
CONSTRUCTION DOCUMENTS

FOR

Infrastructure Renewal Project Phase 1C

FM170115L/986080

UNIVERSITY OF CALIFORNIA

SANTA BARBARA

FACILITIES MANAGEMENT

BUILDING 439

COUNTY OF SANTA BARBARA

STATE OF CALIFORNIA

November 2016

CERTIFICATION

NAME OF PROJECT: INFRASTRUCTURE RENEWAL PROJECT PHASE 1C

BIDDING DOCUMENTS PREPARED BY:

STANTEC CONSULTING SERVICES, INC.

111 E. VICTORIA STREET

SANTA BARBARA, CA 93101

Signed:  Date: 10/11/16
(Signature of an Officer of the Firm Named Above) (Date)

TYPED NAME: STEPHEN WANG

TITLE: PROJECT ENGINEER

Certification:



(Affix professional registration stamp of the person named above with signature and expiration date.)

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ADVERTISEMENT FOR BIDS

Subject to conditions prescribed by the University of California, Santa Barbara, sealed bids for a Lump Sum Contract are invited for the following Work:

Project Name: Infrastructure Renewal Project Phase 1C

University Project No. FM170115L/986080

DESCRIPTION OF WORK: Provide all labor and materials necessary for the complete installation of storm drain and sea water lines within the Main Campus, as indicated on the drawings. Contractor shall coordinate all work schedules, traffic control plans and site fencing details in advance as to not have multiple construction disruptions in different quadrants of the Campus. Site work associated with the project consists of removal and replacement of asphalt concrete, Portland cement concrete, irrigation and minor landscaping.

Estimated Construction Cost: \$2,800,000.00

Bidding Documents will be available to Bidders on November 2, 2016 at 4:00 PM and will be issued via the University's online planroom at <http://ucsbplanroom.com/>. Once registered on the UCSB planroom website, prospective bidders may view or download the Bidding Documents for free.

As an alternative, interested parties may purchase a hard set copy from CyberCopy for a non-refundable fee of the actual cost of reproduction. Arrangements for payment and receipt of all hard copy sets should be made directly with CyberCopy:

CyberCopy
504 N. Milpas Street
Santa Barbara, California 93103
Ph: (805) 884-6155 Fax: (805) 884-5955

NOTE: It is the sole responsibility of prime contractors to register at <http://ucsbplanroom.com/> in order to be able to receive and view project updates, addenda, and full versions of the construction documents. The prime contractors are responsible to update their user profile on the University's planroom site, in order to receive ongoing project updates and notifications.

A **mandatory** Pre-Bid Conference and **mandatory** Pre-Bid Job Walk will be conducted on November 9, 2016 beginning promptly at 1:30 PM. (There is no grace period.) Participants shall meet at:

Facilities Management, Building 594, Room 1020
University of California, Santa Barbara
Santa Barbara, California

Only bidders who participate in both the Conference and the Job Walk in their entirety, will be allowed to bid on the Project as prime contractors.

Please note: Bidders are advised that there may be traffic congestion and parking may be difficult. Bidders should allow ample time to drive to the above location in heavy traffic, find a parking space, walk to the building, and arrive in the designated Meeting Room prior to the required time. Any prospective Bidder arriving after the above designated starting time shall be disqualified from submitting a bid for this project.

For further information, contact University's Representative Telli Foster at (805) 893-5322.

Bid Deadline: Sealed bids must be received on or before 2:30 PM on November 22, 2016

Sealed Bids will be received only at: Contracting Services
Facilities Management, Building #439
Door #E, Reception Counter
University of California, Santa Barbara
Santa Barbara, California 93106-1030

Bid Security in the amount of 10% of the Lump Sum Base Bid shall accompany each Bid. The Surety issuing the Bid Bond shall be, on the Bid Deadline, an admitted surety insurer (as defined in California Code of Civil Procedure Section 995.120).

The successful Bidder will be required to have the following California current and active contractor's license at the time of submission of the Bid:

<u>General Engineering</u>	<u>A</u>
License Type	License Code

Every effort will be made to ensure that all persons shall have equal access to contracts and other business opportunities with the University within the limits imposed by law or University's policy. Each Bidder may be required to show evidence of its equal employment opportunity policy.

The successful Bidder 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. No contractor or subcontractor may be listed on a Bid for this project unless registered with the Department of Industrial Relations ("DIR") pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded any portion of this project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

Advertisement Posted: 11/01/16

Please visit our website at <http://facilities.ucsb.edu>

PROJECT DIRECTORY

Project Name: Infrastructure Renewal Project Phase 1C

Project Number: FM170115L/986080

Location: UCSB Campus

University: The Regents of the University of California

University's
Representative: Telli Foster
University of California
Santa Barbara, CA 93106-1030
Telephone: (805) 893-5322 FAX: (805) 893-8592

ALL BIDDING INQUIRIES SHALL BE DIRECTED ONLY TO UNIVERSITY REPRESENTATIVE

University's Assoc. Director
Contracting Services: Greg Moore
University of California, Santa Barbara
Facilities Management, Building 439
Santa Barbara, CA 93106-1030
Telephone: (805) 893-3298 FAX: (805) 893-8592

University's Representative's:
Consultants: Stantec Consulting Services, Inc.
111 East Victoria Street
Santa Barbara, CA 93101
Telephone: (805) 963-9532

Address for Stop Notices: Lynn Tran
University of California, Santa Barbara
Student Affairs & Administrative Services Bldg. 568, Room 3201
Accounting Department
Santa Barbara, California 93106

Address for Demand
for Arbitration: Western Case Management Center
6795 N. Palm Avenue, 2nd Floor
Fresno, California 93704

A copy of the Demand for Arbitration must be sent to:

Chair, Construction Review Board
University of California
Office of the General Counsel
1111 Franklin Street, 8th Floor
Oakland, CA 94607-5200

INSTRUCTIONS TO BIDDERS

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ARTICLE 1
DEFINITIONS

1.1 Except as otherwise specifically provided, definitions set forth in the General Conditions or in other Contract Documents are applicable to all Bidding Documents.

1.2 The term “Addenda” means written or graphic instruments issued by University prior to the Bid Deadline which modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections.

1.3 The term “Alternate” means a proposed change in the Work, as described in the Bidding Documents which, if accepted, may result in a change to either the Contract Sum or the Contract Time, or both.

1.4 The term “Bid Deadline” means the date and time on or before which Bids must be received, as designated in the Advertisement for Bids and which may be revised by Addenda.

1.5 The term “Bidder” means a person or firm that submits a Bid.

1.6 The term “Bidding Documents” means the construction documents prepared and issued for bidding purposes including all Addenda thereto.

1.7 The term “Estimated Quantity” means the estimated quantity of an item of Unit Price Work.

1.8 As used in these Instructions to Bidders, the term “Facility” means the University's Facility office issuing the Bidding Documents.

1.9 The term “Lump Sum Base Bid” means the sum stated in the Bid for which Bidder offers to perform the Work described in the Bidding Documents, but not including Unit Price items or Alternates.

1.10 The term “Planholder” means a person or entity known by the Facility to have received a complete set of Bidding Documents and who has provided a street address for receipt of any written pre-bid communications.

1.11 The term “Unit Price” means an amount stated in the Bid for which Bidder offers to perform an item of Unit Price Work for a fixed price per unit of measurement.

1.12 As used in these Instructions to Bidders, the term “Business Day” means any day other than a Saturday, a Sunday, and the holidays specified herein, and to the extent provided herein, if the Facility or applicable office of the University is closed for the whole of any day, insofar as the business of that office is concerned, that day shall be considered as a holiday for the purposes of computing time in these Instructions to Bidders. Holidays include January 1st, the third Monday in January, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, December 25th, and every day designated by the University as a holiday.

ARTICLE 2

BIDDER'S REPRESENTATIONS

2.1 Bidder, by making a Bid, represents that:

2.1.1 Bidder has read, understood, and made the Bid in accordance with the provisions of the Bidding Documents.

2.1.2 Bidder has visited the Project site and is familiar with the conditions under which the Work is to be performed and the local conditions as related to the requirements of the Contract Documents.

2.1.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.

2.1.4 At the time of submission of the Bid, Bidder and all Subcontractors, regardless of tier, have the appropriate current and active licenses issued by the State of California Contractor's State License Board for the Work to be performed and any licenses specifically required by the Bidding Documents. If Bidder is a joint venture, at the time of submission of the Bid, Bidder shall have the licenses required by the preceding sentence in the name of the joint venture itself. The State of California Business and Professions Code, Division 3, Chapter 9, known as the “Contractor's License Law,” establishes licensing requirements for contractors.

2.1.5 Bidder has read and shall abide by the nondiscrimination requirements contained in the Bidding Documents.

2.1.6 Bidder has the expertise and financial capacity to perform and complete all obligations under the Bidding Documents.

2.1.7 The person executing the Bid Form is duly authorized and empowered to execute the Bid Form on behalf of Bidder.

2.1.8 Bidder is aware of and, if awarded the Contract, will comply with Applicable Code Requirements in its performance of the Work.

ARTICLE 3

BIDDING DOCUMENTS

3.1 COPIES

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement for Bids for the deposit sum stated therein, if any. If a deposit is required, it will only be refunded if Bidder returns the Bidding Documents in good condition no later than 60 days after the Bid Deadline unless otherwise provided in Supplementary Instructions to Bidders. The cost of replacement of missing or damaged documents may be deducted from the deposit. The Bidder to whom the Contract is awarded may retain the Bidding Documents and will be refunded its deposit.

3.1.2 Bidders shall use a complete set of Bidding Documents in preparing Bids.

3.1.3 University makes copies of the Bidding Documents available, on the above terms, for the sole purpose of obtaining Bids for the Work and does not confer a license or grant permission for any other use of the Bidding Documents.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

3.2.1 Bidder shall, before submitting its Bid, carefully study and compare the components of the Bidding Documents and compare them with any other work being bid concurrently or presently under construction which relates to the Work for which the Bid is submitted; shall examine the Project site, the conditions under which the Work is to be performed, and the local conditions; and shall at once report to University's Representative errors, inconsistencies, or ambiguities discovered. If Bidder is awarded the Contract, Bidder waives any claim arising from any errors, inconsistencies or ambiguities, that Bidder, its subcontractors or suppliers, or any person or entity under Bidder on the Contract became aware of, or reasonably should have become aware of, prior to Bidder's submission of its Bid.

3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be addressed only to the person or firm designated in the Supplementary Instructions to Bidders.

3.2.3 Clarifications, interpretations, corrections, and changes to the Bidding Documents will be made by Addenda issued as provided in Article 3.5. Clarifications, interpretations, corrections, and changes to the Bidding Documents made in any other manner shall not be binding and Bidders shall not rely upon them.

3.3 PRODUCT SUBSTITUTIONS

3.3.1 No substitutions will be considered prior to award of Contract. Substitutions will only be considered after award of the Contract and as provided for in the Contract Documents.

3.4 SUBCONTRACTORS

3.4.1 Each Bidder shall list in the Bid Form all first-tier Subcontractors that will perform work, labor or render such services as defined in Article 9 of the Bid Form. The Bid Form contains spaces for the following information when listing Subcontractors: (1) portion of the Work; (2) name of Subcontractor; (3) city of Subcontractor's business location. The failure to list, on the Bid Form, any one of the items set forth above will result in the University treating the Bid as if no Subcontractor was listed for that portion of the Work and Bidder will thereby represent to University that Bidder agrees that it is fully qualified to perform that portion of the Work and shall perform that portion of the Work.

3.4.2 Subcontractors listed in the Bid Form shall only be substituted after the Bid Deadline with the written consent of University and in accordance with the State of California "Subletting and Subcontracting Fair Practices Act."

3.5 ADDENDA

3.5.1 Addenda will be issued only by University and only in writing. Addenda will be identified as such and will be mailed or delivered to all Planholders. At its sole discretion, the University may elect to deliver Addenda via facsimile to Planholders who have provided a facsimile number for receipt of Addenda.

3.5.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for inspection.

3.5.3 Addenda will be issued such that Planholders should receive them no later than 3 full business days prior to the Bid Deadline. Addenda withdrawing the request for Bids or postponing the Bid Deadline may be issued anytime prior to the Bid Deadline.

3.5.4 Each Bidder shall be responsible for ascertaining, prior to submitting a Bid, that it has received all issued Addenda.

3.6 BUILDER'S RISK PROPERTY INSURANCE

3.6.1 University will provide builder's risk property insurance, subject to the deductibles in the policy as required by the General Conditions if the Contract Sum exceeds \$200,000 at the time of award and the requirements of the Project are not excluded by such coverage. A summary of the provisions of the policy is included as an Exhibit to the Contract. Bidder agrees that the University's provision of builder's risk property insurance containing said provisions 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.

ARTICLE 4

PRE-BID CONFERENCE

4.1 Bidder shall attend the Pre-Bid Conference at which the requirements of the Bidding Documents are reviewed by University, comments and questions are received from Bidders, and a Project site visit is conducted. University requires all Pre-Bid Conference attendees to arrive for the meeting on time and to sign an attendance list, which in turn is used to determine if Bidders meet this requirement. Any Bidder not attending the Pre-Bid Conference in its entirety will be deemed to have not complied with the requirements of the Bidding Documents and its Bid will be rejected.

ARTICLE 5

BIDDING PROCEDURES

5.1 FORM AND STYLE OF BIDS

5.1.1 Bids shall be submitted on the Bid Form included with the Bidding Documents. Bids not submitted on the University's Bid Form shall be rejected.

5.1.2 The Bid Form shall be filled in legibly in ink or by typewriter. All portions of the Bid Form must be completed and the Bid Form must be signed before the Bid is submitted. Failure to comply with the requirements of this Article 5.1.2 will result in the Bid being rejected as nonresponsive.

5.1.3 Bidder's failure to submit a price for any Alternate or Unit Price will result in the Bid being considered as nonresponsive. If Alternates are called for and no change in the Lump Sum Base Bid is required, indicate "No Change" by marking the appropriate box.

5.1.4 Bidder shall make no stipulations on the Bid Form nor qualify the Bid in any manner.

5.1.5 The Bid Form shall be signed by a person or persons legally authorized to bind Bidder to a contract. Bidder's Representative shall sign and date the Declaration included in the Bid Form. Failure to sign and date the declaration will cause the Bid to be rejected.

5.2 BID SECURITY

5.2.1 Each Bid shall be accompanied by Bid Security in the amount of 10% of the Lump Sum Base Bid as security for Bidder's obligation to enter into a Contract with University on the terms stated in the Bid Form and to furnish all items required by the Bidding Documents. Bid Security shall be a Bid Bond on the form provided by University and included herein, or a certified check made payable to "The Regents of the University of California." When a Bid Bond is used for Bid Security, failure to use University's Bid Bond form will result in the rejection of the Bid. Bidder must use the Bid Bond form provided by the University or an exact, true and correct photocopy of such form. The Bid Bond form may not be retyped, reformatted, transcribed onto another form, or altered in any manner except for the purpose of completing the form.

5.2.2 If the apparent lowest responsible Bidder fails to sign the Agreement and furnish all items required by the Bidding Documents within the time limits specified in these Instructions to Bidders, University may reject such Bidder's Bid and select the next apparent lowest responsible Bidder until all Bids have been exhausted or University may reject all Bids. The Bidder whose Bid is rejected for such failure(s) shall be liable for and forfeit to University the amount of the difference, not to exceed the amount of the Bid Security, between the amount of the Bid of the Bidder so rejected and the greater amount for which University procures the Work.

5.2.3 If a Bid Bond is submitted, the signature of the person executing the Bid Bond on behalf of the surety must be notarized. If an attorney-in-fact executes the Bid Bond on behalf of the surety, a copy of the current power of attorney bearing the notarized signature of the appropriate corporate officer shall be included with the Bid Bond. Additionally, the surety issuing the Bid Bond shall be, on the Bid Deadline, an admitted surety insurer (as defined in the California Code of Civil Procedure Section 995.120).

5.2. Bid Security will be returned after the contract has been awarded. Notwithstanding the preceding, if a Bidder 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 Bidding Documents, the University will retain that Bidder'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 certified check, the University will negotiate said check and after deducting its damages, return any balance to Bidder.

5.3 SUBMISSION OF BIDS

5.3.1 The Bid Form, Bid Security, and all other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the office designated in the Supplementary Instructions to Bidders for receipt of Bids. The envelope shall be identified with the Project name, Bidder's name and address, and, if applicable, the designated portion of the Project for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

5.3.2 Bids shall be deposited at the designated location on or before the Bid Deadline. A Bid received after the Bid Deadline will be returned to Bidder unopened.

5.3.3 Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

5.3.4 Oral, telephonic, facsimile, or telegraphic Bids are invalid and will not be accepted.

5.4 MODIFICATION OR WITHDRAWAL OF BID

5.4.1 Prior to the Bid Deadline, a submitted Bid may be modified or withdrawn by notice to the Facility receiving Bids at the location designated for receipt of Bids. Such notice shall be in writing over the signature of Bidder and, in order to be effective, must be received on or before the Bid Deadline. A modification so made shall be worded so as not to reveal the amount of the original Bid.

