savings in hauling and tipping fees that are avoided.
8. Handling and transportation costs. Include cost of collection containers for each type of waste.
9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by University's Representative. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 01 Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and Donation: Not permitted on Project site.

C. Salvaged Items for University's Use:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to University.
4. Transport items to University's storage area on campus as designated by University's Representative.
5. Protect items from damage during transport and storage.

3.3 RECYCLING CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Design Builder.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

    a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off University's property and transport to recycling receiver or processor.

3.4 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees on-site or at landfill facility.

C. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off University's property and legally dispose of them.

END OF SECTION 01 7419

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Final Inspection procedures.
2. Warranties.
3. Final cleaning.

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
2. Division 01 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.
3. Division 01 Section "Execution Requirements" for progress cleaning of Project site.
4. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
5. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
6. Division 01 Section "Demonstration and Training" for requirements for instructing University's personnel.
7. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 FINAL PROJECT CLOSEOUT PROCEDURE

A. Completion requires a five stage Project Closeout Procedure. The following provides a description of the procedure. Included at the end of the section is a Project Closeout Procedure flow diagram.

B. Stage One:

1. Construction is complete, required inspections have been performed, and the Work approved by the Design Builder.
2. Submit maintenance and operations manuals for preliminary review a minimum of 30 days prior to submitting Request for Inspection for Substantial Completion.
3. Operating building systems have been taken through start-up and sequence of operations procedures under the direction of a startup service technician.
4. Test and balance of mechanical systems and testing of electrical, alarm and communications systems are complete.

5. Purging and sterilization of plumbing systems is complete.
6. Certification of Life Safety systems and equipment which is the Design Builder's responsible is complete.
7. State elevator safety inspector has passed elevator(s).

C. Stage Two:

1. Submit required two-week advance notice of Request for Inspection for Substantial Completion.
2. Design Builder in conjunction with its Subcontractors (including design professionals and manufacturer's representatives, as appropriate) performs an independent review of the completed Work and generates a punch list of incomplete items and items requiring correction.
3. Campus Fire Marshal has completed review and approved fire safety systems.
4. Completes or corrects the items contained on Design Builder's Design Professionals and Campus Fire Marshall's punch lists.
5. Verify completion of punch lists items.
6. Building operating systems have been maintained in continuous operation for a minimum of two weeks under the direction of startup technician.
7. Remove uninstalled building materials and tools from the building to the designated staging area and the building is broom cleaned.
8. Notify the University that the Work is complete and ready for final inspection and issuance of a Certificate of Substantial Completion.
9. Submit a schedule and agenda for each training session.

D. Stage Three:

1. Upon receipt of Design Builder's Request for Final Inspection for Substantial Completion, University's Representative will either proceed with the final inspection or advise the Design Builder of unfulfilled requirements. Final Inspection will only be performed for the project as a whole, except as otherwise directed by University's Representative.
2. When the project is deemed ready for final inspection, University's Representative and its design consultants, in conjunction with other University personnel will complete a review of the completed Work and generate a punch list of incomplete items and items requiring correction. University will be allowed 3 weeks for completion of this activity.
3. University completes certification of equipment for which it is responsible as required by the Contract Documents.
4. Within one week of receipt of the University punch list, Design Builder shall begin correction of the items contained on the University Punch list and when completed request University back check of those items.
5. If the back check either reveals that items have been completed or that only a limited number of items remain to be completed, the University may issue a Certificate of Substantial Completion. However, if the back check reveals that a substantial number of items remain to be completed or corrected the Design Builder shall be directed to complete those items.

6. Complete remaining items and request a final back check. This process shall be repeated until University's Representative determines that the Work is complete.
7. Provide complete demonstration and training for each building operating system from start-up through sequence of operation to shutdown.
8. Discontinue and/or relocates temporary facilities (except any construction offices relocated to the interior of the building as agreed upon by the University Representative) and final construction trailer meter readings.
9. Substantial Completion will not be accepted until University's Representative receives evidence of satisfactory completion of Facility Commissioning requirements specified in Division 01 Section "General Commissioning Requirements".

E. Stage Four:

1. Upon issuance of Substantial Completion request, Facilities Management shall complete building final meter readings for utilities, a measured record of stored fuel and any other similar data required to determine the final statement of Contract Sum.
2. Complete the minor punch list items remaining after the issuance of the Certificate of Substantial Completion.
3. The University completes a back check of each item contained on the University's punch list. University shall be permitted a minimum of one week to complete the back check.
4. Remove construction mock-ups from the project site.
5. Complete Final Cleaning per the specifications.
6. Make submittal of final maintenance and operations manuals, final project photographs, damage or settlement surveys (as required), property survey and similar final record information.
7. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
8. Submit list of Manufacturers (Exhibit 27).
9. Submit releases required from any agency having authority over unrestricted use of the Work including access to services, utilities, operating permits, occupancy permits, etc. as may apply.
10. Submit As-Built Drawings and Specifications for University review.
11. University reviews As-Built Drawings and Specifications for completeness and correctness and returns comments to Design Builder.
12. Delivers tools, spare parts, extra stock and similar items as required by the Contract Documents to the University Representative.
13. Deliver miscellaneous equipment, cabinets, panels, etc. keys to University's Representative.
14. Request changeover of any remaining insurance coverage to the University as required for continuing coverage of the Work for the project.
15. University shall provide keying for building doors.
16. Make final submittal of Record Documents.

F. Stage Five:

1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
2. Submit certified copy of University's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by University's Representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Request for release of retention including consent of surety to release of retention.
6. University files the Notice of Final Completion.

1.3 WARRANTIES

A. General: Guarantees from subcontractors shall not limit Design Builder's warranties and guarantees to University. 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.

B. Submittal Time: Submit written Guarantee Form within 10 days of the date of Substantial Completion and prior to request for final completion.

C. Warranty form: Submit written guarantees, in the form contained at the end of this section unless otherwise required in individual Sections.

D. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual. Provide two original signed copies.

1. Table of Contents: Neatly typed and in orderly sequence. Provide complete information for each item as follows:

    a. Product or Work item.
    b. Firm name, address, and telephone number; and name of principal.
    c. Scope.
    d. Date of beginning of guarantee, bond, or service and maintenance contract.
    e. Duration of guarantee, bond, or service and maintenance contract.
    f. Design Builder's name, address, and telephone number; and name of principal.

2. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
3. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

4. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, number, and name of Design Builder.