5.4.2 A withdrawn Bid may be resubmitted on or before the Bid Deadline, provided that it then fully complies with the Bidding Requirements.

5.4.3 Bid Security shall be in an amount sufficient for the Bid as modified or resubmitted.

5.4.4 Bids may not be modified, withdrawn, or canceled within 60 days after the Bid Deadline unless otherwise provided in Supplementary Instructions to Bidders.

ARTICLE 6

CONSIDERATION OF BIDS

6.1 OPENING OF BIDS

6.1.1 Bids which have the required identification as stipulated in Article 5.3.1 and are received on or before the Bid Deadline will be opened publicly.

6.2 REJECTION OF BIDS

6.2.1 University will have the right to reject all Bids.

6.2.2 University will have the right to reject any Bid not accompanied by the required Bid Security or any other item required by the Bidding Documents, or a Bid which is in any other way incomplete or irregular.

6.3 AWARD

6.3.1 University will have the right, but is not required, to waive nonmaterial irregularities in a Bid. If the University awards the Contract, it will be awarded to the responsible Bidder submitting the lowest responsive Bid as determined by University and who is not rejected by University for failing or refusing, within 10 days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents.

6.3.2 University will have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents. The opening of Bids and evaluation of Alternates will be conducted in accordance with a procedure that, at University's option, either (i) prescribes, prior to the time of Bid opening, the order in which Alternates will be selected or (ii) prevents, before the determination of the apparent low Bidder has been made, information that would identify any of the Bidders from being revealed to the representative of the University selecting the Alternates to be used in determining the low Bidder. After determination of the apparent low Bidder has been made, University will publicly disclose the identity of each Bidder that submitted a Bid and the amount of each such Bid.

6.3.3 University will determine the low Bidder on the basis of the sum of the Lump Sum Base Bid plus all Unit Prices multiplied by their respective Estimated Quantities as stated in the Bid Form, if any, plus the daily rate for Compensable Delay multiplied by the "multiplier" as stated in the Bid Form, plus the amounts of all Alternates to be included in the Contract Sum at the time of award. The Contract Sum will be the sum of the Lump Sum Base Bid and the additive or deductive amounts for all Alternates that University has selected to be included in the Contract Sum as of the time of award.

6.3.4 The University will post the Bid results in a public place at the address where the Bids are received (unless another address is specified in the Bidding Documents).

6.3.5 University will select the apparent lowest responsive and responsible Bidder and notify such Bidder on University's form within 50 days (unless the number of days is modified in Supplementary Instructions to Bidders) after the Bid Deadline or reject all Bids. Within 10 days after receipt of notice of selection as the apparent lowest responsive and responsible Bidder, Bidder shall submit to University all of the following items:

- .1 Three originals of the Agreement signed by Bidder.
- .2 Three originals of the Payment Bond required under Article 11 of the General Conditions.
- .3 Three originals of the Performance Bond required under Article 11 of the General Conditions.
- .4 Certificates of Insurance on form provided by University required under Article 11 of the General Conditions.
- .5 Name of, qualifications of, and references for the Superintendent proposed for the Work.
- .6 Names of all Subcontractors, with their addresses, telephone number, facsimile number, contact person, portion of the Work and designation of any Subcontractor as a Small Business Enterprise (SBE), Disadvantaged Business Enterprise (DBE), Women-owned Business Enterprise (WBE) and

Disabled Veteran Business Enterprise (DVBE) on Report of Subcontractor Information in the form contained in the Exhibits. Evidence, as required by University, of the reliability and responsibility of the proposed Subcontractors such as statements of experience, statements of financial condition, and references.

.7 Preliminary Contract Schedule as required under Article 3 of the General Conditions.

.8 If Bidder wishes to utilize securities in lieu of retention beginning with the first Application for Payment, - Selection of Retention Options accompanied by a completed Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention in the form contained in the Exhibits.

.9 Cost Breakdown as required by Article 9 of the General Conditions.

6.3.6 Prior to award of the Contract, University will notify Bidder in writing, if University, after due investigation, objects to a Subcontractor or Superintendent proposed by Bidder, in which case Bidder shall propose a substitute acceptable to University. Substitution of Superintendent shall be made in accordance with Article 3 of the General Conditions. Substitution of a Subcontractor shall be made in accordance with Article 5 of the General Conditions. Failure of University to object to a proposed Superintendent or Subcontractor prior to award shall not preclude University from requiring replacement of Superintendent or any Subcontractor based upon information received subsequent to award, information which cannot be properly evaluated prior to award due to time constraints, or information relating to a failure to comply with the requirements of the Contract.

6.3.7 If Bidder submits three originals of the signed Agreement and all other items required to be submitted to University within 10 days after receipt of notice of selection as the apparent lowest responsive and responsible Bidder, and if all such items comply with the requirements of the Bidding Documents and are acceptable to University, University will award the Contract to Bidder by signing the Agreement and returning a signed copy of the Agreement to Bidder.

6.3.8 If University consents to the withdrawal of the Bid of the apparent lowest responsive and responsible Bidder, or the apparent lowest responsive and responsible Bidder fails or refuses to sign the Agreement or submit to University all of the items required by the Bidding

Documents, within 10 days after receipt of notice of selection, or that Bidder is not financially or otherwise qualified to perform the Contract, University may reject such Bidder's Bid and select the next apparent lowest responsible Bidder, until all Bids are exhausted, or reject all Bids. Any Bidder whose Bid is rejected because the Bidder has failed or refused, within 10 days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents, shall be liable to the University for all resulting damages.

ARTICLE 7

BID PROTEST

7.1 FILING A BID PROTEST

7.1.1 Any Bidder, person, or entity may file a Bid protest. The protest shall specify the reasons and facts upon which the protest is based and shall be filed in writing with the Facility not later than 3 business days after:

- .1 if the Bid Form does not contain any Alternate(s), the date of the Bid opening;
- .2 if the Bid Form contains any Alternate(s), the date of posting in a public place of Bid results.

7.1.2 If a Bid is rejected by the Facility, and such rejection is not in response to a Bid protest, any Bidder, person or entity may dispute that rejection by filing a Bid protest (limited to the rejection) within 3 business days of the rejected Bidder's receipt of the notice of rejection.

7.2 RESOLUTION OF BID CONTROVERSY

7.2.1 Facility will investigate the basis for the Bid protest and analyze the facts. Facility will notify Bidder 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 Bidder an opportunity to rebut such evidence, and permit Bidder 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 copy of the decision will be furnished to the protestor, the Bidder whose Bid is the subject of the Bid protest, and all Bidders affected by the decision. As used in this Article 7, a Bidder is affected by the decision on a Bid protest if a decision on the protest could have resulted in the Bidder not being the lowest responsible and responsive Bidder for the Contract.

7.2.2 Notwithstanding the provisions of Article 7.2.1, 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 Article 7.2.4.

7.2.3 Bidder whose Bid is the subject of the protest, all Bidders 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, by close of business not later than the 3rd day following appellant's receipt of the written decision of Facility, at the following address:

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

Attention: Assistant Director, Design & Construction Policy

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.

7.2.4 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.

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1. Contract Time: ninety (90) calendar days.
2. Requests for clarification or interpretation of the Bidding Documents shall be addressed only to the University Representative:

Telli Foster
University of California
Santa Barbara, CA 93106-1030
Telephone: (805) 893-5322 FAX: (805) 893-8592

3. The Pre-Bid Conference will be conducted on November 9, 2016 starting at 1:30 PM, at:

Facilities Management
Facilities Management Learning Center, Building 594, Room 1020
University of California, Santa Barbara
Santa Barbara, California 93106-1030

Attendance at the Pre-Bid Conference is mandatory.

Please note that any prospective Bidder arriving after the above-designated starting time shall be disqualified from submitting a bid for this project.

4. Bids will be received on or before the Bid Deadline: 2:30 PM, November 22, 2016, and only at:

Contracting Services
Facilities Management, Building 439
Door E, Reception Counter
University of California, Santa Barbara
Santa Barbara, California 93106-1030

5. Bids will be opened at:

Facilities Management
Building 439
University of California, Santa Barbara
Santa Barbara, California 93106-1030

6. Contractor will be assessed as liquidated damages the sum of one thousand Dollars (\$1,000.00) for each day the Work remains incomplete beyond the expiration of the Contract Time.
After Substantial Completion, the rate for liquidated damages shall be reduced to the sum of \$800.00 per day.

See Article 5 of the Agreement for detailed requirements.

7. INSTRUCTIONS TO BIDDERS (ARTICLE 3 - "BIDDING DOCUMENTS"):

Amend paragraph 3.4.1 to read as follows:

"Each Bidder shall list in the Bid Form all first-tier Subcontractors that will perform work, labor or render such services as defined in Article 9 of the Bid Form. The Bid Form contains spaces for the following information when listing Subcontractors: (1) portion of the Work; (2) name of Subcontractor; (3) city of Subcontractor's business location; and (4) License No. of Subcontractor. Failure to list, on the Bid Form, any one of the first three (3) items set forth above will result in the University treating the Bid as if no Subcontractor was listed for the Work Activity and Bidder will thereby represent to University that Bidder agrees that it is fully qualified to perform that portion of the Work and shall perform that Work."

8. INSTRUCTIONS TO BIDDERS (ARTICLE 5 - "BID SECURITY"):

Amend paragraph 5.2.1 to read as follows:

"Each Bid shall be accompanied by Bid Security in the amount of 10% of the Lump Sum Base Bid as security for Bidder's obligation to enter into a Contract with University on the terms stated in the Bid Form and to furnish all items required by the Bidding Documents. Bid Security shall be a Bid Bond on the form provided by University and included herein, a cashiers check, or a certified check made payable to "The Regents of the University of California." When a Bid Bond is used for Bid Security, failure to use University's Bid Bond form will result in the rejection of the Bid. Bidder must use the Bid Bond form provided by the University or an exact, true and correct photocopy of such form. The Bid Bond form may not be retyped, reformatted, transcribed onto another form, or altered in any manner except for the purpose of completing the form. "

9. INSTRUCTIONS TO BIDDERS (ARTICLE 6- "CONSIDERATION OF BIDS"):

A. Amend paragraph 6.3.3 to read as follows:

"University will determine the low Bidder on the basis of the sum of the Lump Sum Base Bid plus all Unit Prices multiplied by their respective Estimated Quantities as stated in the Bid Form, if any, plus the daily rate for compensable delay multiplied by the "multiplier" as stated in the Bid Form. The Contract Sum will be the sum of the Lump Sum Base Bid."

10. INSTRUCTIONS TO BIDDERS (ARTICLE 6- "CONSIDERATION OF BIDS"):

A. Amend paragraph 6.3.5 to read as follows:

- ".1 **Two** originals of the Agreement signed by Bidder."
- ".2 **Two** originals of the Payment Bond."
- ".3 **Two** originals of the Performance Bond."

B. Amend paragraph 6.3.7 to read as follows:

" 6.3.7 If Bidder submits two originals of the signed Agreement and all other items required to be submitted to University within 10 days after receipt of notice of selection as the apparent lowest responsible Bidder, and if all such items comply with the requirements of the Bidding Documents and are acceptable to University, University will award the Contract to Bidder by signing the Agreement and returning a signed copy of the Agreement to Bidder."

11. PARKING OF CONTRACTOR'S AND EMPLOYEE'S VEHICLES:

The applicable parking fees shall be paid by the Contractor for each space. Parking permits shall be obtained from the Parking Services Office. The Contractor shall fence or barricade assigned areas to designate the area to be used for construction personnel parking (where/if applicable). The Contractor may park material delivery vehicles at or near the buildings as required to handle removed or new materials. Vehicles shall not be parked where they will block or interfere with normal pedestrian or vehicular traffic. Parking fees are subject to change.

Personal vehicles of Contractor's employees shall not be parked in established parking lots or space without payment of established parking fees. Vehicles without proper parking passes or Contractor's temporary passes will be issued tickets by University parking service. Park in assigned areas only.

12. DIR REGISTRATION REQUIREMENT

- A. All contractors and subcontractors interested in working on public works/prevaling wage projects in the State of California must register with the Department of Industrial Relations (DIR) prior to being awarded such work. Accordingly, registration with the DIR is required prior to your firm entering into a construction agreement with the University or working as a subcontractor on a University project.
- B. Contractors and subcontractors may complete the DIR registration process online, which requires payment of an annual \$300 fee and conformance with certain minimum qualification requirements (e.g., current CSLB license and WC coverage, no unpaid wage assessments or penalties).
- C. To register for the first time, or renew your expired registration, please click the following hyperlink link (or enter it in your preferred browser), scroll down to "Contractor Registration" and follow the relevant directions and prompts provided: <http://www.dir.ca.gov/Public-Works/PublicWorks.html>.
- D. The University confirms whether contractors and its subs are actually registered with the DIR by referencing the statewide [public works contractor registration listing](#) - a searchable database developed by the DIR. Your firm **MUST** be included on that listing to be deemed eligible for award of a University construction contract. Bidders who are not registered at the time of bid will be deemed non-responsive. Similarly, subcontractors will not be permitted to perform construction services on a University project unless it was registered with the DIR prior to the bid deadline date.

INFORMATION AVAILABLE TO BIDDERS

The following information is made available for the convenience of bidders and is not a part of the Contract. The information is provided subject to the provisions of Article 3 of the General Conditions.

1. **Guide to Parking Service and Regulations**

By Transportation and Parking Services

University of California, Santa Barbara

Available on line at <http://www.tps.ucsb.edu>

2. **UCSB, Design, Construction & Physical Facilities**

<http://facilities.ucsb.edu>

3. **Prevailing Wage Information:** A Bidder can obtain prevailing wage information through the internet at www.dir.ca.gov or by contacting University's principal Facility office.

4. **Safety in the Laboratory: Information for Contractors and Physical Facilities Personnel Working in UCSB Labs**

<http://www.ehs.ucsb.edu/units/labsfty/labrsc/pdfs/lspfinlabs.pdf>

5. **Model Hazard Communications Program, MSDS requirements, Appendix A**

http://www.ehs.ucsb.edu/units/ih/ihrsc/hcp/hcpappen_a.html

The Information Available to Bidders is provided solely for the bidders' convenience and does not relieve the bidders of the responsibility for determining the accuracy of the information provided.

BID FORM

FOR: Infrastructure Renewal Project Phase 1C

FM170115L/986080

UNIVERSITY OF CALIFORNIA
SANTA BARBARA
SANTA BARBARA, CALIFORNIA

November 2016

BID TO: University of California, Santa Barbara
Facilities Management, Building 439
Door E, Reception Counter
Santa Barbara, CA 93106
(805)893-3298

BID FROM:

(Name of Bidder)_____
(Address)_____
(City) (State) (Zip)_____
(Telephone Number)_____
(Fax Number)_____
(Email Address)

DATE BID SUBMITTED

(Date)

Note: All portions of this Bid Form must be completed and the Bid Form must be signed before the Bid is submitted. Failure to do so may result in the BID being rejected as non-responsive.

1.0 BIDDER'S REPRESENTATIONS

Bidder, represents that a) Bidder and all Subcontractors, regardless of tier, has the appropriate current and active Contractor's licenses required by the State of California and the Bidding Documents; b) it has carefully read and examined the Bidding Documents for the proposed Work on this Project; c) it has examined the site of the proposed Work and all Information Available to Bidders; d) it has become familiar with all the conditions related to the proposed Work, including the availability of labor, materials, and equipment. Bidder 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. Bidder further agrees that it will not withdraw its Bid within 60 days after the Bid Deadline, and that, if it is selected as the apparent lowest responsive and responsible Bidder, 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 Bidding Documents. If awarded the Contract, Bidder agrees to complete the proposed Work within ninety (90) calendar days after the date of commencement specified in the Notice to Proceed.

2.0 ADDENDA

Bidder acknowledges that it is Bidder'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 Bid Form. Bidder therefore agrees to be bound by all Addenda that has been issued for this Bid.

3.0 NOT USED**4.0 LUMP SUM BASE BID**

\$, , .

(Place Figures in appropriate boxes)

5.0 SELECTION OF APPARENT LOW BIDDER

Refer to the Instructions to Bidders for selection of apparent low bidder.

6.0 NOT USED

7.0 DAILY RATE OF COMPENSATION FOR COMPENSABLE DELAYS (Used As Basis**For Award)**

Bidder shall determine and provide below the daily rate of compensation for any Compensable Delay caused by University at any time during the performance of the Work:

\$, . x 5 **MULTIPLIER**
(Place Amount in Figures 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 Contractor entitlement for each day of Compensable Delay caused by University at any time during the performance of the Work and shall constitute payment in full for all delay costs, direct or indirect (including, without limitation, compensation for all extended home office overhead and extended general conditions), of the Contractor and all subcontractors, suppliers, persons, and entities under or claiming through Contractor on the Project. 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.

8.0 NOT USED

Bidder will use Subcontractors for the Work:

If yes, provide in the spaces below (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the state of California who, under subcontract to the prime contractor, 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 prime contractor's total bid, (b) the portion of the work which will be done by each subcontractor. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in its bid.

[illegible]

10.0 **NOT USED**

11.0 BIDDER INFORMATION

TYPE OF ORGANIZATION:

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

- IF A CORPORATION, THE CORPORATION IS ORGANIZED UNDER THE LAWS OF THE STATE OF _____.

NAME OF PRESIDENT OF THE CORPORATION:

(Insert Name)

NAME OF SECRETARY OF THE CORPORATION:

(Insert Name)

- IF A PARTNERSHIP, NAMES OF ALL GENERAL PARTNERS:

(Insert Names)

CALIFORNIA CONTRACTORS LICENSE(S):

(Classification)

(License Number)

(Expiration Date)

(For Joint Venture, list Joint Venture's license and licenses for all Joint Venture partners.)

EMPLOYER IDENTIFICATION NUMBER (EIN): _____DIR REGISTRATION NUMBER: _____**12.0 REQUIRED COMPLETED ATTACHMENTS**

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

1. Bid Security in the form of _____
(Bid Bond, Cashiers Check, or Certified Check)

13.0 DECLARATION

I, _____, hereby declare that I am
(Printed Name)
the _____ of _____
(Title) (Name of Bidder)

submitting this Bid Form; that I am duly authorized to execute this Bid Form on behalf of Bidder; and that all information set forth in this Bid Form and all attachments hereto are, to the best of my knowledge, true, accurate, and complete as of its submission date.

I further declare that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare, under penalty of perjury, that the foregoing is true and correct and that this declaration was

executed at: _____
(Name of City if within a City, otherwise Name of County)

in the 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 ten percent (10%) of the Lump Sum Base Bid 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 Bid for the work described as follows:

Infrastructure Renewal Project Phase 1C

FM170115L/986080

NOW, THEREFORE, if Principal shall not withdraw said Bid within the time period specified after the Bid Deadline, as defined in the Bidding Documents, or within sixty (60) days after the Bid Deadline if no time period be specified, and, if selected as the apparent lowest responsible Bidder, Principal shall, within the time period specified in the Bidding Documents, do the following:

- (1) Enter into a written agreement, in the prescribed form, in accordance with the Bid.
- (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 Bidding Documents.
- (3) Furnish certificates of insurance and all other items as required by the Bidding Documents.

In the event of the withdrawal of said Bid within the time period specified, or within sixty (60) days if no time period be specified, or the disqualification of said Bid 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 Bidding 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 Bid and such larger amount for which THE REGENTS procure the required work covered by said Bid, 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 _____, 2016

Principal

Surety

By: _____

By: _____

Title: _____

Title: _____

Address for Notices:

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.

AGREEMENT

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

Whose facility is: University of California Santa Barbara

Whose address for
notices is: University of California, Santa Barbara
Facilities Management, FM Building 439
Santa Barbara, California 93106-1030

And Contractor: _____
(Company Name)

Whose address for
notices is: _____
(Street Address)

(City, State Zip code)

For the Project: Infrastructure Renewal Project Phase 1C
FM170115L/986080
University of California
UC, Santa Barbara, County of Santa Barbara
Santa Barbara, California 93106-1030

University's Responsible
Administrator: Ray Aronson, Interim Director
(Name) (Title)
Design & Construction Services
(Department)

University's
Representative is: Telli Foster,
(Name & Title)
Design & Construction Services
(Department)

Whose Address for
Notices is: University of California, Santa Barbara
Facilities Management, Bldg. 439
Santa Barbara, California 93106

Contract Documents for
the Work Prepared by: Stantec Consulting Services, Inc.
111 East Victoria Street
Santa Barbara, CA 93101
Telephone: (805) 963-9532 FAX:

University and Contractor hereby agree as follows:

ARTICLE 1 WORK

Contractor shall provide all work required by the Contract Documents (the "Work"). Contractor agrees to do additional Work arising from changes ordered by the University pursuant to Article 7 of the General Conditions. Contractor shall (1) pay all sales, consumer and other taxes and (2) obtain and pay for any governmental licenses and permits necessary for the work, other than building and utility permits.

ARTICLE 2 CONTRACT DOCUMENTS

"Contract Documents" means the Advertisement For Bids, Instructions To Bidders, Supplementary Instructions to Bidders, Bid Form, 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 of which together form the contract between University and Contractor for the Work (the "Contract"). The contract constitutes the complete agreement between University and Contractor and supersedes any previous agreements or understandings.

ARTICLE 3 CONTRACT SUM

Subject to the provisions of the Contract Documents University shall pay to Contractor, for the performance of the Work, \$_____, the "Contract Sum".

The Contract Sum includes the following Alternates accepted by University:

(List Alternates here)

University reserves the right to accept the following Alternates within thirty (30) days after the date of this Agreement:

(LIST ALTERNATES, PRICES, AND CHANGES IN CONTRACT TIME)

Unit prices, if any, are as follows:

(LIST ITEMS AND UNIT PRICES)

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 4 CONTRACT TIME

Contractor shall commence the Work on the date specified in the Notice to Proceed and fully complete the work within ninety (90) days, the "Contract Time".

By signing this agreement, Contractor represents to University that the contract time is reasonable for completion of the work and that Contractor will complete the Work within the Contract Time. Time limits stated in the Contract Documents are of the essence of the Contract.

ARTICLE 5 LIQUIDATED DAMAGES

If Contractor fails to complete the Work within the Contract Time, Contractor shall pay to University, as liquidated damages and not as a penalty, the sum of one thousand Dollars (\$1,000.00) for each day after the expiration of the Contract Time that the Work remains incomplete. After Substantial Completion, the rate for liquidated damages shall be reduced to the sum of \$ 800.00 per day. University and Contractor 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 the aforesaid amounts are reasonable estimates of and reasonable sums for such damages. University may deduct any liquidated damages due from Contractor from any amounts otherwise due to Contractor under the Contract Documents. This provision shall not limit any right or remedy of University in the event of any other default of Contractor other than failing to complete the Work within the Contract Time.

ARTICLE 6 COMPENSABLE DELAY

If Contractor 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 of \$_____ per day for each day for which such compensation is payable.

ARTICLE 7 DUE AUTHORIZATION

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

(Signatures Located on Following Page.)

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

UNIVERSITY:

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

University of California, Santa Barbara
Santa Barbara, CA 93106

By: _____
(Signature)

(Printed Name)

(Title)

CONTRACTOR:

(Name of the Firm)

a _____
(Type of Organization)

By: _____
(Signature)

(Printed Name)

(Title)

By: _____
(Signature)

(Printed Name)

(Title)

California Contractor's License(s):

(Name of License)

(Classification and License Number)

(Expiration Date)

(Employer Identification Number)

(Attach notary acknowledgement for all signatures of Contractor. If signed by other than the sole proprietor, a general partner, or corporate officer, attach original notarized power of attorney or corporate resolution.)

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ARTICLE 1 GENERAL PROVISIONS

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, Contractor, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work including without limitation the requirements set forth in Article 3.7.

1.1.2 APPLICATION FOR PAYMENT

The term "Application For Payment" means the submittal from Contractor wherein payment for certain portions of the completed Work is requested in accordance with Article 9.

1.1.3 BENEFICIAL OCCUPANCY

The term "Beneficial Occupancy" means the University's occupancy or use of any part of the Work in accordance with Article 9.

1.1.4 CERTIFICATE FOR PAYMENT

The term "Certificate For Payment" means the form signed by University's Representative attesting to the Contractor's right to receive payment for certain completed portions of the Work in accordance with Article 9.

1.1.5 CHANGE ORDER

See Article 7.2 of the General Conditions.

1.1.6 CLAIM

See Article 4.3 of the General Conditions.

1.1.7 COMPENSABLE DELAY

The term "Compensable Delay" means a delay that entitles the Contractor to an adjustment of the Contract Sum and an adjustment of the Contract Time pursuant to Articles 7 and 8 of the General Conditions.

1.1.8 CONTRACT

The term "Contract" means the written Agreement between Contractor and University set forth in the Contract Documents.

1.1.9 CONTRACT DOCUMENTS

The term "Contract Documents" means all documents listed in Article 2 of the Agreement, as modified by Change Order, including but not limited to the Drawings and Specifications.

1.1.10 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 the Notice to Proceed or ii) the date of another Contract Milestone defined in the Contract Documents, as applicable.

1.1.11 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 in accordance with Article 3.

1.1.12 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.

1.1.13 CONTRACT TIME

The term "Contract Time" means the number of days set forth in the Agreement, as adjusted by Change Order, within which Contractor must achieve Final Completion.

1.1.14 CONTRACTOR

The term "Contractor" means the person or firm identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.

1.1.15 CONTRACTOR FEE

See Article 7.3 of the General Conditions.

1.1.16 COST OF EXTRA WORK

See Article 7.3 of the General Conditions.

1.1.17 DAY

The term "day," as used in the Contract Documents, shall mean calendar day, unless otherwise specifically provided.

1.1.18 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.

1.1.19 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.

1.1.20 EXCUSABLE DELAY

The term "Excusable Delay" means a delay that entitles the Contractor 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.

1.1.21 EXTRA WORK

The term "Extra Work" means Work beyond or in addition to the Work required by the Contract Documents.

1.1.22 FIELD ORDER

See Article 7.2 of the General Conditions.

1.1.23 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 9.8.1 of the General Conditions.

1.1.24 GUARANTEE TO REPAIR PERIOD

See Article 12.2 of the General Conditions.

1.1.25 PROJECT

The term "Project" means the Work of the Contract and all other work, labor, equipment, and materials necessary to accomplish the Project. The Project may include construction by University or by Separate Contractors.

1.1.26 SEPARATE CONTRACTOR

The term "Separate Contractor" means a person or firm under separate contract with University performing other work related to the Project.

1.1.27 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

See Article 3.12 of the General Conditions.

1.1.28 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.

1.1.29 SUBCONTRACTOR

The term "Subcontractor" means a person or firm that has a contract with Contractor or with a Subcontractor to perform a portion of the Work. Unless otherwise specifically provided, the term Subcontractor includes Subcontractors of all tiers.

1.1.30 SUBSTANTIAL COMPLETION

See Article 9.7 of the General Conditions.

1.1.31 SUPERINTENDENT

The term "Superintendent" means the person designated by Contractor to represent Contractor at the Project site in accordance with Article 3.

1.1.32 TIER

The term "tier" means the contractual level of a Subcontractor or supplier with respect to Contractor. For example, a first-tier Subcontractor is under subcontract with Contractor, a second-tier Subcontractor is under subcontract with a first-tier Subcontractor, and so on.

1.1.33 UNEXCUSABLE DELAY

The term "Unexcusable Delay" means a delay that does not entitle the Contractor to an adjustment of the Contract Sum and does not entitle the Contractor to an adjustment of the Contract Time.

1.1.34 UNILATERAL CHANGE ORDER.

See Article 7.2 of the General Conditions.

1.1.35 UNIVERSITY

The term "University" means The Regents of the University of California.

1.1.36 UNIVERSITY'S BUILDING OFFICIAL

The term "University's Building Official" means the individual the University has designated to act in the capacity as 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.

1.1.37 UNIVERSITY'S REPRESENTATIVE

The term "University's Representative" means the person or firm identified as such in the Agreement.

1.1.38 UNIVERSITY'S RESPONSIBLE ADMINISTRATOR

The term "University's Responsible Administrator" means the person, or his or her authorized designee, who is authorized to sign the Agreement and other applicable Contract Documents on behalf of the University.

1.1.39 WORK

The term "Work" means all construction, services and other requirements of the Contract Documents as modified by Change Order, whether completed or partially completed, and includes all labor, materials, equipment, tools, and services provided or to be provided by Contractor to fulfill Contractor'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 Contractor are the property of the University and are not to be used on other work.

1.3 INTERPRETATION

1.3.1 The Contract Documents are complementary and what is required by one shall be as binding as if required by all. In the case of conflict between terms of the Contract Documents, the following order of precedence shall apply:

- .1 The Agreement,
- .2 The Supplementary Conditions,
- .3 The General Conditions,
- .4 The Specifications,
- .5 The Drawings.

1.3.2 With respect to the Drawings, figured dimensions shall control over scaled measurements and specific details shall control over typical or standard details.

1.3.3 With respect to the Contract Documents, Addenda shall govern over other portions of the Contract Documents to the extent specifically noted; subsequent Addenda shall govern over prior Addenda only to the extent specifically noted.

1.3.4 Organization of the Specifications into various subdivisions and the arrangement of the Drawings shall not control Contractor 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 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 nonlimiting 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 INFORMATION AND SERVICES PROVIDED BY UNIVERSITY

2.1.1 If required for performance of the Work, as determined by University's Representative, University will make available a survey describing known physical characteristics, boundaries, easements, and utility locations for the Project site.

2.1.2 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.

2.1.3 Contractor 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, no later than the date designated in the Contract Schedule accepted by University's Representative, access to the lands and facilities upon which the Work is to be performed, including such access and other lands and facilities designated in the Contract Documents for use by Contractor.

2.3 UNIVERSITY'S RIGHT TO STOP THE WORK

2.3.1 If Contractor fails to correct Defective Work as required by Article 12.2 or fails to perform the Work in accordance with the Contract Documents, University or University's Representative may direct Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated by Contractor. Contractor 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 Contractor 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 Contractor fails to carry out the Work in accordance with the Contract Documents, fails to provide sufficient labor, materials, equipment, tools, and services 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 Contractor's expense. In such case, University will be entitled to deduct from payments then or thereafter due Contractor 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 Contractor are not sufficient to cover such amounts, Contractor 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 Contractor, replace University's Representative with a new University's Representative. Upon receipt of notice from University informing Contractor of such replacement and identifying the new University's representative, Contractor shall recognize such person or firm as University's Representative for all purposes under the Contract Documents.

ARTICLE 3 CONTRACTOR

3.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.1.1 Contractor 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 Contractor.

3.1.2 Contractor shall take field measurements, verify field conditions, and carefully compare with the Contract Documents such field measurements, conditions, and other information known to Contractor 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 Contractor performs any 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, without notifying and obtaining the written consent of University's Representative, Contractor shall be responsible for the resultant losses, including, without limitation, the costs of correcting Defective Work.

3.2 SUPERVISION AND CONSTRUCTION PROCEDURES

3.2.1 Contractor shall supervise, coordinate, and direct the Work using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures, and the coordination of all portions of the Work.

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

3.2.3 Contractor 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 Contractor.

3.2.4 Contractor 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 and are ready to receive subsequent Work.

3.2.5 Contractor shall at all times maintain good discipline and order among its employees and Subcontractors. Contractor shall provide competent, fully qualified personnel to perform the Work.

3.3 LABOR AND MATERIALS

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

3.4 CONTRACTOR'S WARRANTY

3.4.1 Contractor warrants to University that all materials and equipment used in or incorporated into the Work will be of good quality, new, and free of liens, claims, and security interests of third parties; that the Work will be of good quality and free from defects; and that the Work will conform with the requirements of the Contract. If required by University's Representative, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.5 TAXES

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

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 2.1.2, Contractor shall secure and pay for all permits, approvals, government fees, licenses, and inspections necessary for the proper execution and performance of the Work. Contractor shall deliver to University all original licenses, permits, and approvals obtained by Contractor 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 Contractor shall perform the Work in accordance with the following Applicable Code Requirements:

- .1 All laws, statutes, the most recent building codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over University, Contractor, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work.
- .2 All requirements of any insurance company issuing insurance required hereunder.
- .3 The Federal Occupational Safety and Health Act and all other Applicable Code Requirements relating to safety.
- .4 Applicable titles in the State of California Code of Regulations.
- .5 Applicable sections in the State of California Labor Code.
- .6 All Applicable Code Requirements relating to nondiscrimination, payment of prevailing wages, payroll records, apprentices, and work day.

Without limiting the foregoing, Contractor shall comply with the provisions regarding nondiscrimination, payment of prevailing wages, payroll records, apprentices, and work day set forth in Article 14.

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

3.7.3 If Contractor performs Work which it knows or should know is contrary to Applicable Code Requirements, without prior notice to University and University's Representative, Contractor 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 Contractor 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 Work. Superintendent shall represent Contractor and communications given to and received from Superintendent shall be binding on Contractor.

3.8.2 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, Contractor fails to complete the Contract on time, Contractor will be assessed Liquidated Damages in accordance with the Agreement.

3.8.3 The Superintendent approved for the Project must be able to read, write and verbally communicate in English.

3.8.4 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 Work at the Project site when Work is in progress.

3.9 SCHEDULES REQUIRED OF CONTRACTOR

3.9.1 Contractor shall submit a Preliminary Contract Schedule to University's Representative in the form and within the time limit required by the Specifications. University's Representative will review the Preliminary Contract Schedule with Contractor within the time limit required by the Specifications.