E. Provide additional copies of each warranty in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. Those include but are not limited to South Coast Air Quality Management District (SCAQMD) and State Water Resources Control Board (SWRCB).

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in a commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

   a. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.
   b. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   c. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   d. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   e. Remove tools, construction equipment, machinery, and surplus material from Project site.
   f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.

Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dirt from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Clean floors made of tile, VCT, stone or epoxy in accordance with the manufacturers recommendations.
i. Sweep concrete floors broom clean in unoccupied spaces.
j. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
k. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
l. Remove labels that are not permanent.
m. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
n. Remove paint over "UL" and similar labels, including mechanical and electrical nameplates. Replace label if damaged from cleaning.
o. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
p. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
q. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grilles.
r. Clean ducts, blowers, and coils if units were operated without filters during construction.
s. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
t. Leave Project clean and ready for occupancy.

C. Additional cleaning shall occur after completion of punch list items.

D. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report and submit to the University's Representative.

E. Replace burned-out light fixture lamps, and those noticeably dimmed by hours of use, and defective and noisy starters in lighting fixtures to comply with requirements for new fixtures.

F. Replace parts subject to unusual operating conditions.

G. Remove any 'punch list' identifying markers (i.e. 'blue tape') after ensuring any areas earlier identified requiring remediation have been rectified.

H. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on University's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

I. Confirm by snaking or piping camera that the new and existing underground sanitary and storm drain pipes are clean of construction debris under the building and on site until a connection of a significantly larger pipe.

3.2 CONTINUING INSPECTIONS

A. Provide continuing inspections or consultations to adjust operating systems for a period listed in specific Sections.

GUARANTEE

Project: CMP HVAC REPLACEMENT Project No. 950565

Location: **University of California, Riverside** Date: _____

GUARANTEE FOR _____ (the "Contract"),
{Specification section and contract number}

between **The Regents of the University of California** ("University") and

_____ ("Design Builder").
{Name of Design Builder or subcontractor firm}

hereby guarantees to University that all materials, furnishings and equipment which we have supplied and installed are new, unless otherwise specified, and that all Work is of good quality, free from faults and defects in engineering and design, materials, construction, manufacture and workmanship, and in conformance with the Contract Documents and Construction Documents and in conformance with all applicable codes and standards.

The undersigned further agrees that, if at any time within two years after the date of Substantial Completion 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, jointly and severally, 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. If we fail to fulfill the preceding obligations, and if the University brings action to enforce this warranty, we agree to pay the University's attorneys' fees and expenses incurred in connection therewith, and interest at the maximum rate allowed by law. This warranty is in addition to, and not in substitution of, the rights and remedies available under the Contract Documents or pursuant to applicable law. The warranty is for the benefit of the University.

SUBCONTRACTOR

Date: _____

Signed: _____

Typed Name: _____

Title: _____

Name of Firm: _____

Contractor License Classification & No.

_____

Telephone Number: _____

Address: _____

DESIGN BUILDER

Date:

_____

Signed:

_____

Typed Name:

_____

Title:

_____

Name of Firm:

_____

_____

__

Project Closeout Procedure
Transfer of Capital Projects to Facilities Management

STAGE 1	STAGE 2	STAGE 3	STAGE 4		STAGE 5
DESIGN BUILDER Submit Preliminary Maintenance And Operation Manuals	**DESIGN BUILDER** Submit 2-week notice for Final Inspection	**UNIVERSITY** Final Inspection & Punch List Preparation	**DESIGN BUILDER** Request Final Meter Readings	**DESIGN BUILDER** Submit Releases As Applicable	**DESIGN BUILDER** Submit Final Pay Application
DESIGN BUILDER Start Up Building Systems	**DESIGN BUILDER** Design Builder & Design Professionals Prepare Punch List	**UNIVERSITY** Equipment Certifications	**DESIGN BUILDER** Complete University Punch List	**DESIGN BUILDER** As Built Drawings And Specifications	**DESIGN BUILDER** Submit Certified Punch List Sign-Off
DESIGN BUILDER Submit Test And Balance Report	**UNIVERSITY** EH&S & Campus Fire Marshal Review	**DESIGN BUILDER** Correct University Punch List Items	**DESIGN BULDER** Remove Mockups	**DESIGN BUILDER** Deliver Extra Stock	**DESIGN BUILDER** Submit Final Insurance Coverage
DESIGN BUILDER Sterilize Domestic Water System	**DESIGN BUILDER** Correct Punch List Items & Verify	**DESIGN BUILDER** Building Systems Training Facilities Management	**DESIGN BUILDER** Final Cleaning	**DESIGN BUILDER** Deliver Miscellaneous Keys	**DESIGN BUILDER** Submit Pest Control Report
DESIGN BUILDER Certify Life Safety Systems	**DESIGN BUILDER** Submit Training Schedule	**DESIGN BUILDER** Remove Trailers from Project Site	**DESIGN BUILDER** Submit Final Maintenance & Operation Manuals	**DESIGN BUILDER** Change Insurance Coverage	**DESIGN BUILDER** Request Release Of Retention
DESIGN BUILDER Request State Elevator Inspection	**DESIGN BUILDER** Notify University ready for Final Inspection	**DESIGN BUILDER** Confirm Satisfactory Completion of Commissioning	**DESIGN BUILDER** Submit Warranties & Guarantees	**DESIGN BUILDER** Submit Record Drawings	**UNIVERSITY** File Notice of Final Completion

Beneficial Occupancy (UNIVERSITY OPTION)

December 18, 2015

END OF SECTION 01 7700

SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Finishes Maintenance manuals for the care and maintenance of products, materials, and finishes.
4. Operation and Maintenance manuals for systems, subsystems, and equipment.

B. Related Sections include the following:

1. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
2. Division 01 Section "Closeout Procedures" for submitting operation and maintenance manuals.
3. Division 01 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
4. Divisions 02 through 33 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.2 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 SUBMITTALS

A. Initial Submittal: Submit 2 draft copies of each manual at least 45 days before requesting inspection for Substantial Completion. Submittal shall include a complete operation and maintenance directory. University will return one copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit two copies of each manual in final form at least 30 days before final inspection. University will return copy with comments within 15days after final inspection.

1. Correct or modify each manual to comply with University's comments. Submit four (4) copies of each corrected manual within ten (10) days of receipt of University's comments.

2. Provide each manual in electronic format (CD-DVD) with cover identification similar to printed copy.

1.4 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. 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."

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.