3.9.2 Contractor shall submit a Contract Schedule and updated Contract Schedules to University's Representative in the form and within the time limits required by the Specifications and acceptable to University's Representative. University's Representative will determine acceptability of the Contract Schedule and updated Contract Schedules within the time limits required by the Specifications.

3.9.3 The Preliminary Contract Schedule, the Contract Schedule, and updated Contract Schedules shall represent a practical plan to complete the Work within the Contract Time. Extension of any schedule beyond the Contract Time shall not be acceptable. Schedules showing the Work completed in less than the Contract Time may be acceptable if judged by University's Representative to be practical. However, acceptance of such a schedule by University's Representative shall not change the Contract Time. The Contract Time, not the Contract Schedule, shall control in the determination of liquidated damages payable by Contractor under Article 4 and Article 5 of the Agreement and in the determination of any delay under Article 8 of the General Conditions.

3.9.4 If a schedule showing the Work completed in less than the Contract Time is accepted, Contractor 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.

3.9.5 Contractor shall prepare and keep current, to the satisfaction of University's Representative, a Submittal Schedule in the form contained in the Exhibits for each submittal, as required by the Specifications, and that are coordinated with the other activities in the Contract Schedule.

3.9.6 The Preliminary Contract Schedule, 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 for University decisions and University furnished items.
- .3 Schedules must be in sufficient detail to demonstrate adequate planning for the Work.
- .4 Schedules must represent a practical plan to perform and complete the Work within the Contract Time.

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

3.9.8 Contractor shall plan, develop, supervise, control, and coordinate the performance of the Work so that its progress and the sequence and timing of Work activities conform to the accepted Contract Schedule.

3.9.9 Contractor 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, and shall monitor the progress of the Work and the delivery of equipment.

3.9.10 Contractor shall act as the expeditor of potential and actual delays, interruptions, hindrances, or disruptions for its own forces and those forces of Subcontractors, regardless of tier.

3.9.11 Contractor shall cooperate with University's Representative in the development of the Contract Schedule and updated Contract Schedules. University's Representative's acceptance of or its review comments about any schedule or scheduling data shall not relieve Contractor 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 Contractor that Contractor, Subcontractors, or others are behind schedule, or to direct or enforce procedures for complying with the Contract Schedule shall not relieve Contractor 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.

3.9.12 Contractor shall perform the Work in accordance with the accepted Contract Schedule.

3.10 AS-BUILT DOCUMENTS

3.10.1 Contractor shall maintain one 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 shall be noted on the As-built set. Notations shall reflect the actual materials, equipment and installation methods used for the Work and 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 Contractor 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.

3.11 DOCUMENTS AND SAMPLES AT PROJECT SITE

3.11.1 Contractor 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 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.

3.12 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.12.1 Definitions:

- .1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor 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 Contractor to illustrate or describe materials or equipment for some portion of the Work.

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

3.12.2 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 Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

3.12.3 Contractor 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 Contractor which are not required by the Contract Documents may be returned without action by University's Representative.

3.12.4 Contractor 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.

3.12.5 By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, Contractor 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.

3.12.6 If Contractor discovers any conflicts, omissions, or errors in Shop Drawings or other submittals, Contractor shall notify University's Representative and receive instruction before proceeding with the affected Work.

3.12.7 Contractor 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 Contractor 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. Contractor 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.

3.12.8 Contractor 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.

3.13 USE OF SITE AND CLEAN UP

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

3.13.2 Contractor 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 Contractor. Contractor shall remove all excess dirt, waste material, and rubbish caused by the Contractor; tools; equipment; machinery; and surplus materials from the Project site and surrounding area at the completion of the Work.

3.13.3 Personnel of Contractor 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.

3.14 CUTTING, FITTING, AND PATCHING

3.14.1 Contractor 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.

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

3.15 ACCESS TO WORK

3.15.1 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. Contractor shall provide safe and proper facilities for such access and for inspection.

3.16 ROYALTIES AND PATENTS

3.16.1 Contractor shall pay all royalties and license fees required for the performance of the Work. Contractor shall defend suits or claims resulting from Contractor'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.

3.17 DIFFERING SITE CONDITIONS

3.17.1 If Contractor encounters any of the following conditions at the site, Contractor 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.

3.17.2 Contractor 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 Contractor fulfills the following conditions:

- .1 Contractor fully complies with Article 3.17.1; and
- .2 Contractor fully complies with Article 4 (including the timely filing of a Change Order Request and all other requirements for Change Orders Requests and Claims).

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

3.18 CONCEALED, UNFORESEEN, OR UNKNOWN CONDITIONS OR EVENTS

3.18.1 Except and only to the extent provided otherwise in Articles 3.17, 7 and 8 of the General Conditions, by signing the Agreement, Contractor agrees:

- .1 To bear the risk of concealed, unforeseen or unknown conditions or events, if any, which may be encountered in performing the Contract; and
- .2 That Contractor's bid for the Contract was made with full knowledge of this risk.

In agreeing to bear the risk of concealed, unforeseen or unknown conditions or events, Contractor understands that, except and only to the extent provided otherwise in Articles 3.17, 7 and 8, concealed, unforeseen or unknown conditions or events shall not excuse Contractor from its obligation to achieve Final Completion of the Work within the Contract Time, and shall not entitle the Contractor to an adjustment of the Contract Sum.

3.18.2 If Contractor encounters concealed, unforeseen or unknown conditions or events that may require a change to the design shown in the Contract Documents, Contractor shall immediately notify University's Representative in writing such that University's Representative can determine if a change to the design is required. Contractor shall be liable to University for any extra costs incurred as the result of Contractor's failure to immediately give such notice.

3.18.3 If, as the result of concealed, unforeseen or unknown conditions or events, the University issues a Change Order or Field Order that changes the design from the design depicted in the Contract Documents, Contractor shall be entitled, subject to compliance all the provisions of the Contract, including those set forth in Articles 4, 7 and 8, 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 3.18.3, 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. .

3.18.4 Contractor shall, as a condition precedent to any adjustment in Contract Sum or Contract Time under Article 3.18.3, fully comply with Article 4 (including the timely filing of a Change Order Request and all other requirements for Change Orders Requests and Claims).

3.19 INFORMATION AVAILABLE TO BIDDERS

3. 19.1 Any information provided pursuant to INFORMATION AVAILABLE TO BIDDERS is subject to the following provisions:

- .1 The information is made available for the convenience of Bidders and is not a part of the Contract.
- .2 The Contractor 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 Contractor. University shall not be responsible for any interpretation of or conclusion drawn from the other components of the information by the Contractor.

3.20 LIABILITY FOR AND REPAIR OF DAMAGED WORK

3.20.1 Contractor shall be liable for any and all damages and losses to the Project (whether by fire, theft, vandalism, earthquake, flood or otherwise) prior to University's acceptance of the Project as fully completed except that Contractor shall not be liable for:

- .1 Losses covered by the builder's risk property insurance provided by University pursuant to Article 11 of the General Conditions, except that the Contractor shall be liable for any deductibles and any amounts exceeding policy limits.
- .2 Earthquake, tidal wave, or flood, provided that the loss was not caused in whole or in part by the negligent acts or omissions of Contractor, 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.

3.20.2 Contractor shall promptly repair and replace any Work or materials damaged or destroyed for which the Contractor is liable under Article 3.20.1.

3.21 INDEMNIFICATION

3.21.1 Contractor shall Indemnify defend and hold harmless (with counsel approved by University) University, University's consultants, University's Representative, University's Representative's consultants, and their respective directors, officers, agents, and employees from and against losses arising out of, resulting from, or relating to the following:

- .1 The failure of Contractor to perform its obligations under the Contract.
- .2 The inaccuracy of any representation or warranty by Contractor 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 Contractor or any other Subcontractor, or anyone directly or indirectly employed by Contractor or any Subcontractor.

3.21.2 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 Contractor shall fully indemnify, defend and hold harmless University and protect University from and against the same. In addition to the liability imposed by law upon the Contractor for damage or injury (including death) to persons or property by reason of the negligence of the Contractor, its officers, agents, employees or Subcontractors, which liability is not impaired or otherwise affected hereby, the Contractor 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 Contractor, 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 Contractor, 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. Contractor 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 in the event of the sole negligence of University, its officers, agents, or employees.

3.21.3 In claims against any person or entity indemnified under this Article 3.21 that are made by an employee of Contractor or any Subcontractor, a person indirectly employed by Contractor or any Subcontractor, or anyone for whose acts Contractor or any Subcontractor may be liable, the indemnification obligation under this Article 3.21 shall not be limited by any limitation on amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

3.21.4 The indemnification obligations under this Article 3.21 shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

3.21.5 Contractor 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 Contractor, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts either of them may be liable.

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

ARTICLE 4 ADMINISTRATION OF THE CONTRACT

4.1 ADMINISTRATION OF THE CONTRACT BY UNIVERSITY'S REPRESENTATIVE

4.1.1 University's Representative will provide 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.

4.1.2 University's Representative will have the right to visit the Project site at such intervals as deemed appropriate by the University's Representative. However, no actions taken during such Project site visit by University's Representative shall relieve Contractor of its obligations as described in the Contract Documents.

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

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

4.1.5 Based on University's Representative's Project site visits and evaluations of Contractor's Applications For Payment, University's Representative will recommend amounts, if any, due Contractor 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 not exercise such authority, will give rise to a duty or responsibility of University or University's Representative to Contractor, or any person or entity claiming under or through Contractor.

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 Contractor; and will issue a final Certificate For Payment upon Contractor'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 Contractor. Should Contractor discover any conflicts, omissions, or errors in 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; or question that Work required is not sufficiently detailed or explained, then, before proceeding with the Work affected, Contractor shall notify University's Representative in writing and request interpretation, clarification, or furnishing of additional detailed instructions. University's Representative's response to questions and requests for interpretations, clarifications, instructions, or

decisions will be made with reasonable promptness. Should Contractor 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 Contractor shall be responsible for all resultant losses.

4.2 CONTRACTOR CHANGE ORDER REQUESTS

4.2.1 Contractor 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; and
- .2 If requested, timely submission of additional informational requested by the University Representative pursuant to Article 4.2.3.3.

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 Contractor 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.

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 Contractor requests an adjustment to the Contract Sum or other monetary relief, the Contractor 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; OR
- .2 a partial Cost Proposal and a declaration of what required information is not then known to Contractor. If Contractor failed to submit a completed Cost Proposal with the Change Order Request, Contractor shall submit a completed Cost Proposal meeting the requirements of Article 7 within 7 days of the date the Contractor 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, Contractor 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 Contractor 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 Contractor seeks an adjustment of the Contract Time, written documentation demonstrating Contractor's entitlement to a time extension under Article 8.4, which shall be submitted within 15 days of the date requested.

- .3 If Contractor seeks an adjustment of the Contract Sum or other monetary relief for delay, written documentation demonstrating Contractor's entitlement to such an adjustment under Article 7.3.9, 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. 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, Contractor may contest the decision by filing a timely Claim under the procedures specified in Article 4.3.

4.2.5 Contractor 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; 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 Contractor 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 Contractor 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 which 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 Article 4.7.4.
- .4 Claims respecting stop notices.

4.3.2 A Claim arises upon the issuance of a written final decision denying in whole or in part Contractor's Change Order Request pursuant to Article 4.2.4.

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.
- .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 Contractor, 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. Exhibit.

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- .5 A statement demonstrating that a Change Order Request was timely submitted as required by Article 4.2.3
 - .6 If a Cost Proposal or declaration was required by Article 4.2.3, a statement demonstrating that the Cost Proposal or the declaration was timely submitted as required by Article 4.2.3.
 - .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, a detailed cost breakdown of the amounts claimed, including the items specified in Article 7.3.2. 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 week during any periods costs are incurred. A cost record will be considered current if submitted within 7 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 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, serial number, hours of use, dates of use and equipment rental rates of any rented equipment
Contract
 - .2 If the Claim involves an extension of the Contract Time, written documentation demonstrating the Contractor's entitlement to a time extension under Article 8.4, including the specific dates for which a time extension is sought and the specific reasons for entitlement of a time extension. The Contract Schedule must demonstrate Contractor's entitlement to an adjustment of Contract Time under Article 8.4.
 - .3 If the Claim involves an adjustment of the Contract Sum for delay, written documentation demonstrating the Contractor's entitlement to such an adjustment under Article 7.3.9, including but not limited to, a detailed time impact analysis of the Contract Schedule. The Contract Schedule must demonstrate Contractor's entitlement to such an adjustment under Article 7.3.9.

4.4 ASSERTION OF CLAIMS

4.4.1 Claims by Contractor 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, Contractor shall not cause any delay, cessation, or termination in or of Contractor's performance of the Work, but shall diligently proceed with performance of the Work in accordance with the Contract Documents.

4.4.3 Contractor shall submit a Claim in writing, together with all supporting data specified in Article 4.3.3, 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.

4.4.4 Strict compliance with the requirements of Articles 4.2, 4.3 and 4.4 are conditions precedent to Contractor's right to arbitrate or litigate a Claim. Contractor specifically agrees to assert no Claims in arbitration or litigation unless there has been strict compliance with Articles 4.2, 4.3, and 4.4. The failure of Contractor to strictly comply with the requirements of Articles 4.2, 4.3 and 4.4 constitutes a failure by Contractor 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 Contractor. 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 60 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. The decision of University's Representative will be final and binding unless appealed in accordance with Articles 4.5.2, 4.5.3, and 4.5.4. The University's Representative's decision on a Claim or dispute will include a statement substantially as follows:

"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 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, such party (the "Disputing Party") must either 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 decision of University's Representative 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.

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

4.5.4 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.

4.5.5 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.

4.5.6 The parties will attempt in good faith to resolve any controversy or Claim arising out of or relating to this Contract by negotiation.

4.6 MEDIATION

4.6.1 The parties may agree to mediate any controversy or Claim arising out of or relating to this Contract.

4.7 ARBITRATION

4.7.1 A demand for arbitration pursuant to Article 4.5 shall include a copy of the Claim presented to University's Representative pursuant to Article 4.4 and a copy of the decision of University's Representative pursuant to Article 4.5, if any. 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.

4.7.2 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 in 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 Contractor and University.
- .3 Contractor's sureties shall be bound by any arbitration award and may join in any arbitration proceeding.
- .4 Except as provided in Articles 4.7.2.2. and 4.7.2.3 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 crossclaim, or otherwise without the express written consent of University, Contractor, 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 which 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 Contractor 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.
- .10 Except as provided herein, the arbitration shall be conducted and enforced under California law, including the California Arbitration Act (California Code of Civil Procedure section 1280 and following). The Federal Arbitration Act shall not apply to the arbitration.

4.7.3 Unless University and Contractor 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.

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

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, including without limitation the requirements in Articles 4.2, 4.3, 4.4, and 4.5 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 Contractor 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 Unless otherwise stated in the Contract Documents, Contractor shall submit in writing, prior to entering into subcontract agreements, the names and addresses of all Subcontractors proposed for the Work that were not previously listed in Contractor's Bid.

5.1.2 Any Subcontractor may be disqualified if University or University's Representative determines that such Subcontractor fails to meet the requirements of the Contract Documents or for any other reason.

5.1.3 In accordance with the Subletting and Subcontracting Fair Practices Act, nothing herein shall be deemed to entitle Contractor, without the approval of University, to substitute other subcontractors for those named in Contractor's List of Subcontractors and List of Changes in Subcontractors Due to Alternates contained in the completed Bid Form; and, except with such approval, no such substitution shall be made.

5.1.4 Except as hereinafter provided, any increase in the cost of the Work resulting from the replacement or substitution of a Subcontractor, as required by University or University's Representative pursuant to Article 5.1.1 shall be borne solely by Contractor and Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time on account of such replacement or substitution.

5.2 SUBCONTRACTUAL RELATIONS

5.2.1 Any part of the Work performed for Contractor 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 Contractor by the terms of the Contract Documents, to assume toward Contractor all the obligations and responsibilities which Contractor 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. Contractor 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 Contractor or University, except for such rights Subcontractor may have to the proceeds of such insurance held by University under Article 11.
- .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, 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.

5.2.2 Upon the request of University, Contractor 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, Contingent Assignment of Subcontracts.

5.3 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.3.1 Contractor hereby assigns to University all its interest in first-tier subcontracts now or hereafter entered into by Contractor 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 Contractor's rights under the Contract Documents. Such assignment is part of the consideration to University for entering into the Contract with Contractor 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. Contractor 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 Contractor. Contractor shall participate with University and Separate Contractors in joint review of construction schedules and Project requirements when directed to do so. Contractor shall make necessary revisions to the Contract Schedule after such joint review.

6.2 MUTUAL RESPONSIBILITY

6.2.1 Contractor shall afford University and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities. Contractor 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, Contractor shall inspect such other construction or operations before proceeding with that portion of the Work. Contractor shall promptly report to University's Representative apparent discrepancies or defects which render the other construction or operations unsuitable to receive the Work. Unless otherwise directed by University's Representative, Contractor shall not proceed with the portion of the Work affected until apparent discrepancies or defects have been corrected. Failure of Contractor 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 Contractor 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 Contractor may request a Change Order under the procedures specified in Article 4.2.

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

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

7.2 DEFINITIONS

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

- .1 A change in the Work, if any.
- .2 The amount of an adjustment of the Contract Sum, if any.
- .3 The amount of an adjustment of the Contract Time, if any.
- .4 A modification to any other Contract term or condition.

7.2.2 A Unilateral Change Order may be issued by University, without the Contractor's signature, where the University determines that a change in the Work requires an adjustment of the Contract Sum or Contract Time, even though no agreement has been reached between University and Contractor 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 Contractor to perform Work. A Field Order may, but need not, constitute a change in the Work and may, but need not, entitle Contractor to an adjustment of the Contract Sum or Contract Time.

7.3 CHANGE ORDER PROCEDURES

7.3.1 Contractor shall provide a Change Order Request and Cost Proposal pursuant to Article 4.2 and this Article 7.3 of the General Conditions. 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. Contractor's obligation to provide Cost Proposals shall be subject to the following:

- .1 The obligation of Contractor to provide Cost Proposals is not Extra Work, and shall not entitle the Contractor to an adjustment of the Contract Sum or Contract Time.
- .2 The failure of Contractor to timely provide a Cost Proposal pursuant to Article 4.2 and this Article 7.3.1 is a material breach of the Contract. Contractor shall be responsible for any delay in implementing a change for which Contractor failed to timely provide a Cost Proposal consistent with the requirements of Article 4.2 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 Contractor and each Subcontractor regardless of tier involved, and shall be limited to the following (to the extent the Contractor 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

- .2 fabrication sites off the Project site, in the direct performance of the Extra Work. Fringe Benefits and Payroll Taxes for employees employed at the Project site, or at fabrication sites off the Project site, in the direct 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, in the direct 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, in the direct 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 Contractor 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 Contractor 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, maximum rental charge shall be those published by CalTrans at <http://www.dot.ca.gov/hq/construc/equipmnt.html>. 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 The cost for Insurance and Bonds shall not exceed 2% of items .1 through .8 above.

University and Contractor 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. Contractor 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 Superintendent(s).
- .2 Assistant Superintendent(s).
- .3 Project Engineer(s).
- .4 Project Manager(s).
- .5 Scheduler(s).
- .6 Estimator(s).
- .7 Drafting or Detailing.
- .8 Small tools (In excess of \$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.

7.3.4 The term "Contractor Fee" shall mean the full amount of compensation, both direct and indirect (including without limitation all overhead and profit), to be paid to Contractor 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. The Contractor Fee shall not be compounded.

The Contractor Fee shall be computed as follows:

- .1 Fifteen percent (15%) of the cost of that portion of the Extra Work to be performed by the prime contractor 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 prime contractor. Total combined Contractor 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 prime contractor. Total combined Contractor, Subcontractor and all sub-subcontractor fee shall not exceed 25%.

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 Unit Prices are not applicable, a mutually agreed upon lump sum supported by a Cost Proposal pursuant to 7.3.1.
- .3 Where Contractor and University cannot agree upon a lump sum, by Cost of Extra Work plus Contractor Fee applicable to such Extra Work.

7.3.6 As a condition to Contractor's right to an adjustment of the Contract Sum pursuant to Article 7.3.5.3, Contractor 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 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 Where Unit Prices are not applicable, a lump sum agreed upon by University and Contractor, 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, supported by a Cost Proposal pursuant to Article 7.3.1.

7.3.8 If any one Change involves both Extra Work and Deleted Work in the same portion of the Work, a Contractor fee will not be allowed if the deductive cost exceeds the additive cost. If the additive cost exceeds the deductive cost, a Contractor 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, Contractor 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.
- .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; 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 Contractor; or
 - .3 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the Contractor; or
 - .4 The failure of the University or the University's Representative to timely perform any contract obligation where the failure to so perform is not the result of any default or misconduct of the Contractor.
 - .5 A materially differing site condition pursuant to Article 3.17.
- .3 Condition Number Three: The delay is not concurrent with a delay that is:
- .1 Critical under Article 8.4.1.2; and
 - .2 Caused by an event not listed in Article 7.3.9.2.
- .4 Condition Number Four: The delay is not caused, in whole or in part, by an event not listed in Article 7.3.9.2 above.

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

7.3.11 Except as provided in Articles 7 and 8, Contractor 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 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.

7.4 FIELD ORDERS

7.4.1 Field Orders issued by the University 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 Contractor 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, Contractor must follow all procedures set forth in Article 4, starting with the requirement of submitting a timely Change Order Request within 7 days of Contractor'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 Contractor shall be entitled to an adjustment of the Contract Sum and Contract Time, calculated under and subject to Contractor's compliance with the procedures for verifying and substantiating costs and delays in Articles 7 and 8.
- .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 Contractor 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 Contractor asserts that the change in the Work encompassed by the Field Order may entitle Contractor 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 Contractor must follow all procedures set forth in Article 4, starting with the requirement of submitting a timely Change Order Request within 7 days of Contractor'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, Contractor shall promptly proceed to perform the Work as ordered in the Field Order notwithstanding any disagreement by the Contractor 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 Contractor 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 Work shall be set forth in the Notice To Proceed. The date of commencement of the Work shall not be postponed by the failure of Contractor, Subcontractors, or of persons or firms for whom Contractor is responsible, to act.

8.2 PROGRESS AND COMPLETION

8.2.1 By signing the Agreement:

- .1 Contractor represents to University that the Contract Time is reasonable for performing the Work and that Contractor is able to perform the Work within the Contract Time.
- .2 Contractor agrees that University is purchasing the right to have the Contractor present on the Project site for the full duration of the Contract Time, even if Contractor could finish the Contract in less than the Contract Time.

8.2.2 Contractor 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 to be furnished by Contractor. The dates of commencement and Final Completion of the Work shall not be changed by the effective date of such insurance.

8.2.3 Contractor shall proceed expeditiously with adequate forces and shall achieve full completion of the Work within the Contract Time. If University's Representative determines and notifies Contractor that Contractor's progress is such that Contractor will not achieve full completion of the Work within the Contract Time, Contractor 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 the Work is fully completed within the Contract Time. Upon receipt of such notice from University's representative, Contractor shall immediately notify University's Representative of all measures to be taken to ensure full completion of the Work within the Contract Time. Contractor 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, by signing the Agreement, Contractor agrees:

- .1 to bear the risk of delays to the Work; and
- .2 that Contractor's bid for the Contract was made with full knowledge of this risk.

In agreeing to bear the risk of delays to the Work, Contractor understands that, except and only to the extent provided otherwise in Articles 7 and 8, the occurrence of events that delay the Work shall not excuse Contractor from its obligation to achieve Final Completion of the Work within the Contract Time, and shall not entitle the Contractor 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, the Contract Time will be extended for each day of delay for which Contractor demonstrates that all of the following seven conditions have been met; a time extension will not be granted for any day of delay for which Contractor fails to demonstrate compliance with the seven conditions:

- .1 Condition Number One: At the time that the event causing the delay commences, the Contractor has complied with all Contract requirements for maintaining, submitting, and updating Contract Schedules.
- .2 Condition Number Two: 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 beyond the Contract Time. Under this Article 8.4.1.2, if the Contract Schedule shows Final Completion of the Work before expiration of the Contract Time, a delay is critical if and only to the extent the delay pushes Final Completion of the Work to a date that is beyond the Contract Time.:
- .3 Condition Number Three: The delay is supported by the Contract Schedule (or, if appropriate, the Preliminary Contract Schedule), current at the commencement of the event giving rise to the delay. A delay is supported only to the extent the Contract Schedule (or, if appropriate, the Preliminary Contract Schedule) corroborates that it causes a delay to Final Completion of the Work beyond the contractually specified date for Final Completion because of its effect on the operation referred to in Article 8.4.1.2. The requirement that a delay be supported will be excused if the event causing the delay commences before approval of the Preliminary Contract Schedule, provided that the absence of an approved Preliminary Contract Schedule is not due to the Contractor's failure to timely submit an acceptable Preliminary Contract Schedule.
- .4 Condition Number Four: Within 7 days of the date the Contractor discovers or reasonably should discover an act, error, omission or unforeseen condition or event causing the delay, (even if the Contractor has not been delayed when the Contractor discovers or reasonably should discover the act, error, omission or unforeseen condition giving rise to the delay) the Contractor submits both a timely and complete Change Order Request that meets the requirements of Article 4.2.
- .5 Condition Number Five: 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 3.17; or
 - .2 The financial inability, misconduct or default of the Contractor, a Subcontractor or supplier; or
 - .3 The unavailability of materials or parts.
- .6 Condition Number Six: 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 3.17; or
 - .5 An error or omission in the Contract; 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 Contractor; or
 - .7 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the

- Contractor; or
- .8 The failure of the University or the University's representative to timely perform any Contract obligation unless such failure is due to Contractor's default or misconduct.
- .9 "Rainy weather," but only for such days of rain 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 rainy weather for the purpose of determining whether Contractor 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 rain, no critical path work is performed by Contractor; and
 - .2 the day must be identified in the Contract Schedule as a scheduled work day.

- .7 Condition Number Seven: Contractor has taken all reasonable measures to avoid and minimize the delay and, notwithstanding such measures, the delay occurred.

8.4.2 If and only if a delay meets all seven conditions prescribed in Article 8.4.1, 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 seven conditions prescribed in Article 8.4.1) 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 Article 8.4.2, such concurrent critical delays shall be treated as a single delay for each such day.
- .2 Contractor shall be entitled to a time extension for a day of delay that meets all seven requirements of Article 8.4.1 if the delay is concurrent with a delay that does not meet all seven conditions of Article 8.4.1.

8.4.3 If for any reason one or more of the seven conditions prescribed in Article 8.4.1 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.

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. 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 Contractor, its Suppliers and Subcontractors of all tiers and all persons and entities working under or claiming through Contractor 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, 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, 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 Contractor 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 Notice of Selection as the apparent lowest responsible Bidder, and with the Agreement, Contractor 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 Contractor's Applications for Payment.

9.2 PROGRESS PAYMENT

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

- .1 Cost of the Work in permanent place as of the date of the Contractor's Application for Payment..
- .2 Plus cost of materials not yet incorporated in the Work, subject to Article 9.3.5.
- .3 Less amounts previously paid.

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

9.2.2 After Substantial Completion and subject to Article 9.4.3 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, Contractor 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.
- .3 Include such data substantiating Contractor'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, 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.
- .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 Contractor 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 Contractor 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 Contractor, 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 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, Contractor 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 Contractor. 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 Contractor from sole responsibility for the care and protection of such materials; nor relieve Contractor from risk of loss to such materials from any cause whatsoever; nor relieve Contractor 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 Contractor submitted an Application For Payment in accordance with Article 9.3, 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 Contractor, 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, University will inform Contractor as soon as practicable, but not later than 5 working days after receipt. Thereafter, Contractor 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 Contractor or University arising from the acts or omissions of Contractor or Subcontractors.
- .3 Stop notices.
- .4 Failure of Contractor to make timely payments due Subcontractors for material or labor.
- .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 Contractor 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 Contractor to maintain and update as-built documents.
- .9 Failure of Contractor 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 Contractor without properly processed Shop Drawings.
- .12 Liquidated damages assessed in accordance with Article 5 of 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 Contractor to perform its obligations under the Contract Documents.

9.4.4 Subject to the withholding provisions of Article 9.4.2, University will pay Contractor the amount set forth in the Certificate For Payment no later than 15 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 Contractor, 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 Contractor 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 final payment 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. Contractor 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, and at the request and expense of Contractor, University will deposit retention directly with Escrow Agent. Contractor 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 Contractor.

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 Contractor, 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 Contractor 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 Work at any time prior to Substantial Completion or Final Completion upon 10 days' notice to Contractor. 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 Contractor as an acceptance by University of that portion of the Work which is to be occupied.
 - .3 Beneficial Occupancy by University shall not constitute a waiver of existing claims of University or Contractor against each other.
 - .4 Contractor 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 Contractor while the equipment is so operated. Contractor shall submit to University an itemized list of each piece of equipment so operated with the date operation commences.
 - .5 The Guarantee to Repair Periods, as defined in Article 12.2, will commence upon the first dates of actual occupancy or use of portions of the Work actually occupied and equipment or systems fully utilized. Equipment or systems shall not be considered fully utilized until all parts of the Project served by the equipment or systems are actually occupied and used.
 - .6 University will pay all normal operating and maintenance costs resulting from its use of equipment in areas beneficially occupied.
 - .7 University will pay all utility costs which arise out of the Beneficial Occupancy.
 - .8 Contractor shall not be responsible for providing security in areas beneficially occupied.
 - .9 University will use its best efforts to prevent its Beneficial Occupancy from interfering with the conduct of Contractor's remaining Work.
 - .10 Contractor shall not be required to repair damage caused by University in its Beneficial Occupancy.
 - .11 Except as provided in this Article 9.6, there shall be no added cost to University due to Beneficial Occupancy.
 - .12 Contractor 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 Work, as determined by University's Representative, when the 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 Work for its intended purpose and a Certificate of occupancy has been issued by the University's Building Official.

9.7.2 When Contractor gives notice to University's Representative that the Work is substantially complete, unless University's Representative determines that the Work is not sufficiently complete to warrant an inspection to determine Substantial Completion, University's Representative will inspect the Work, and prepare and give to Contractor a comprehensive list of items to be completed or corrected before establishing Substantial Completion. Contractor 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 Contractor to complete all Work in accordance with the Contract Documents. University's Representative will make an inspection to determine whether the Work is substantially complete. If University's Representative's inspection discloses any item, whether or not included on the list, which must be completed or corrected before Substantial Completion, Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item. Contractor shall then submit a request for another inspection by University's Representative to determine Substantial Completion. Costs for additional inspection by University's Representative shall be deducted from any monies due and payable to Contractor.

9.7.3 When University's Representative determines that the 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 Contractor for security, maintenance, utilities, insurance, and damage to the Work.

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 Work except that Substantial Completion shall not commence the Guarantee to Repair Period for any equipment or systems that:

- .1 Are not fully operational (equipment or systems shall not be considered fully operational if they are intended to provide service to any portion of the building which the University has neither Beneficially Occupied nor accepted as Substantially Complete); 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 Contractor for Compensable Delays shall not apply to any delays occurring after the Work is substantially completed.

9.8 FINAL COMPLETION AND FINAL PAYMENT

9.8.1 Upon receipt of notice from Contractor 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 Neither final payment nor any retention shall become due until Contractor submits the following items to University's Representative:

- .1 The final Application For Payment and all submittals required in accordance with Article 9.3.
- .2 All guarantees and warranties procured by Contractor from Subcontractors, all operating manuals for equipment installed in the Project, as-built documents, and all other submittals required by the Contract Documents.
- .3 The Final Distribution of Contract Dollars in the form contained in the Exhibits.

9.8.3 The final payment shall be made, subject to the satisfaction of all other conditions to final payment, 35 days after the filing of the Notice of Completion.

9.8.4 Acceptance of final payment by Contractor shall constitute a waiver of all claims, except those previously made in writing and identified by Contractor 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 Contractor 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 Contractor 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 Work and other persons who may be affected thereby.
- .2 The 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 Contractor or Subcontractors.
- .3 Other property at the Project site and adjoining property.

10.2.2 Contractor 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 Work, Contractor shall exercise the utmost care and carry on such activities only under the supervision of properly qualified personnel.

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

10.2.5 Contractor shall not load or permit any part of the 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, Contractor shall act to prevent or minimize damage, injury, or loss. Contractor shall promptly notify University's Representative, which notice may be oral followed by written confirmation, of the occurrence of such an emergency and Contractor's action.

ARTICLE 11 INSURANCE AND BONDS

11.1 CONTRACTOR'S INSURANCE

11.1.1 Contractor 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 Contractor, 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 3.20 regarding the scope and extent of Contractor's liability for Repair of Damaged Work.

11.1.2 The following policies and coverages shall be furnished by Contractor:

- .1 COMMERCIAL FORM GENERAL LIABILITY INSURANCE covering all Work done by or on behalf of Contractor 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 Contractor by these Contract Documents. If the insurance under this Article 11.1.2.1 is written on a claims-made form, coverage shall continue for a period of not less than 3 years following termination of this Contract. Coverage shall provide for a retroactive date of placement prior to or 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 Contractor 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. Contractor shall also require all of its Subcontractors to maintain this insurance coverage.

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

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 Contractor to University. The Certificates of Insurance shall provide for no cancellation or modification of coverage without 30 days (10 days for non payment of premium) prior written notice to University.

11.1.5 In the event Contractor 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 Contractor and may be deducted from the Contract Sum.