2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Date of submittal.
4. Name, address, and telephone number of Design Builder.
5. Name and address of responsible Design Professional.
6. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring ”D” ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

   a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
   b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.

4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.
    c. Use of photographs instead of drawings to demonstrate an unusual installation is acceptable.

2.3 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.
9. Occupant stuck in elevator.

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.

2.4 PRODUCT FINISHES MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance

procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.5 SYSTEMS AND EQUIPMENT OPERATION AND MAINTENANCE MANUAL

A. Manual shall be provided in the following volumes to match the department. Some information shall be provided in more than one volume. Final contents shall be as directed by the University's Representative. The following list may not include all equipment on the project.

1. Volumes shall be:

No.	Department	Description of contents

No.	Department	Description of contents
1	BUILDING ENGINEER	Air handling Units Fan coil units Hydronic specialties Steam specialties Pumps (hydronic, fire & domestic booster) Vacuum Pumps Air Compressors Soft Water, D.I., R.O. systems Heat Exchanger DHW Generators Filters Emergency Generators Boilers Site chilled water system Site high temperature water system
2	BUILDING MAINTENANCE	Lab equipment Fume Hoods Bio Safety Cabinets Toilet partition Toilet accessories Finishes manual Light fixtures Through-penetration firestop systems and engineering judgments
3	BUILDING SYSTEMS	Fire Alarm Security Fire Suppression sprinkler system (do not include NFPA standards)
4	EH&S (Biosafety Officer)	HEPA Filters Fume Hoods (ASHRAE 110 Test) Biological Safety Cabinets Sterilizers (auto claves) w/ seismic calculation Hood and/or BSC certification (TAB Report)
5	ELECTRIC Shop	Emergency Generators Switchgear Panel boards Transformers Motion controls Dimming panels and systems Site electrical power and lighting
6	ELEVATOR (Contract Manager)	Elevators
7	GROUNDS	Irrigation system Planting materials Site reclaimed water

No.	Department	Description of contents
8	HVAC Shop	Exhaust Fans Controls Package AC units Refrigeration (cold rooms) Fume Hoods and Bio Safety Cabinets
9	LOCK Shop	Door hardware
10	PLUMBING Shop	Water heater gas/electric DHW recirculation pump Sump pumps Plumbing fixtures Electric water cooler and drinking fountains Safety Shower/Eye wash Laboratory outlets Backflow preventors Sterilizer Glass washer Tunnel washer Fire suppression sprinkler system Fire hydrants Fire pump Domestic water booster pumps Site water, storm, sanitary, natural gas and compressed air systems.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include operation data, source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below. In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.

7. Performance curves and/or multi-rating table.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

G. Source Information: List each system, subsystem, and piece of equipment included in manual identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

H. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

I. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.

J. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.

2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

K. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

L. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

M. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by University's operating personnel for types of emergencies indicated.

C. Product Finishes Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by University's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Comply with requirements of Record Shop Drawings in Division 01 Section "Project Record Documents."

G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 7823

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Data Delivery Standards
2. Record Drawings.
3. Record Specifications.
4. Record Product Data.
5. Record Samples
6. Miscellaneous Record Submittals

B. Related Sections include the following:

1. Division 01 Section "Closeout Procedures" for general closeout procedures.
2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Divisions 02 through 33 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.2 SUBMITTALS

A. Data Delivery Standards for UCR Planning & Design Projects – Capital Programs

1. The UCR Capital Assets Strategies (CAS) maintains the most up-to-date base map documents. To ensure continuity and accuracy of existing site conditions, UCR CAS manages a campus-wide Geographic Information System (GIS). All associated horizontal and vertical controls reflect current industry standards. All UCR control points are based upon the California State Plane Coordinate System, Zone 6, NAD 83, EPOCH 2009.00 with elevations based upon the North American Vertical Datum of 1988. UCR control point values will be made available to architects, engineers, and land surveyors performing planning and D\design projects on the UCR campus. To assure the utilization of campus control points and the ability to place AutoCAD drawings into GIS the following protocol is required:

a. Upon receipt of written request from Design Builder, UCR CAS will provide an AutoCAD drawing file of the campus control points, and their values.
b. Consultants shall use the provided Campus Control System as provided by UCR CAS at the onset of a project and utilize it without alteration for all survey and mapping projects. A minimum of three Campus Control Points shall be used to constrain the survey work. In addition, one City of Riverside Control Point having an

established elevation published by the City will be surveyed and the vertical difference noted on prepared drawings.

c. All drawings submitted to the UCR shall include a digital AutoCAD drawing file that will be checked for conformance with the UCR Campus Control System requirements. All project drawings not found to be in compliance with the established standards will be rejected. Revisions to the drawings shall be performed by the Design Builder at no cost to the UCR.

1) Electronic Media: CD-R.

B. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal: Submit one set of bond plots from corrected Record CAD Drawings and one set of marked-up Record Prints. Design Builder will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting is acceptable. University's Representative will return plots with any comments to be incorporated into Record Drawings.

b. Final Submittal: Submit one set(s) of record CAD drawing files, one set(s) of record CAD drawing mylar plots, and one set of prints from record plots. Plot and print each drawing, whether or not changes and additional information were recorded.

1) Electronic Media: CD-R.

C. Record Specifications: Submit one electronic file copy of Project's Specifications, including addenda and contract modifications.

1. Electronic Media: Microsoft Word, CD-R.

D. Record Product Data shall be part of operation and maintenance manuals. Insert in operation and maintenance manuals instead of a submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints in red colored pencil to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an understandable drawing technique.
c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations below first floor.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order.
k. Changes made by University's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.
o. Final University furnished room numbering.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with University's Representative. Prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:

1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
2. Format: AutoCAD DWG, most current version, operating in Microsoft Windows operating system.
3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.

C. Record Shop Drawings: Prepare Shop Drawings instead of revising the Design Professional drawings as Record Drawings when Shop Drawings have been produced for the project. This shall include Coordination and Detailing Activity (CDA) drawings.

1. Revise Design Professional drawings to refer to Shop Drawing sheet for Record Drawing information for that particular product, material or equipment shown on the Shop Drawing.
2. Shop Drawings as Record Drawings shall detail and show requirements to record the actual physical installation and its relation to other construction. Integrate Shop Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

D. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and Record Shop Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in shipping containers. Mark each container with identification. If container does not include a complete set, identify Drawings included.
3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
4. Identification: As follows:

a. University’s Project name and number.
b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Design Professionals.
e. Name of Design Builder.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Note related Change Orders and Record Drawings where applicable.