11.1.6 Contractor's insurance as required by Article 11.1.2, shall, by endorsement to the policies, include the following:

- .1 University, University's officers, agents, employees, consultants, University's Representative, and University's Representative's consultants, regardless of whether or not identified in the Contract Documents or to Contractor in writing, will be included as additional insureds for and relating to the Work to be performed by Contractor and Subcontractors. This requirement shall apply to claims, costs, injuries, or damages, but only in proportion to and to the extent such claims, costs, injuries, or damages are caused by or result from the negligent acts or omissions of Contractor and Subcontractors. This requirement shall not apply to Worker's Compensation and Employer's Liability Insurance.

- .2 A Severability of Interest Clause stating 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.

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

11.1.8 Contractor shall, by mutual agreement with University, furnish any additional insurance as may be required by University. Contractor 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 Bid Form. The name of the insured must be the name under which the entity is licensed by the Contractors State License Board.

11.1.10 If insurance company refuses to use the Certificate of Insurance form as contained in the Exhibits, it must provide a Certificate of Insurance evidencing compliance with this Article and Special Provisions 1 through 3 on the Certificate of Insurance Exhibit by including an endorsement to its Certificate of Insurance form covering Special Provisions 1 through 3 exactly as these provisions appear on the Certificate of Insurance Exhibit.

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

11.2 BUILDER'S RISK PROPERTY INSURANCE

11.2.1 If and only if the Contract Sum exceeds \$200,000 at the time of award, 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. Contractor 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 Work and materials will be payable to University and Contractor as their respective interests, from time to time, may appear. Contractor 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 Contractor of full responsibility for loss of or damage to materials not incorporated in the Work, and for Contractor's tools and equipment used to perform the Work, whether on the Project site or elsewhere, or to relieve Contractor 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 Contractor.
- .2 Include a waiver of subrogation against Contractor, its agents, and employees.
- .3 Builder's Risk insurance coverage under this Article 11.2 will end on the date of Final Completion established by the University in any Notice of Completion issued by the University

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 Contractor 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 Exhibits 3 and 2.

11.3.2 The Payment Bond and Performance Bond shall each be in the amount of the Contract Sum.

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 Contractor 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. Contractor 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 Contractor shall be, on the date the Contract is signed by University, an admitted surety insurer (as defined in the California Code of Civil Procedure Section 995.120).

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 If a portion of the 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 Contractor's expense without adjustment of the Contract Time or the Contract Sum.

12.1.2 If a portion of the 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 Work and it shall be uncovered and replaced by Contractor. If such Work is in accordance with the Contract Documents, the costs of uncovering and replacing the Work shall be added to the Contract Sum by Change Order; and if the uncovering and replacing of the Work extends the Contract Time, an appropriate adjustment of the Contract Time shall be made by Change Order. If such Work is not in accordance with the Contract Documents, Contractor 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 1 year, unless a longer period of time is specified, commencing as follows:

- .1 For any 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, from the first date of such Beneficial Occupancy or actual use, as established in a Certificate of Beneficial Occupancy.
- .3 For all Work other than .1 or .2 above, from the date of Final Completion.

12.2.2 Contractor 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. Contractor 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 Contractor shall diligently and continuously prosecute such correction to completion. Contractor 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. Contractor 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, Contractor shall pay to University all reasonable costs of correcting such Defective Work. Contractor shall 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 such Defective Work or the correction of such Defective Work.

12.2.4 Contractor shall remove from the Project site portions of the Work and materials which are not in accordance with the Contract Documents and which are neither corrected by Contractor nor accepted by University.

12.2.5 If Contractor 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; and, in addition, University may remove the Defective Work and store salvageable materials and equipment at Contractor's expense.

12.2.6 If Contractor fails to pay the costs of such removal and storage as required by 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. Contractor shall be entitled to the proceeds of such sale, if any, in excess of the costs and damages for which Contractor 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 Contractor is liable to University, the Contract Sum shall be reduced by such deficiency. If there are no remaining payments due Contractor or the remaining payments are insufficient to cover such deficiency, Contractor shall promptly pay the difference to University.

12.2.7 Contractor's obligations under this Article 12 are in addition to and not in limitation of its warranty under Article 3.4 or any other obligation of Contractor under the Contract Documents. Enforcement of Contractor'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 Contractor under the Contract Documents. Establishment of the Guarantee To Repair Period relates only to the specific obligation of Contractor to correct the Work and in no way limits either Contractor's liability for Defective Work or the time within which proceedings may be commenced to enforce Contractor's obligations under the Contract Documents.

ARTICLE 13 TERMINATION OR SUSPENSION OF THE CONTRACT

13.1 TERMINATION BY CONTRACTOR

13.1.1 Subject to Article 13.1.2, Contractor 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 Contractor, any Subcontractor, or any employee or agent of Contractor 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 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 Contractor stating the nature of such default(s).
- .3 Repeated suspensions by University, other than such suspensions as are agreed to by Contractor under Article 13.3, 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, Contractor may, upon 10 days additional notice to University and University's Representative, and provided that the condition giving rise to Contractor's right to terminate is continuing, terminate the Contract.

13.1.3 Upon termination by Contractor, University will pay to Contractor the sum determined by Article 13.4.4. Such payment will be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract by Contractor pursuant to Article 13.1; and Contractor 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 Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
- .2 Contractor 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 Contractor's property.
- .4 The commencement or completion of any Work activity is 14 days or more behind the date set forth in the Contract Schedule for such Work activity, and which results in an Unexcusable Delay.
- .5 Contractor 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 Contractor 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 Contractor 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 Contractor fails to make prompt payment of amounts properly due Subcontractors after receiving payment from University.
 - .3 Contractor disregards Applicable Code Requirements.
 - .4 Contractor persistently or materially fails to execute the Work in accordance with the Contract Documents.
 - .5 Contractor is in default of any other material obligation under the Contract Documents.
 - .6 Contractor 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, University may, at its election and by notice to Contractor, terminate the Contract and take possession of the Project site and all materials, supplies, equipment, tools, and construction equipment and machinery thereon owned by Contractor; 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, Contractor shall remove any part or all of Contractor's materials, supplies, equipment, tools, and construction equipment and machinery from the Project site within 7 days of such request; and if Contractor fails to do so, University may remove or store, and after 90 days sell, any of the same at Contractor's expense.

13.2.4 If the Contract is terminated by University as provided in this Article 13.2, Contractor 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 Contractor. If such costs, expenses, losses, and liquidated damages exceed the unpaid balance of the Contract Sum, Contractor 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 Contractor 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 Contractor, 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, Contractor 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 Contractor 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, Contractor 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 Contractor for an adjustment of the Contract Sum or the Contract Time shall be made within 21 days after the end of the Work suspension. Contractor 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 Contractor. Upon such termination, Contractor agrees to waive any claims for damages, including loss of anticipated profits, on account thereof; and, as the sole right and remedy of Contractor, University shall pay Contractor in accordance with Article 13.4.4.

13.4.2 Upon receipt of notice of termination under this Article 13.4, Contractor 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 Contractor's obligations under Article 13.4.2, as to bona fide obligations assumed by Contractor prior to the date of termination.

13.4.4 Upon such termination, University shall pay to Contractor the sum of the following:

- .1 The amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination, less sums previously paid to Contractor.
- .2 Plus an amount equal to the lesser of \$50,000 or 5% of the difference between the Contract Sum and the amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination.
- .3 Plus previously unpaid costs of any items delivered to the Project site which were fabricated for subsequent incorporation in the Work.
- .4 Plus any proven losses with respect to materials and equipment directly resulting from such termination.
- .5 Plus reasonable demobilization costs.
- .6 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 Contractor is entitled in the event of termination of the Contract by University pursuant to Article 13.4; and Contractor will be entitled to no other compensation or damages and expressly waives same.

ARTICLE 14 STATUTORY AND OTHER REQUIREMENTS

14.1 NOT USED

14.2 NONDISCRIMINATION

14.2.1 For purposes of this Article 14.2, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.2.2 Contractor shall comply and shall ensure that all Subcontractors comply with Section 12900 through 12996, of the State of California Government Code.

14.2.3 Contractor agrees as follows during the performance of the Work:

- .1 Contractor 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). Contractor 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 contractor also agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, 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, application for membership, performance of service, application for service, or obligation for service in the uniformed services
- .2 Contractor 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 14.2. 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 Contractor is not a "responsible bidder" as to future contracts for

- which such Contractor may submit bids or (2) a basis for refusing to accept or consider the bids of Contractor 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 Contractor 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 Contractor that, unless it demonstrates to the satisfaction of University within a stated period that the violation has been corrected, Contractor's bids on future projects will not be considered.
 - .4 Contractor agrees that, should University determine that Contractor has not complied with this Article 14.2, Contractor 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 14.3 for violation of prevailing wage rates. Such penalty amounts may be recovered from Contractor; and University may deduct any such penalty amounts from the Contract Sum.
 - .5 Nothing contained in this Article 14.2 shall be construed in any manner so as to prevent University from pursuing any other remedies that may be available at law.
 - .6 Contractor 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 Contractor shall notify its Superintendent and other supervisory personnel of the nondiscrimination requirements of the Contract Documents and their responsibilities thereto.
 - .2 Contractor 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 Contractor 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, nonminority women, and minority men shall be available and given an equal opportunity for employment.
 - .4 Contractor 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 Contractor shall include the provisions of the foregoing Articles 14.2.3.2.1 through 14.2.3.2.6 in all subcontracts with Subcontractors, so that such provisions will be binding upon each such Subcontractor.

14.3 PREVAILING WAGE RATES

14.3.1 For purposes of this Article 14.3, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.3.2 Contractor shall comply and shall ensure that all Subcontractors comply with Sections 1770, 1771, 1772, 1773, 1774, and 1775 of the State of California Labor Code. Compliance with these sections is required by this Contract.

14.3.3 The State of California Department of Industrial Relations has ascertained the general prevailing per diem wage rates in the locality in which the 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. Contractor shall post a copy of the general prevailing per diem wage rates at the job site. By this reference, such schedule is made part of the Contract Documents. Contractor shall pay not less than the prevailing wage rates, as specified in the schedule and any amendments thereto, to all workers employed by Contractor in the execution of the Work. Contractor 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 Work. Contractor 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 Contractor 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. Contractor 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 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 17420 of the California Labor Code.

14.4 PAYROLL RECORDS

14.4.1 For purposes of this Article 14.4, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.4.2 Contractor 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 Work. All payroll records shall be certified as being true and correct by Contractor or Subcontractors keeping such records; and the payroll records shall be available for inspection at all reasonable hours at the principal office of Contractor 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 Contractor 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 Contractor awarded the Contract or performing the Contract shall not be marked or obliterated.

14.4.3 Contractor 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. Contractor shall inform University of the location of such payroll records for the Project, including the street address, city, and county; and Contractor 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 14.4 or with the State of California Labor Code Section 1776, Contractor shall have 10 days in which to comply following receipt of notice specifying in what respects Contractor must comply. Should noncompliance still be evident after the 10 day period, Contractor shall forfeit to University, as a penalty, \$25 for each day, or portion thereof, for each worker, until strict compliance is accomplished. Such forfeiture amounts may be deducted from the Contract Sum.

14.5 APPRENTICES

14.5.1 For purposes of this Article 14.5, the term Subcontractor shall not include suppliers, manufacturers, and distributors.

14.5.2 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 Contractor 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.

14.5.3 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 Work in the craft or trade to which the apprentice is indentured.

14.5.4 When Contractor or Subcontractors employ workers in any apprenticeship craft or trade on the Work, Contractor 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 Contractor 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 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 than 1 hour of apprentice work for every 5 hours of journeyperson work, except as permitted by law. Contractor 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.

14.5.5 "Apprenticeship craft or trade," as used in this Article 14.5, shall mean a craft or trade determined as an apprenticeship occupation in accordance with rules and regulations prescribed by the Apprenticeship Council.

14.5.6 If Contractor or Subcontractors employ journeymen 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, Contractor and Subcontractors shall contribute to the fund or funds in each craft or trade in which they employ journeymen or apprentices on the Work in the same amount or upon the same basis and in the same manner done by the other contractors. Contractor may include the amount of such contributions in computing its bid for the Contract; but if Contractor fails to do so, it shall not be entitled to any additional compensation therefor from University.

14.5.7 In the event Contractor willfully fails to comply with this Article 14.5, it will be considered in violation of the requirements of the Contract.

14.5.8 Nothing contained herein shall be considered or interpreted as prohibiting or preventing the hiring by Contractor 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.

14.6 WORK DAY

14.6.1 Contractor 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. Contractor shall forfeit to University, as a penalty, \$25 for each worker employed in the execution of this Contract by Contractor, 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 14.6 or in violation of the provisions of any law of the State of California. Such forfeiture amounts may be deducted from the Contract Sum. Contractor 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.

ARTICLE 15
MISCELLANEOUS PROVISIONS

15.1 GOVERNING LAW

15.1.1 The Contract shall be governed by the law of the State of California.

15.2 SUCCESSORS AND ASSIGNS

15.2.1 University and Contractor 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 Contractor.

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 Contractor'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.

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 Contractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Contractor 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 NOTICES

15.8.1 Except as otherwise provided, all notices, requests, demands, and other communications to be given under the Contract Documents shall be in writing and shall be transmitted by one of the following methods:

- .1 Personally delivered.
- .2 Sent by facsimile copy where receipt is confirmed.
- .3 Sent by courier where receipt is confirmed.
- .4 Sent by registered or certified mail, postage prepaid, return receipt requested.

15.8.2 Such notices and other communications in Article 15.8.1 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. Such notices and communications shall be given 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.

SUPPLEMENTARY CONDITIONS

1. 1.2 "OWNERSHIP AND USE OF CONTRACT DOCUMENTS," add paragraph 1.2.2 to read as follows:

"1.2.2 The University warrants only the Contract Documents in hard copy form. Copies of the contract Documents in any other form or media may contain inexactitudes, anomalies, errors, etc. In the event any of the contract Documents provided to the Contractor in any form or media other than hard copy are used or converted, the Contractor assumes all risks associated therewith."
2. NOT USED
3. NOT USED
4. 7.3 "CHANGE ORDER PROCEDURES" revise 2nd sentence of paragraph 7.3.2.7 to read as follows:

"Such rental charges shall be at rates, as approved by University Representative, not exceeding competitive rates obtainable from unrelated third parties in the area in which the Work is performed."
5. 7.3 "CHANGE ORDER PROCEDURES" revise paragraph 7.3.9.2.1 to read as follows:

".1 An error or omission in the Contract Documents which does not result in any Extra Work for which Contractor is compensated pursuant to Subparagraph 7.3.5; or . . "
6. 7.3 "CHANGE ORDER PROCEDURES" revise paragraph 7.3.9.2.2 to read as follows:

".2 University's decision to change the scope of the Work, where such decision is not the result of any default or misconduct of Contractor, and where the change in the scope of the Work does not result in any Extra Work for which Contractor is compensated pursuant to Subparagraph 7.3.5; or . . . "
7. 8.3 "DELAY" add paragraph 8.3.2 to read as follows:

"8.3.2 Unscheduled Power Outages:

 - a. The University may be subject to power outages during the performance of the contract. The Contractor should plan its schedule accordingly and take such other steps as it deems necessary to provide temporary power should outages occur. Any plan to provide temporary power shall be coordinated with and approved, in advance, by the University's Representative.
 - b. The Contractor agrees to bear the risk of any delays to the completion of the Work, or increase costs, attributable to such power outages."

8. MODIFICATION OF ARTICLE 8 – CONTRACT TIME

Rainy weather in excess of the following number of days will be granted a Contract Time extension pursuant to Article 8.4 of the General Conditions:

January - 7 days	July - 1 day
February 8 days	August - 1 day
March - 6 days	September - 1 day
April - 3 days	October - 2 days
May - 2 days	November - 3 days
June - 1 day	December - 6 days

9. 8.4 "ADJUSTMENT OF THE CONTRACT TIME FOR DELAY", add the following to 8.4.1.6.9

- .3 the Contractor must have employed all reasonable rain mitigation measures to enable the Work to continue on the day; and
- .4 all other conditions of Article 8 must be met.

10. 8.5 "COMPENSATION FOR DELAY" add paragraph 8.5.3 to read as follows:

"8.5.3 Contractor shall not be entitled to receive any compensation for delay for Contract Time extensions resulting from Extra Work. Where Contract Time extensions result from or are granted in change orders which authorize Extra Work, payment by University to Contractor in consideration of any such Extra Work, payment by University to Contractor in consideration of any such Extra Work, pursuant to Subparagraph 7.3.5, shall constitute compensation in full for delay, interruption or disruption resulting from or arising out of any such Extra Work."

11. 8.5 "COMPENSATION FOR DELAY" add paragraph 8.5.4 to read as follows:

"8.5.4 Compensation Delay damages, if any, will be paid to Contractor by University as part of the final payment."

12. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 11 – INSURANCE AND BONDS

Contractor shall furnish and maintain insurance in the amounts below.