2.3 RECORD 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. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.4 RECORD SAMPLES

A. Immediately before date of Substantial Completion, meet with University's Representative at Project site to determine which Samples maintained during the construction period shall be transmitted to University for record purposes.

B. Comply with University Representative's instructions for packaging, identification marking, and delivery to University's Sample storage space. Dispose of other Samples in the manner specified for disposing surplus and waste materials

2.5 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference. Miscellaneous records include, but are not limited to, the following:

1. Field records on excavations and foundations.
2. Field records on underground construction and similar work.
3. Surveys showing locations and elevations of underground lines.
4. Invert elevations of drainage piping.
5. Surveys establishing building lines and levels.
6. Authorized measurements using unit prices or allowances.
7. Records of plant treatment.
8. Ambient and substrate condition tests.
9. Certifications received in lieu of labels on bulk products.
10. Batch mixing and bulk delivery records.
11. Testing and qualification of trades persons.
12. Documented qualification of installation firms.
13. Load and performance testing.
14. Inspections and certifications by governing authorities.
15. Leakage and water-penetration tests.
16. Fire-resistance and flame-spread test results.
17. Final inspection and correction procedures.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur. University's Representative and IOR shall review documents during the monthly Application for Payment.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for University's Representative's reference during normal working hours.

END OF SECTION 01 7839

SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for instructing University's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training videotapes.
4. Operator Training Schedule

B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for requirements for preinstruction conferences.
2. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

1.2 SUBMITTALS

A. Instruction Program: Submit four copies of Basic System Training Schedule form with the outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. At completion of training, submit two complete training manual(s) for University's use.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.3 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

B. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.4 COORDINATION

A. Coordinate instruction schedule with University's Representative. Adjust schedule as required to minimize disrupting University's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by University's Representative.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. Systems and equipment listed below are minimum examples that might apply to the project. Revise to suit Project:

1. Motorized doors, such as overhead coiling doors, overhead coiling grilles and automatic entrance doors.
2. Equipment, such as laboratory fume hoods, greenhouse cooling/motorized vents and autoclaves.
3. Fire-protection systems, such as fire alarm, fire pumps and fire-extinguishing systems.
4. Conveying systems, such as elevators.
5. Laboratory equipment, such as laboratory air and vacuum equipment and piping.
6. Heat generation, such as boilers, feedwater equipment, pumps, steam distribution piping and water distribution piping.
7. Refrigeration systems, such as chillers, cooling towers, condensers, pumps and distribution piping.
8. HVAC systems, such as air-handling equipment, air distribution systems, and terminal equipment and devices.
9. HVAC instrumentation and controls.
10. Electrical service and distribution, such as transformers, switchboards, panel boards and motor controls.
11. Packaged engine generators, such as transfer switches.
12. Lighting equipment and controls.

13. Communication systems, such as intercommunication, surveillance, clocks and programming, voice and data, and television equipment.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

   a. System, subsystem, and equipment descriptions.
   b. Performance and design criteria if Design Builder is delegated design responsibility.
   c. Operating standards.
   d. Regulatory requirements.
   e. Equipment function.
   f. Operating characteristics.
   g. Limiting conditions.
   h. Performance curves.

2. Documentation: Review the following items in detail:

   a. Emergency manuals.
   b. Operations manuals.
   c. Maintenance manuals.
   d. Project Record Documents.
   e. Identification systems.
   f. Warranties and bonds.
   g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

   a. Instructions on meaning of warnings, trouble indications, and error messages.
   b. Instructions on stopping.
   c. Shutdown instructions for each type of emergency.
   d. Operating instructions for conditions outside of normal operating limits.
   e. Sequences for electric or electronic systems.
   f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

   a. Startup procedures.
   b. Equipment or system break-in procedures.
   c. Routine and normal operating instructions.
   d. Regulation and control procedures.
   e. Control sequences.
   f. Safety procedures.
   g. Instructions on stopping.
   h. Normal shutdown instructions.
   i. Operating procedures for emergencies.
   j. Operating procedures for system, subsystem, or equipment failure.

k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Engage qualified instructors to instruct University to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

B. Scheduling: Provide instruction at mutually agreed on times.

1. Schedule training with University's Representative with at least 14 days' advance notice.

2. Fill out and expand, if necessary, the schedule form attached at the end of this section to reflect equipment and systems on the project.

C. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 01 7900

UCR PHYSICAL PLANT

Project Number: 950528

OPERATOR TRAINING SCHEDULE - - MULTIDISCIPLINARY RESEARCH BUILDING 1

Session	Division	System	Training Specification	Hours Specified	UCR hours needed	UCR requested agenda	*Date completed*	*UCR Sign-off*
B	15071	Vibration & Seismic Controls for Plumbing/HVAC piping	"Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain air-mounting systems."	N/A	15 minutes	Pertains to all HVAC rotating equipment listed in Schedule 15071/3.8. Review procedure for inspection, adjustment, and replacement of all styles provided.		
B	15185	Hydronic Pumps	"Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain hydronic pumps."	N/A	30 minutes	Review all pump styles provided, note motor lubrication requirements, present spare mech'l seals for each pump as required by 15185/1.8, and show O&M manual pages which specifically list all installed pump models as per 01730/1.4/H.		
B	15186	Steam Condensate Pumps	"Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain steam condensate pumps."	N/A	30 minutes	Demonstrate alternating & high level control operations, review service procedure for isolating single pump for repairs. Show O&M manual pages which specifically list all installed pump models as per 01730/1.4/H.		
	15202	Ultra Pure Water System	"Provide advanced training (classroom and on-the-job) in the operation and maintenance of the UPW system for Owner's staff for a minimum of 8 hours in the classroom and 8 hours on the job at substantial completion."	16 hours		(PLUMBING SHOP)		
	15203	Deionized Water Piping	"Provide advanced training (classroom and on-the-job) in the operation and maintenance of the DI water system for Owner's staff for a minimum of 8 hours in the classroom and 8 hours on the job at substantial completion."	16 hours		(PLUMBING SHOP)		
G	15205	Process Cooling Water System	"Provide minimum of four hours training and orientation for six of Owner's operators."	4 hours	1 hour *(30 minutes each for factory rep and controls rep)*	Note motor lubrication requirements, present spare mech'l seals for each pump as required by 15185/1.8, and show O&M manual pages which specifically list all installed pump models as per 01730/1.4/H. Show sensor initial calibration records. Review mechanical installation and sequence of operation. Review service procedure for isolating single pump for repairs. Demonstrate control interface (EMS front end).		
	15211	Clean Dry Air and Utility Nitrogen Piping Copper	"Provide minimum of four hours training and orientation for six of Owner's operators."	4 hours		(PLUMBING SHOP)		
	15214	Bulk Gas System	(Classroom & on-site training, and followup visits and supervision as per 15214/1.5/F)	8 hours classroom 64 hours followup		(PLUMBING SHOP)		
	15215	Stainless Steel Piping (Electropolished)	"Provide minimum of four hours training and orientation for six of Owner's operators."	4 hours		(PLUMBING SHOP)		
B	15220	Process Vacuum System	"Provide minimum of four hours training and orientation for six of Owner's operators." "Coordinate demonstration of pump failure modes with controls contractor."	4 hours	1 hour *(30 minutes each for factory rep and controls rep)*	Note motor lubrication and other periodic maintenance requirements, and show O&M manual pages which specifically list all installed pump models as per 01730/1.4/H. Review mechanical installation and sequence of operation. Review service procedure for isolating single pump for repairs. Demonstrate control interface and pump failure modes(EMS front end).		
	15232	Industrial Wastewater Piping	"Provide advanced training (classroom and on-the-job) in the maintenance of the acid wastwater drain and collection system for Owner's staff."	N/A		(PLUMBING SHOP)		
	15233	Industrial Wastewater Treatment System	"To be held at the Owner's site and shall address basic operations, controls, controller programming, software, maintenance and troubleshooting. Training times shall be scheduled with the Owner 2 weeks in advance of training."	N/A		(PLUMBING SHOP)		