The insurance required by 11.1.2.1 and 11.1.2.2 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

Minimum Requirement

following:

11.1.2.1 Commercial Form General Liability
Insurance-Limits of Liability

Each Occurrence-Combined Single Limit for Bodily Injury and Property	<u>\$2,000,000.00</u>
---	-----------------------

Products-Completed Operations Aggregate	<u>\$4,000,000.00</u>
---	-----------------------

Personal and Advertising Injury	<u>\$2,000,000.00</u>
---------------------------------	-----------------------

General Aggregate	<u>\$4,000,000.00</u>
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11.1.2.2 Business Automobile Liability Insurance-
Limits of Liability

Each Accident-Combined Single Limit for Bodily Injury and Property Damage	<u>\$1,000,000.00</u>
--	-----------------------

Insurance required by Paragraph 11.1.2.1 and 11.1.2.2 shall provide as follows: 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 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). This requirement shall not apply to Worker's Compensation and Employer's Liability insurance. If insurance company refuses to use the Certificate of Insurance form as contained in the Exhibits, it must provide a Certificate of Insurance evidencing compliance with this Article and Special Provisions 1 through 3 on the Certificate of Insurance Exhibit by including an endorsement to its Certificate of Insurance form covering Special Provisions 1 through 3 exactly as these provisions appear on the Certificate of Insurance Exhibit.

11.1.2.3 WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY –

(as required by Federal and State of California law).

11.1.2.4 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 is CPL or Business Auto policies for transporting or hauling of hazardous material. The insurance required by this paragraph 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 and include the University as Additional Insured by endorsement:

CONTRACTOR'S POLLUTION LIABILITY Minimum Requirements
Limits of Liability

Each Occurrence	\$ 1,000,000.00
Products-Completed Operations	\$ 1,000,000.00
General Aggregate	\$ 1,000,000.00

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 Subcontractors 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 \$ 1,000,000.00
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.

13. 14.4 "PAYROLL RECORDS," add paragraph 14.4.4 to read as follows:

.1 Contractor and every Subcontractor required to submit certified payrolls and labor compliance documentation shall use the FM International Labor Compliance Program software "LCPtracker™" provided by the University. The software is a web-based system, accessed by a web browser. Contractor and each Subcontractor will be provided a Log On identification and password to access the University's reporting system. Use of the system may entail additional data entry of weekly payroll information including, but not limited to: employee identification, labor classification, total hours worked and hours worked on this project, wage and benefit rates paid, etc. The required software shall be used regardless of the ability to interface with the contractor's or Subcontractor's payroll and accounting software or system. On-line training in the use of the system is available via the Internet. The University may elect to schedule training classes in the use of the LCPtracker™.

EXHIBITS

Exhibit 1	Certificate of Insurance
Exhibit 2	Payment Bond
Exhibit 3	Performance Bond
Exhibit 4	Application For Payment; Certificate for Payment
Exhibit 5A	Selection of Retention Options
Exhibit 5B	Escrow Agreement for Deposit of Securities In Lieu of Retention and Deposit of Retention
Exhibit 6	Submittal Schedule
Exhibit 7	Cost Proposal
Exhibit 8	Field Order
Exhibit 9	Change Order
Exhibit 10	Conditional Waiver and Release Upon Progress Payment
Exhibit 11	Unconditional Waiver and Release Upon Progress Payment
Exhibit 12	Summary of Builder's Risk Insurance Policy
Exhibit 13A	Report of Subcontractor Information
Exhibit 13B	Distribution of Contract Dollars Form
Exhibit 14	Self Certification-Contractor/Subcontractor Form
Exhibit 15	Material/Product Substitution Request
Exhibit 16	Automated Sprinkler Systems – Contractor's Material and Test Certificate for Underground Piping
Exhibit 17	Automated Sprinkler Systems – Contractor's Material and Test Certificate for Aboveground Piping
Exhibit 18	Certificate of Substantial Completion
Exhibit 19	Contractor Claim Form
Exhibit 20	Subcontractor Claim Form
Exhibit 21	Subcontractor Conditional Waiver and Release Upon Final Payment
Exhibit 22	Subcontractor Unconditional Waiver and Release Upon Final Payment
Exhibit 23	UCSB Construction Stormwater Quality Questionnaire



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):
INSURED	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	NAIC #	
	INSURER A :	
	INSURER B :	
	INSURER C :	
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 <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A				WC STATUTORY LIMITS <input type="checkbox"/> OTH-ER <input type="checkbox"/>
	PROFESSIONAL LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE						

Special Provisions:

- 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 ____ (name of project)____.
- 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 Forward to:

Campus Design & Facilities, Mail Stop 1030
University of California, Santa Barbara
Facilities Management, Bldg. 439
Santa Barbara, CA 93106-1030

OR

Via fax at (805) 893-8592 Attn: Contracting Services

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

BOND NUMBER: _____

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The Regents of the University of California ("The Regents") have awarded to _____
as Principal a contract dated the ____ day of _____, 20____, (the "Contract") for the work described as follows:

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 _____
as Surety, are held and firmly bound unto The Regents in the sum of _____ Dollars (\$_____),
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 _____, 20__.

Principal: _____
(Name of Firm)

Surety: _____
(Name of Firm)

By: _____
(Signature)

By: _____
(Signature)

(Printed Name)

(Printed Name)

Title: _____

Title: _____

NOTE: Notary acknowledgement for Surety and
Surety's Power of Attorney must be attached.

Address for Notices:

Ph: _____

Bond No.: _____

PERFORMANCE BOND

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 _____, 20____ the
"Contract"), which Contract is by this reference made a part hereof, for the work described as follows:

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

as Surety are held and firmly bound unto The Regents in the sum of
_____ dollars (\$_____), to be paid to The Regents or its successors and
assigns; 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 _____, 20____.

Principal: _____
(Name of Firm)

Surety: _____
(Name of Firm)

By: _____
(Signature)

By: _____
(Signature)

(Printed Name)

(Printed Name)

Title: _____

Title: _____

Address for Notices:

Ph: _____

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached

CERTIFICATE FOR PAYMENT

Project Name: Infrastructure Renewal Project Phase 1C

Contractor: _____

Project Number: FM170115L/986080

Application Number: _____

In accordance with the Contract Documents, based upon Project site checks and the data comprising the Application for Payment referenced below, the University's Representative certifies to Owner that, to the best knowledge, information and belief of The University's Representative, the Work has progressed as indicated in the Application for Payment, the quality of the Work is in accordance with the Contract Documents, and Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT REQUESTED ON APPLICATION FOR PAYMENT \$ _____

DEDUCTIONS (See attached Itemization \$ _____

AMOUNT CERTIFIED. \$ _____

UNIVERSITY'S REPRESENTATIVE:

OWNER:

(Name of Firm)

THE REGENTS OF THE
UNIVERSITY OF CALIFORNIA

By: _____
(Name)

By: _____
(Name)

(Title)

(Title)

Date: _____

Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to Contractor named herein. Issuance, payment, and acceptance of payment are without prejudice to any rights of Owner under the Contract.

APPLICATION FOR PAYMENT

Number: _____ Period to: _____

TO THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, SANTA BARBARA
AND UNIVERSITY'S REPRESENTATIVE: Telli Foster

FROM CONTRACTOR: _____

ADDRESS: _____

PROJECT NAME: Infrastructure Renewal Project Phase 1C

PROJECT NUMBER: FM170115L/986080

FACILITY: _____

CONTRACT DATE: _____

APPLICATION DATE: _____

CHANGE ORDER SUMMARY:

Additions

Deductions

Change Orders approved in previous months: Total: _____

Change Orders approved this month:

Number: Date Approved:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Total: _____

NET CHANGE BY CHANGE ORDERS: _____

Application is made for payment under the Contract as shown below and in Schedule 1 attached hereto:

- | | |
|---|----------|
| 1. ORIGINAL CONTRACT SUM | \$ _____ |
| 2. NET CHANGE BY CHANGE ORDERS | \$ _____ |
| 3. CONTRACT SUM TO DATE (Line 1 \pm Line 2) | \$ _____ |
| 4. TOTAL AMOUNT COMPLETED TO DATE (Column E on Schedule 1) | \$ _____ |
| 5. RETENTION: 5% of Completed Work (Column H on Schedule 1) | \$ _____ |
| a. Current Value of Securities Deposited in Escrow | \$ _____ |
| b. Current Value of Retention Deposited in Escrow | \$ _____ |
| c. Retention Held by University | \$ _____ |
| Current Retention held by University | \$ _____ |
| 6. TOTAL EARNED LESS RETENTION (Line 4 less Line 5) | \$ _____ |
| 7. TOTAL AMOUNT PREVIOUSLY PAID | \$ _____ |
| 8. CURRENT PAYMENT DUE (Line 6 less Line 7) | \$ _____ |
| 9. BALANCE TO FINISH, PLUS RETENTION (Line 3 less Line 6) | \$ _____ |

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: _____
(Name)

(Title)

DECLARATION

I, _____, hereby declare that I am the _____ of Contractor submitting this Application For 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 _____, State of _____ on _____, 20____.

(Signature)

(Print Name)

PROJECT Infrastructure Renewal Project Phase 1C

PROJECT NUMBER:FM170115L/986080

FACILITY:

CONTRACT DATE

APPLICATION DATE

PERIOD TO

CONTRACTOR

SCHEDULE 1
TO
APPLICATION FOR PAYMENT
COST BREAKDOWN

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>
	DESCRIPTION OF WORK ACTIVITY OR OTHER ITEM	SCHEDULED VALUE	% COMPLETE TO DATE	TOTAL AMOUNT COMPLETED TO DATE (C x D)	TOTAL AMOUNT COMPLETED ON PRIOR APPLICATION FOR PAYMENT	AMOUNT OF THIS APPLICATION (E - F)	RETENTION
<u>ITEM NO.</u>							

Infrastructure Renewal Project Phase 1C

PROJECT NAME: Infrastructure Renewal Project Phase 1C

PROJECT NUMBER: FM170115L/986080

CONTRACTOR: _____

APPLICATION NUMBER: _____

SCHEDULE 2
TO
APPLICATION FOR PAYMENT

CERTIFICATION OF CURRENT MARKET VALUE
OF SECURITIES IN ESCROW IN LIEU OF RETENTION

As of _____, 20____ (not earlier than 5 days prior to the date of the Application For Payment of which this certification is a part), the aggregate market value of securities on deposit in Escrow Account No.

Account No. _____ with _____
(Escrow Agent)

is _____ Dollars (\$_____).

(Escrow Agent)

(Contractor)

By: _____
(Name)

By: _____
(Name)

(Title)

Date: _____

Date: _____

NOTE: Notary acknowledgment for Contractor and Escrow Agent must be attached.

Infrastructure Renewal Project Phase 1C

PROJECT NAME: Infrastructure Renewal Project Phase 1C

PROJECT NUMBER: FM170115L/986080

CONTRACTOR: _____

APPLICATION NUMBER: _____

SCHEDULE 3
TO
APPLICATION FOR PAYMENT

LIST OF SUBCONTRACTORS

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:

<u>Name of Subcontractor</u>	<u>Subcontracted Work Activity</u>	<u>Date Work Activity Completed</u>
------------------------------	--	---

(Contractor)

By: _____
(Name)

(Title)

Date: _____

Infrastructure Renewal Project Phase 1C

PROJECT NAME: Infrastructure Renewal Project Phase 1C

PROJECT NUMBER: FM170115L/986080

CONTRACTOR: _____

APPLICATION NUMBER: _____

SCHEDULE 4
TO
APPLICATION FOR PAYMENT

DECLARATION OF RELEASE OF CLAIMS

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 dated _____, 20____, except those listed below:

SELECTION OF RETENTION OPTIONS

I (we): _____
(Contractor)

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:

in lieu of retention being withheld by University for the
above-referenced project.

(Type of security)

OR SELECT OPTION 3 _____ Check here for Option 3

herewith elect to have retention on the above-referenced
project paid directly into the Escrow Account.

(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)

(City, County)

(State, Zip Code)

On Behalf of Contractor*

On Behalf of University
Acknowledged and Approved

(Name)

(Name)

(Title)

(Title)

* Signature shall be by the authorized party who will sign the Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention ("Escrow Agreement").

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.

RETURN THIS AGREEMENT SIGNED BY CONTRACTOR AND ECROW AGENT TO:
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

Project No.: FM170115L/986080

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, whose address is University of California, Chair,
Construction Review Board, University of California, Office of the President, 1111 Franklin Street, 6th Floor,
Oakland, California 94607-5200, hereinafter called "University," and

.....
whose address is
hereinafter called "Contractor," and
a state or federally chartered bank in the state of California, whose address is:
..... 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:

Infrastructure Renewal Project Phase 1C, Project Number FM170115L/986080, in the amount of : \$ _____
dated _____. Alternatively, on written request of
Contractor, University shall deposit retention directly with Escrow Agent. 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—Facilities Management, Building 439, Santa
Barbara, California 93106; 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 _____ whose address is
(Name of Contractor)

_____ represents, covenants and warrants that the
(Address)

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
_____ of _____
(Title) (Name)

_____, that I am duly authorized to make this representation, and
(Name of Contractor)

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.

ON BEHALF OF UNIVERSITY:

ON BEHALF OF CONTRACTOR:

1. J. J. Wolever, Director, Design & Construction Services
(Name)

1. _____
(Name)

(Signature)

(Signature)

805/893-4581
(Telephone Number)

(Telephone Number)

(Signatures continued on following page.)

2. Jim Corkil, Director, Accounting Services & Controls
(Name)

(Signature)

805/893-5882
(Telephone Number)

2. _____
(Name)

(Signature)

(Telephone Number)

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:

By: _____
(Signature)

J. J. Wolever
(Printed Name)

Director, Design & Construction Services
(Title)

805/893-4581
(Telephone Number)

By: _____
(Signature)

Jim Corkil
(Printed Name)

Director, Accounting Services & Controls
(Title)

(Telephone Number)

Escrow Agent:

By: _____
(Signature)

(Printed Name)

(Title)

(Telephone Number)

Contractor:

By: _____
(Signature)

(Printed Name)

(Title)

(Telephone Number)

By: _____
(Signature)

(Printed Name)

(Title)

(Telephone Number)

SUBMITTAL SCHEDULE

Project Name: Infrastructure Renewal Project Phase 1C

Project Number: FM170115L/986080

Facility: _____

Contract Date: _____

Subcontractor: _____

Specification Section: _____

Work Activity: _____

Event	Scheduled Completion Date	Actual Completion Date	Calendar Days Required to Complete
1. Received by Contractor and Time for Checking			
2. First Delivered to University's Representative and Time for Checking			
3. Return to Contractor			
4. Corrections Completed and Time for Corrections			
5. Next Delivered to University's Representative and Time for Checking			
6. Return to Contractor			
7. Approval for Job Information			
8. Approval for Fabrication and Time for Fabrication			
9. Fabrication Completed			
10. Shipping Date and Time Enroute			
11. Delivery to Job			

COST PROPOSAL

FOR

Infrastructure Renewal Project Phase 1C

PROJECT NO. FM170115L/986080

Date: _____

Change Request No.: _____

Facility: _____

Contract Date: _____

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 titled, "Supporting Documentation for the Cost Proposal Summary."
2. Attach the form titled "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 Subparagraph 7.3.4 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 Additional Cost from Cost Proposal Summary): \$ _____
Refer to Article 7 of the General Conditions.

Submitted:

Received:

(Contractor)

(The Regents' Representative)

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

COST PROPOSAL SUMMARY

Project Name: Infrastructure Renewal Project Phase 1C

Change Request No. _____

Project No.: FM170115L/986080

Contractor Name _____

University of California Santa Barbara

		(1)	(2)	(3)	(4)
		Contractor	1st Tier Subs	2nd & Lower Tier Subs	Total
ACTUAL COSTS	1. Straight Time Wages/Salaries – Labor				
	2. Fringe Benefits and Payroll Taxes - Labor				
	3. Overtime Wages/Salaries - Labor				
	4. Fringe Benefits and Payroll Taxes - Overtime				
	5. Materials and Consumable Items				
	6. Sales Taxes (On line 5)				
	7. Rental Charges				
	8. Royalties				
	9. Permits				
	10. Actual Costs (Sum of lines 1-9)				
ALLOWANCE	11. Insurance & Bonds (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. ADDITIONAL COST (Sum of lines 10, 11, & 17; col. 4)				

Notes:(1) Additional Costs are from line 10 of the attached forms titled, "Supporting Documentation For the Cost Proposal Summary" for Contractor and each Subcontractor involved in the Extra Work.

(2) Round down all Additional Costs of 50¢ or less to the nearest dollar. Round up all Additional Costs of 51¢ or more to the nearest dollar.