Project Number: 950528

UCR PHYSICAL PLANT

OPERATOR TRAINING SCHEDULE - - MULTIDISCIPLINARY RESEARCH BUILDING 1

Session	Division	System	Training Specification	Hours Specified	UCR hours needed	UCR requested agenda	*Date completed*	*UCR Sign-off*
B	15270	Clean Dry Air System	"Provide minimum of four hours training and orientation for six of Owner's operators." "Coordinate demonstration of system failure modes with controls contractor."	4 hours	30 minutes	COMPRESSOR TRAINING Demonstrate operation of dessicant driers. Describe maintenance procedures and review normal/abnormal system indications, pressures etc. *(Controls contractor to demonstrate failure mode and alarms)*		
G	15715	Cleanroom and Lab Make-up Airhandling Units	"Provide services of a Manufacturer's representative to train using Agency's personnel in operating and maintenance procedures. Training shall be scheduled at Using Agency's convenience and shall consist of two four-hour long sessions at Using Agency's facility."	8 hours	2 hours *(1 hour each for factory rep and controls rep)*	Note bearing & motor lubrication and other periodic maintenance requirements, show unit safety device locations, present spare parts (filters, bearings, and damper motor) for each unit as required by 15715/1.9, describe procedures for maintenance replacement of coils, bearings, fans etc. Show O&M documentation of installed fan curves and performance data, review design limits for increasing air volume with existing fan & drive assembly. Review sequence of operation and demonstrate control interface (EMS front end).		
G	15717	Filter Fan Units	"Provide services of a Manufacturer's representative to train using Agency's personnel in operating and maintenance procedures. Training shall be scheduled at Using Agency's convenience and shall consist of two four-hour long sessions at Using Agency's facility."	8 hours	1 hour *(30 minutes each for factory rep and controls rep)*	Note bearing & motor lubrication and other periodic maintenance requirements,demonstrate use of lifting jack provided as per 15717/2.7/B, describe procedures for maintenance replacement of bearings, fans etc. Visit all installed locations. Review sequence of operation and demonstrate control interface (EMS front end). Review "dirty filter" alarm setpoints as defined in 15718/2.2/F. Review calibration procedure for filter pressure sensors.	1/20/2011 2 hours	Tech demonstrated front end interface. No motor maintenance needed. No jack or spare parts provided. No filter alarms or pressure sensors in system. Alerton attended, but interface not completed. UNIT CHANGEOUT WILL REQUIRE A LIFT.
A	15720	Air Handling Units	"Provide instructional time with the Owner's personnel to review...manuals...and routine maintenance." "1 man-day for startup and maintenance instructional time including any auxiliary equipment to make field adjustments."	*not to exceed* 8 hours	2 hours *(1 hour each for factory rep and controls rep)*	Note bearing & motor lubrication and other periodic maintenance requirements, describe procedures for maintenance replacement of bearings, fans etc., show locations of unit safety devices. Review coil performance data. Visit all installed locations. Review sequence of operation and demonstrate control interface (EMS front end).		
A	15763	Fan Coil Units	"Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fan coil units."	N/A	1 hour *(30 minutes each for factory rep and controls rep)*	Note bearing & motor lubrication and other periodic maintenance requirements, describe procedures for maintenance replacement of bearings, fans etc. Visit all installed locations. Review sequence of operation and demonstrate control interface (EMS front end).		
A	15837	Centrifugal Fans	"Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain centrifugal fans."	N/A	30 minutes	Show O&M documentation of installed fan curves and performance data, review design limits for increasing air volume with existing fan & drive assembly. Provide factory design data for maximum rated rpm of all installed fans.		

Project Number: 950528

UCR PHYSICAL PLANT

OPERATOR TRAINING SCHEDULE - - MULTIDISCIPLINARY RESEARCH BUILDING 1

Session	Division	System	Training Specification	Hours Specified	UCR hours needed	UCR requested agenda	*Date completed*	*UCR Sign-off*
C	15840	Air Terminal Units	"Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain air terminal units."	N/A	2 hours *(30 minutes for factory rep and 1.5 hours for controls rep)*	Visit locations for each installed type (VAV, CAV, with & without reheat, etc.) and review installed components and accessories (control valve package, airflow sensor, etc.). Review performance and other data posted on manufacturer's labels. Describe method of disassembly for repair if any. Review all air distribution plans. Review all sequence of operation modes and demonstrate control interface (EMS front end). Demonstrate thermostat operation locally and via front end.		
C, D	15841	Laboratory Airflow Control System	"The contractor shall provide competent instructors to give complete and specific on site instruction...in lieu of a general training course." "Training shall consist of not less than 16 hours for Construction Manager-designated operating personnel." "...additional training shall be available from the Contractor at a future agreeable date that is to be stated in the Contract."	*no less than* 16 hours	2 hours basic orientation Advanced training negotiable	Visit all typical hardware installations, review air distribution and sequence of operation including fume hood controls. Review all as-built documentation. Describe hardware maintenance and repair procedures. Demonstrate control interface (EMS front end). Demonstate return from loss of power to front end interfaces. Describe scope/schedule of contractor-provided 2 year preventive maintenance program as required by 15841/3.4/A. Review system startup report provided under 15841/3.2/B. Demonstrate all system data at operator interface as required by 15841/3.5/A. Demonstrate procedures for LACS data backup and restore. Instruction in advanced troubleshooting of LACS and its data connection to standard EMS.		
E,F	15900	HVAC Instrumentation and Controls	"Provide 8 hours of inspection training during construction showing UCR Physical Plant Personnel the location of control equipment and wiring routing. Schedule with UCR." "Provide 40 hours of on site training."	48 hours	*(Inspection training did not occur)* 4 hours basic orientation Advanced training negotiable	Review all as-built documentation. Visit locations of all supervisory network devices, and review typical installations of field controllers with attention to access and serviceability. Review sequences of operation with reference to 15900/Appendix and with mechanical plans, and discuss revisions since design. Review all equipment schedules and demonstrate editing. Review all graphic screen elements with reference to sequence of operation. Demonstrate procedures for operator override, trend creation and review, alarm acknowledgment and history. Review items coordinated with UCR Physical Plant as required by 15900/1.9/K,L,M.		

SESSION SCHEDULED LENGTH:			SESSION SCHEDULED DATE & TIME:
A	3.5	hours	
B	2.75	hours	
C	2	hours	
D	*TBD*		
E	2	hours	
F	*TBD*		
G	4	hours	

SECTION 01 9113 - GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes general requirements that apply to implementation of commissioning without regard to systems, subsystems, and equipment being commissioned.

B. Related Sections include the following:

1. Division 23 Section "HVAC Commissioning Requirements" for specific requirements for commissioning HVAC systems.
2. Division 26 Section “Electrical Commissioning” for specific requirements for commissioning Electrical systems.

1.2 DEFINITIONS

A. Basis of Design: Basis of Design.

B. CxA: Commissioning Authority.

C. Systems, Subsystems, and Equipment: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, and equipment.

D. TAB: Testing, Adjusting, and Balancing.

1.3 COMMISSIONING TEAM

A. Members appointed by the Design Builder and approved by the University’s Representative: Individuals, each having authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated actions. The commissioning team shall consist of, but not be limited to, representatives of Design Builder, including Project superintendent, architect and engineering design professionals and subcontractors, installers, suppliers, and specialists deemed appriate by the CxA.

B. Members Appointed by University:

1. Representatives of the facility user and operation and maintenance personnel.
2. Architect and engineering design professionals that are not the architects and engineers designers of record.

1.4 UNIVERSITY’S RESPONSIBILITIES

A. Coordinate University’s operation and maintenance personnel and engineering staff, schedule them to participate in commissioning team activities including, but not limited to, the following:

1. Coordination meetings.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Testing meetings.
4. Demonstration of operation of systems, subsystems, and equipment.
5. Review and approve final commissioning documentation.

B. Provide the documentation to the CxA for use in developing the commissioning plan; systems manual; operation and maintenance training plan; and testing plans and checklists.

C. Observe and inspect construction and report progress and deficiencies. In addition to compliance with the Basis of Design, and contract documents, inspect systems and equipment installation for adequate accessibility for maintenance and component replacement or repair.

1.5 DESIGN BUILDER'S RESPONSIBILITIES

A. Provide utility services required for the commissioning process.

B. Design Builder shall assign representatives with expertise and authority to act on behalf of the Design Builder and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in design and construction phase coordination meetings.
2. Participate in maintenance orientation and inspection.
3. Participate in operation and maintenance training sessions.
4. Participate in final review at acceptance meeting.
5. Certify that Work is complete and systems are operational according to the Contract Documents, including calibration of instrumentation and controls.
6. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.

C. Subcontractors shall assign representatives with expertise and authority to act on behalf of subcontractors and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in design and construction phase coordination meetings.
2. Participate in maintenance orientation and inspection.
3. Participate in procedures meeting for testing.
4. Participate in final review at acceptance meeting.
5. Provide schedule for operation and maintenance data submittals, equipment startup, and testing to CxA for incorporation into the commissioning plan. Update schedule on a weekly basis throughout the construction period.
6. Provide information to the CxA for developing construction phase commissioning plan.
7. Participate in training sessions for the University’s operation and maintenance personnel.
8. Provide updated Project Record Documents to the CxA.

9. Gather and submit operation and maintenance data for systems, subsystems, and equipment to the CxA, as specified in Division 01 Section "Operation and Maintenance Data."
10. Provide technicians who are familiar with the construction and operation of installed systems and who shall develop specific test procedures and participate in testing of installed systems, subsystems, and equipment.

D. Provide the Basis of Design documents to the CxA and the University for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

E. Assemble the final commissioning documentation, including the commissioning report and Project Record Documents.

1.6 COMMISSIONING AUTHORITY QUALIFICATIONS

A. The Commissioning Authority (CxA) shall satisfy the following requirements:

1. Have extensive experience in startup and troubleshooting HVAC, refrigeration, hot water heating, chilled water, steam, plumbing, electrical, emergency power, fire alarm, life safety, laboratory services systems of similar complexity to those contained in these documents;
2. Have excellent working knowledge of complex environmental, fire alarm, and electric power control and facility management systems; be capable of understanding control vendors' operating system and control code; be capable of trouble-shooting control code and recommending necessary modifications;
3. Be competent in system design and intent;
4. Be knowledgeable in test and balance of both air and hydronic system;
5. Have excellent communication and writing skills, be highly organized, and be able to work well with both management and trades contractors.
6. A Bachelors degree in Mechanical Engineering and P.E. certification, with extensive practical field experience, is preferred; however, other technical training and experience with extensive practical field experience will be considered.

B. The CxA cannot be financially associated with any of the Division 01 through 33 contractors or vendors prior to engaging in this Contract, to avoid potential conflicts of interest.

C. The University's Representative reserves the right to personally interview the CxA candidate prior to accepting placement in the position. Final approval of the Commissioning Agent will be by the University's Representative.

1.7 CxA'S RESPONSIBILITIES

A. Organize and lead the commissioning team.

B. Prepare a construction phase commissioning plan. Collaborate with Design Builder and with subcontractors to develop test and inspection procedures. Include design changes and scheduled commissioning activities coordinated with overall Project

schedule. Identify commissioning team member responsibilities, by name, firm, and trade specialty, for performance of each commissioning task.

C. Review and comment on submittals from Design Builder for compliance with the Basis of Design, Contract Documents, and construction phase commissioning plan. Review and comment on performance expectations of systems and equipment and interfaces between systems relating to the Basis of Design.

D. Convene commissioning team meetings for the purpose of coordination, communication, and conflict resolution; discuss progress of the commissioning processes. Responsibilities include arranging for facilities, preparing agenda and attendance lists, and notifying participants. The CxA shall prepare and distribute minutes to commissioning team members and attendees within three workdays of the commissioning meeting.

E. At the beginning of the construction phase, conduct an initial construction phase coordination meeting for the purpose of reviewing the commissioning activities and establishing tentative schedules for operation and maintenance submittals; operation and maintenance training sessions; TAB Work; and Project completion.

F. Prepare Project specific test procedures and checklists.

G. Schedule, direct, witness, and document tests, and systems startup.

H. Compile test data, and certificates and include them in the systems manual and commissioning report.

I. Certify date of acceptance and startup for each item of equipment for start of warranty periods.

J. Review Project Record Documents for accuracy. Request revisions to the University for Design Builder to achieve accuracy. Project Record Documents requirements are specified in Division 01 Section "Project Record Documents."

K. Review and comment on operation and maintenance documentation and systems manual outline for compliance with the Basis of Design, and Contract Documents. Operation and maintenance documentation requirements are specified in Division 01 Section "Operation and Maintenance Data."

L. Coordinate operation and maintenance training program with the Design Builder to provide qualified instructors to conduct operation and maintenance training. Operation and maintenance training is specified in Division 01 Section "Demonstration and Training."

M. Video and edit training sessions.

N. Prepare commissioning reports.

1.8 COMMISSIONING DOCUMENTATION

A. Index of Commissioning Documents: CxA shall prepare an index to include storage location of each document.

B. Basis of Design Document: A document, prepared by the University, that records concepts, calculations, decisions, and product selections used to meet and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

C. Commissioning Plan: A document, prepared by CxA, that outlines the schedule, allocation of resources, and documentation requirements of the commissioning process, and shall include, but is not limited to the following:

1. Plan for delivery and review of submittals, systems manuals, and other documents and reports. Identification of the relationship of these documents to other functions and a detailed description of submittals that are required to support the commissioning processes. Submittal dates shall include the latest date approved submittals must be received without adversely affecting commissioning plan.
2. Description of the organization, layout, and content of commissioning documentation (including systems manual) and a detailed description of documents to be provided along with identification of responsible parties.
3. Identification of systems and equipment to be commissioned.
4. Description of schedules for testing procedures along with identification of parties involved in performing and verifying tests.
5. Identification of items that must be completed before the next operation can proceed.
6. Description of responsibilities of commissioning team members.
7. Description of observations to be made.
8. Description of requirements for operation and maintenance training, including required training materials.
9. Description of expected performance for systems, subsystems, equipment, and controls.
10. Schedule for commissioning activities with specific dates coordinated with overall construction schedule.
11. Identification of installed systems, subsystems, and equipment, including design changes that occurred during the construction phase.
12. Process and schedule for documenting changes on a continuous basis to appear in Project Record Documents.
13. Process and schedule for completing prestart and startup checklists for systems, subsystems, and equipment to be verified and tested.
14. Step-by-step procedures for testing systems, subsystems, and equipment with descriptions for methods of verifying relevant data, recording the results obtained, and listing parties involved in performing and verifying tests.

D. Test Checklists: CxA, with assistance of Design Builder, shall develop test checklists for each system, subsystem, or equipment including interfaces and interlocks, and include a separate entry, with space for comments, for each item to be tested. Prepare separate checklists for each mode of operation and provide space to indicate whether

the mode under test responded as required. Provide space for testing personnel to sign off on each checklist. Specific checklist content requirements are specified in Division 23 Section "HVAC Commissioning Requirements." Each checklist, regardless of system, subsystem, or equipment being tested, shall include, but not be limited to, the following:

1. Name and identification code of tested item.
2. Test number.
3. Time and date of test.
4. Indication of whether the record is for a first test or retest following correction of a problem or issue.
5. Dated signatures of the person performing test and of the witness, if applicable.
6. Individuals present for test.
7. Deficiencies.
8. Issue number, if any, generated as the result of test.

E. Certificate of Readiness: Certificate of Readiness shall be signed by Design Builder, Subcontractor(s), Installer(s), and CxA certifying that systems, subsystems, equipment, and associated controls are ready for testing. Completed test checklists signed by the responsible parties shall accompany this certificate.

F. Test and Inspection Reports: CxA shall record test data, observations, and measurements on test checklists. Photographs, forms, and other means appriate for the application shall be included with data. CxA shall compile test and inspection reports and test and inspection certificates and include them in systems manual and commissioning report.

G. Corrective Action Documents: CxA shall document corrective action taken for systems and equipment that fail tests. Include required modifications to systems and equipment and revisions to test procedures, if any. Retest systems and equipment requiring corrective action and document retest results.

H. Issues Log: CxA shall prepare and maintain an issues log that describes design, installation, and performance issues that are at variance with the , Basis of Design, and Contract Documents. Identify and track issues as they are encountered, documenting the status of unresolved and resolved issues.

1. Creating an Issues Log Entry:

    a. Identify the issue with unique numeric or alphanumeric identifier by which the issue may be tracked.
    b. Assign a descriptive title of the issue.
    c. Identify date and time of the issue.
    d. Identify test number of test being performed at the time of the observation, if applicable, for cross-reference.
    e. Identify system, subsystem, and equipment to which the issue applies.
    f. Identify location of system, subsystem, and equipment.
    g. Include information that may be helpful in diagnosing or evaluating the issue.
    h. Note recommended corrective action.

i. Identify commissioning team member responsible for corrective action.
j. Identify expected date of correction.
k. Identify person documenting the issue.

2. Documenting Issue Resolution:

a. Log date correction is completed or the issue is resolved.
b. Describe corrective action or resolution taken. Include description of diagnostic steps taken to determine root cause of the issue, if any.
c. Identify changes to the Basis of Design, or Contract Documents that may require action.
d. State that correction was completed and system, subsystem, and equipment is ready for retest, if applicable.
e. Identify person(s) who corrected or resolved the issue.
f. Identify person(s) documenting the issue resolution.

3. Issues Log Report: On a periodic basis, but not less than for each commissioning team meeting, CxA shall prepare a written narrative for review of outstanding issues and a status update of the issues log. As a minimum, CxA shall include the following information in the issues log and expand it in the narrative:

a. Issue number and title.
b. Date of the identification of the issue.
c. Name of the commissioning team member assigned responsibility for resolution.
d. Expected date of correction.

I. Commissioning Report: CxA shall document results of the commissioning process including unresolved issues and performance of systems, subsystems, and equipment. The commissioning report shall indicate whether systems, subsystems, and equipment have been completed and are performing according to the Basis of Design, and Contract Documents. The commissioning report shall include, but is not limited to, the following:

1. Lists and explanations of substitutions; compromises; variances in the Basis of Design, and Contract Documents; record of conditions; and, if appropriate, recommendations for resolution. This report shall be used to evaluate systems, subsystems, and equipment and shall serve as a future reference document during University's occupancy and operation. It shall describe components and performance that exceed requirements of the Basis of Design, and Contract Documents and those that do not meet requirements of the Basis of Design, and Contract Documents. It may also include a recommendation for accepting or rejecting systems, subsystems, and equipment.
2. and Basis of Design documentation.
3. Commissioning plan.
4. Testing plans and reports.
5. Corrective modification documentation.
6. Issues log.
7. Completed test checklists.

8. Listing of off-season test(s) not performed and a schedule for their completion.

J. Systems Manual: CxA shall gather required information and compile systems manual. Systems manual shall include, but is not limited to, the following:

1. Basis of Design, including system narratives, schematics, and changes made throughout the Project.
2. Project Record Documents as specified in Division 01 Section "Project Record Documents."
3. Final commissioning plan.
4. Commissioning report.
5. Operation and maintenance data as specified in Division 01 Section "Operation and Maintenance Data."

1.9 SUBMITTALS

A. CxA Qualifications Submittal: Submit the Commissioning Authority's resume and sample documents in a timely fashion to the University's Representative for approval; which shall include the following:

1. Education and technical training.
2. Present employment:

   a. Company name and address
   b. Present title and job description
   c. History of employment (include dates and positions held)

3. Relevant work experience:

   a. Job name
   b. Position held
   c. Work history (include dates and positions held)

4. Example of prior building commissioning project performed by the proposed CxA

   a. Submitted project shall be similar in commissioning scope and complexity.
   b. Include construction/commissioning schedule developed by proposed CxA
   c. Include test procedures developed by proposed CxA
   d. Include final report prepared by proposed CxA

B. Commissioning Plan Prefinal Submittal: CxA shall submit hard copies of prefinal commissioning plan to the Design Builder for review by the Design Builder and their Design Professional. Design Builder shall submit five copies to the University's Representative. Present submittal in sufficient detail to evaluate data collection and arrangement process. One copy, with review comments, will be returned to the CxA for preparation of the final construction-phase commissioning plan.

C. Commissioning Plan Final Submittal: CxA shall submit hard copies and electronically formatted information of final commissioning plan to the Design Builder. Design

Builder shall submit two hard copies and one disc to the University. The final submittal must address previous review comments. The final submittal shall include a copy of the prefinal submittal review comments along with a response to each item.

D. Test Checklists and Report Forms: CxA shall submit sample checklists and forms to Design Builder quality-control manager and subcontractors for review and comment. Submit three copies of each checklist and report form.

E. Corrective Action Documents: CxA shall submit corrective action documents pertaining to installation and start up of systems. CxA shall also submit recommendations to better operation and maintenance of the systems, if applicable.

F. Prefinal Commissioning Report Submittal: CxA shall submit five hard copies of the prefinal commissioning report CxA shall deliver three copies to the University, and one copy to the Design Builder. One copy, with review comments, will be returned to the CxA for preparation of final submittal.

G. Final Commissioning Report Submittal: CxA shall submit hard copies and electronically formatted information of the final commissioning report. Design Builder shall deliver four hard copies and two set of discs to the University. The final submittal must address previous review comments and shall include a copy of the prefinal submittal review comments along with a response to each item.

1.10 QUALITY ASSURANCE

A. Training Instructor Qualifications: Factory-authorized service representatives, experienced in training, operation, and maintenance procedures for installed systems, subsystems, and equipment.

B. Test Equipment Calibration: Comply with test equipment manufacturer's calibration procedures and intervals. Recalibrate test instruments immediately whenever instruments have been repaired following damage or dropping. Affix calibration tags to test instruments. Instruments shall have been calibrated within six months prior to use.

1.11 COORDINATION

A. Coordinating Meetings: CxA shall conduct monthly coordination meetings of the commissioning team to review progress on the commissioning plan, to discuss scheduling conflicts, and to discuss upcoming commissioning process activities. Coordination meetings shall start at least 8 months prior to project completion.

B. Pretesting Meetings: CxA shall conduct pretest meetings of the commissioning team to review startup procedures, biweekly testing procedures, testing personnel and instrumentation requirements, and manufacturers' authorized service representative services for each system, subsystem, equipment, and component to be tested. Pretest meetings shall start at least 4 months prior to project completions

C. Testing Coordination: CxA shall coordinate sequence of testing activities weekly to accommodate required quality-assurance and -control services with a minimum of

delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

D. Manufacturers' Field Services: CxA shall coordinate services of manufacturers' field services.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 OPERATION AND MAINTENANCE TRAINING REQUIREMENTS

A. Training Preparation Conference: Before operation and maintenance training, CxA shall convene a training preparation conference to include the University's operation and maintenance personnel, Design Builder, and subcontractors. In addition to requirements specified in Division 01 Section "Demonstration and Training," perform the following:

1. Review the Basis of Design.
2. Review installed systems, subsystems, and equipment.
3. Review instructor qualifications.
4. Review instructional methods and procedures.
5. Review training module outlines and contents.
6. Review course materials (including operation and maintenance manuals).
7. Inspect and discuss locations and other facilities required for instruction.
8. Review and finalize training schedule and verify availability of educational materials, instructors, audiovisual equipment, and facilities needed to avoid delays.
9. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

B. Training Modules: Develop an instruction program that includes individual training modules for each system, subsystem, and equipment as specified in Division 01 Section "Demonstration and Training."

END OF SECTION 01 9113