SUPPORTING DOCUMENTATION FOR THE COST PROPOSAL SUMMARY
FOR Infrastructure Renewal Project Phase 1C
PROJECT NO. FM170115L/986080

Contractor/Subcontractor Name: _____ Change Order Request No.: _____

Work Activity: _____

University of California Santa Barbara

COST ITEM		COST ⁽¹⁾
ACTUAL COSTS	1. Straight Time Wages/Salaries – Labor	
	2. Fringe Benefits and Payroll Taxes -- Labor: _____ % of line 1	
	3. Overtime Wages/Salaries - Labor (Attach University Representative's written authorization)	
	4. Fringe Benefits and Payroll Taxes -- Overtime: _____ % of line 3	
	5. Materials and Consumable items	
	6. Sales Taxes: _____ % of line 5	
	7. Rental Charges (attach U.S. Army Corps of Engineers' Schedule)	
	8. Royalties	
	9. Permits	
	10. Total Direct Expense -- sum of lines 1-9	
TOTAL		

(Contractor's Company Name)

(Signature) ⁽²⁾

(Title)

(Date)

(Contractor's Company Name)

(Signature) ⁽³⁾

(Title)

- Notes:
- (1) Round-off all Costs to the nearest dollar.
 - (2) This form shall be prepared and signed by Contractor or Subcontractor actually performing the work activity indicated above.
 - (3) If this form is signed by a Subcontractor, it shall be reviewed and signed by Contractor certifying the accuracy of the information.

FIELD ORDER

University of California Facility: Santa Barbara

FIELD ORDER NO. _____

Project Name: Infrastructure Renewal Project Phase 1C

Project Number: FM170115L/986080

To Contractor: _____

Address: _____

DESCRIPTION OF CHANGE:

Estimated Adjustment
of Contract Sum: _____

Estimated Adjustment
of Contract Time: _____

(Name of University's Representative - typed or printed)

By: _____
(Signature)

(Title)

Date: _____

(Name of University's Designated Administrator -
printed)
(typed or printed)

(Signature)

(Title)

Date: _____

(Contractor Name - typed or

(Signature)

(Title)

Date: _____

Note: 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.

CHANGE ORDER

Project Name: Infrastructure Renewal Project Phase 1C _____
Project Location: UC Santa Barbara _____ Award Date: _____
Project Number: FM170115L/986080 _____ Start Date: _____
To Contractor: _____
Address: _____

Description of Change:

Adjustment of Contract Sum:

Original Contract Sum: _____
Prior Adjustments: _____
Contract Sum Prior
to this Change: _____
Adjustment for this Change: _____
Revised Contract Sum: _____

Adjustment of Contract Time:

Original Contract Time: _____ (Days)
Prior Adjustments: _____ (Days)
Change Time Prior
to this Change: _____ (Days)
Adjustment for this Change: _____ (Days)
Revised Contract Time: _____ (Days)

Contract time is/is not extended from _____ to _____
an extension of _____ calendar days.

Contractor waives any claim for further adjustments of the Contract Sum and the Contract Time related to the above-described change in the Work.

Recommended:

University's Representative

Reviewed and Recommended:

Project Manager:

Funds Sufficient:

Owner's Accounting Office

Accepted:

Contractor

By: _____
Name

Title

Approved:
Owner: The Regents of the University of California

By: _____
Name:

Title

Date: _____

**CONDITIONAL WAIVER AND
RELEASE UPON PROGRESS PAYMENT**

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

Name of Claimant: _____

Name of Customer: _____

Job Title/Location: Infrastructure Renewal Project Phase 1C, FM170115L/986080

Owner: _____

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.

Dated: _____

(Company Name)

By: _____
(Name)

(Title)

**UNCONDITIONAL WAIVER AND
RELEASE UPON PROGRESS PAYMENT**

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

Name of Claimant: _____

Name of Customer: _____

Job Title/Location: Infrastructure Renewal Project Phase 1C, FM170115L/986080

Owner: _____

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.

Dated: _____

(Company Name)

By: _____
(Name)

(Title)

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 any may be subject to different rates, deductibles, and terms and conditions (see page 13). 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: The 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 on the Certificate of Insurance in any one Occurrence for any one Insured Project, subject to the following limits and sublimits:

MASTER POLICY LIMITS

\$150,000,000 per project, per occurrence
\$ 25,000,000 per project, Joisted Masonry construction
\$ 25,000,000 per project, Wood Frame construction

NOTE: *This Limit of Liability will correspond with the Total Estimated Construction Cost as indicated on the original Builder's Risk Insurance Application. If the construction costs should increase, the Limit of Liability can be subsequently increased once prior notice has been given by the University's Representative to Willis Insurance Services of California, Inc.*

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary**

SUBLIMITS (percentage or dollar value, whichever is less):

1. \$25,000,000 for **Wood Frame Construction**
2. \$100,000 for **Pollution Cleanup Expenses**
3. 15% of the declared estimated Total Project Value, subject to a maximum of \$25,000,000 for **Demolition and Increased Cost of Construction**
4. 25% of the adjusted property damage loss, subject to a maximum of \$2,500,000 for **Expediting Expense/Extra Expense**
5. 10% of the declared estimated Total Project Value, subject to a maximum of \$10,000,000 for **Insured Property while Stored Off-site**
6. 10% of the declared estimated Total Project Value, subject to a maximum of \$10,000,000 for **Insured Property while in the Course of Inland Transit (continental US)**
7. 25% of the declared estimated Total Project Value, subject to a maximum of \$25,000,000 for **Debris Removal**
8. \$500,000 for **Plans, Blueprints and Specifications**
9. \$500,000 for **Trees, Grass, Shrubbery, Seed and Plants**
10. Total Project Value limit for **Water Damage** (prior sublimit is removed 9/1/14)
11. 10% of estimated Total Project Value, subject to a maximum of \$10,000,000 for Frost, Freeze, Falling of Ice (added 9/1/14)
12. 15% of the adjusted property damage loss, subject to a maximum of \$10,000,000 for **Green/LEED Rating System**
13. 10% of the adjusted property damage loss, subject to a maximum of \$50,000 for **Mold/Fungi**
14. 5% of the declared estimated Total Project Value, subject to a maximum of \$10,000,000 for additional **Architects, Engineering and Professional Fees**
15. \$100,000 for **Claims Preparation Expenses**
16. \$500,000 for **Fire Department Service Charges**

**REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary**

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, 2014 at 12:01AM and ends on September 1, 2017 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 Certificate Period specified in the project's Certificate of Insurance.

NOTIFICATION OF COVERAGE/TERMINATION: *The Certificate 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 Insurance Services of California, Inc. in order to ensure that coverage remains in force for the project.*

DEDUCTIBLES (tiered based on estimated completed Total Project Value at the time of loss)

NOTE: *The contractor shall be responsible for the deductibles.*

All Other Perils (except Water Damage; Electrical/Mechanical Breakdown and/or Hot testing)

\$25,000 for Projects **over** \$2,500,000

\$10,000 for Projects **under** \$2,500,000

Water Damage or Frost/Freeze/Falling Ice

\$100,000 for **all** projects

Electrical/Mechanical Breakdown and/or Hot Testing

\$50,000 for Projects **under** \$25,000,000

\$100,000 for Projects **between** \$25-\$100,000,000

\$250,000 for Projects **between** \$100-\$150,000,000

REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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 the Certificate of Insurance.
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 the Certificate of Insurance.
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 the Certificate of Insurance.
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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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 from, 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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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. FIRE DEPARTMENT SERVICE CHARGES

Subject to the stated sublimit, when property insured is destroyed or damaged by a peril insured, this Policy shall also pay for the cost of fire department service charges 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.

4. PLANS, BLUEPRINTS, AND SPECIFICATIONS

Subject to the stated sublimit, in the event of direct physical loss or direct physical damage to plans, blueprints or specifications by perils insured under this policy, this insurance shall also pay the costs of mechanical reproduction from originals stored off-site for plans, blueprints or specifications.

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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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 on the Certificate of Builder's Risk Insurance 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.

The following exclusions and limitations apply to this coverage extension:

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 be 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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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.

Notwithstanding 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.

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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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.

REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

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 Water Damage, Flood, Land Movement, or riots, one event shall be construed to be all losses arising during a continuous period of seventy-two (72) hours.

The Insured may choose the time from which any such seventy-two (72) hour 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.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
Master Builder's Risk Program
Coverage Summary

PROJECTS EXCLUDED AND/OR MUST BE UNDERWRITTEN SEPARATELY. THESE PROJECTS WILL BE SUBJECT TO DIFFERENT RATES, DEDUCTIBLES, AND TERMS AND CONDITIONS.

(A) Construction Cost exceeds:

- \$150 Million regardless of Construction Type (Standalone policy may apply on projects over \$100 Million)
- \$25 Million for Wood Frame (Standalone projects may apply on projects over \$5 Million)
- \$25 Million for Joisted Masonry
- \$50 Million for Structural Renovations

(B) Project involves:

- 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
- Standalone Projects for Water or Sewer Pipelines, Cut and Cover, Open Trench, Utility Relocations, 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

(C) Project requires coverage for:

- Land Movement (e.g. Earthquake)
- Flood
- Terrorism
- Delay in Completion

Project Name:Infrastructure Renewal Project Phase 1C

Project No.:FM170115L/986080

(NOTE: THIS EXHIBIT IS NOT TO BE SUBMITTED WITH BID)

EXHIBIT 13A

REPORT OF SUBCONTRACTOR INFORMATION

Sheet No. _____ of _____

Provide the following information for each contracting party including the Contractor and each Subcontractor regardless of tier.* Attach additional sheets if necessary.

1	2 A	2B	3	4	5	6	7		8			
Full Name of Business	Portion of the Work (Activity or Trade)	Dollar Amount	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*
(GC)												
(Sub 1)												
(Sub 2)												
(Sub 3)												
<div style="border-bottom: 3px double black; height: 10px; width: 100%;"></div>				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 = Disable 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.

September 15, 2003 (doc 10/15/02)

Revision: 0

LF/SF:EXRSI 1

FINAL DISTRIBUTION OF CONTRACT DOLLARS

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	
Full Name of Business	Street Address, City, State and ZIP	Telephone No / FAX No	Contact Name	Business categories				Contract Dollars	
				SBE*	DBE*	WBE*	DVBE*	Amount (\$)	Percent (%)
(GC)									
(Sub 1)									
(Sub 2)									
(Sub 3)									
Total Contract Amount = \$				Column 6 - Business Categories				SUBTOTALS	
				SBE = Small Business Enterprise				\$	
				DBE = Disadvantaged Business Enterprise				\$	
				WBE = Woman Business Enterprise				\$	
				DVBE = Disable 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.

**Refer to the Report of Subcontractor Information for license and other information.

SELF-CERTIFICATION

For the Contractor 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):

 Small Business Enterprise (SBE) - an independently owned and operated concern certified, or (Initial, if
applicable) 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](http://www.dgs.ca.gov/pd/Programs/OSDS/SBEEligibilityBenefits.aspx) at <http://www.dgs.ca.gov/pd/Programs/OSDS/SBEEligibilityBenefits.aspx>. The University may rely on written representation by the vendors regarding their status.

 Disabled Veteran Business Enterprise (DVBE) - a business that is at least 51% owned by one (Initial, if
applicable) 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.

 Disadvantaged Business Enterprise (DBE) - a business concern that is at least 51% owned by (Initial, if
applicable) 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.

 Women-Owned Business Enterprise (WBE) - a business that is at least 51% owned by a (Initial, if
applicable) 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.

 None of the above categories apply.
(Initial, if
applicable)

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:

(Print Name)

(Title)

(Signature)

(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, Santa Barbara, is requesting the information contained in this form and the accompanying Report of Subcontractor Information.
- The Small Business Coordinator at the University of California, Santa Barbara, is responsible for maintaining the requested information. The contact information for the Small Business Coordinators 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 Small Business Outreach Program Manager(s).

**MATERIAL/PRODUCT
SUBSTITUTION REQUEST**

To: _____

Project Name: Infrastructure Renewal Project Phase 1C

Project No. FM170115L/986080

We hereby submit for your consideration the following item instead of the specified item:

1. Section No. _____ Paragraph No. _____

2. Specified Item: _____

3. Proposed Substitution (Mfg., Type, Model, etc.): _____

4. Does substitution offer Owner a cost credit (including costs for changes by other trades)?

Yes _____ No _____ How Much? _____

5. Does this substitution offer earlier delivery or less construction time?

Yes _____ No _____ How Much and Why? _____

6. How does this substitution affect any dimensions, layout, or details of other trades as shown on the Drawings? _____

7. What are the specific differences between this substitution and the specified item? _____

8. Attach the following items as applicable (Check if attached):

- _____ Manufacturer's technical data.
- _____ Laboratory test or performance results.
- _____ Drawings and wiring diagrams of the proposed product.
- _____ Drawings and description of changes required by other trades.
- _____ Samples.
- _____ Manufacturer's guaranty and maintenance instructions.
- _____ 1/4 inch scale layout drawings of equipment and equipment rooms.

Undersigned agrees to pay for all added reviews, design, tests, and changes in the Contract Documents or construction as a result of the acceptance of this substitution, at no cost to Owner.

Submitted by (Firm) _____

Signature _____ Date _____

Typed Name _____

**AUTOMATIC SPRINKLER SYSTEMS
CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR
UNDERGROUND PIPING**

PROCEDURE

Upon completion of work, inspection and tests shall be made by the Contractor's Representative and witnessed by the University's Representative. All defects shall be corrected and system left in service before Contractor's personnel finally leave the job.

A certificate shall be filled out and signed by both representatives. Copies shall be prepared by approving authorities, University, and Contractor. It is understood the University's Representative's signature in no way prejudices any claim against Contractor for faulty material, more workmanship, or failure to comply with approving authority's requirements or local ordinances.

PROPERTY NAME		DATE	
PROPERTY ADDRESS			
PLANS	ACCEPTED BY APPROVING AUTHORITIES (NAMES)		
	ADDRESS		
	INSTALLATION CONFORMS TO ACCEPTED PLANS		<input type="checkbox"/> YES <input type="checkbox"/> NO
	EQUIPMENT USED IS APPROVED		<input type="checkbox"/> YES <input type="checkbox"/> NO
	IF NO, STATE DEVIATIONS		
INSTRUCTIONS	HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS EQUIPMENT?		<input type="checkbox"/> YES <input type="checkbox"/> NO
	IF NO, EXPLAIN		
	HAVE COPIES OF THE APPROPRIATE INSTRUCTIONS AND CARE AND MAINTENANCE CHARTS BEEN LEFT ON PREMISES		<input type="checkbox"/> YES <input type="checkbox"/> NO
	IF NO, EXPLAIN		
LOCATION OF SYSTEM	SUPPLIES BLDGS.		
UNDERGROUND PIPES AND JOINTS	PIPE TYPES AND CLASS		TYPE JOINT
	PIPE CONFORMS TO _____ STANDARD		<input type="checkbox"/> YES <input type="checkbox"/> NO
	FITTINGS CONFORM TO _____ STANDARD		<input type="checkbox"/> YES <input type="checkbox"/> NO
	IF NO, EXPLAIN		
	JOINTS NEEDING ANCHORAGE CLAMPED, STRAPPED, OR BLOCKED IN ACCORDANCE WITH _____ STANDATD		<input type="checkbox"/> YES <input type="checkbox"/> NO
	IF NO, EXPLAIN		
TEST DESCRIPTION	<p><u>FLUSHING</u>: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags as outlets such as hydrants and blow-offs. Flush at flows not less than 4000 GPM (1514 L/min) for 4-inch pipe, 600 GPM (1171 L/min) for 5-inch pipe. GPM (7570 L/min) for 12-inch pipe. When supply cannot produce stipulated flow rates, obtain maximum available.</p> <p><u>HYDROSTATIC</u>: Hydrostatic tests shall be made at not less than 2000 psi (13.6 bars) for 2 hours or 50 psi (3.4 bars) above static pressure in excess of 150 psi (10.2 bars) for 2 hours. Differential dry-pipe valve clappers shall be left open during test to prevent damage. All above ground piping leakage shall be stopped.</p> <p><u>LEAKAGE</u>: COMPLETE</p>		

**AUTOMATIC SPRINKLER SYSTEMS
CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR
UNDERGROUND PIPING**

FLUSHING TESTS	NEW UNDERGROUND PIPING FLUSHED ACCORDING TO _____ STANDARD		<input type="checkbox"/> YES	<input type="checkbox"/> NO
	BY (COMPANY)			
	IF NO, EXPLAIN			
	HOW FLUSHING FLOW WAS OBTAINED <input type="checkbox"/> PUBLIC WATER <input type="checkbox"/> TANK OR RESERVOIR <input type="checkbox"/> FIRE PUMP		THROUGH WHAT TYPE OPENING <input type="checkbox"/> HYDRANT BUTT <input type="checkbox"/> OPEN PIPE	
	LEAD-INS FLUSHED ACCORDING TO _____ STANDARD BY (COMPANY)		NUMBER REMOVED	
	IF NO, EXPLAIN			
	HOW FLUSHING FLOW WAS OBTAINED <input type="checkbox"/> PUBLIC WATER <input type="checkbox"/> TANK OR RESERVOIR <input type="checkbox"/> FIRE PUMP		THROUGH WHAT TYPE OPENING <input type="checkbox"/> HYDRANT BUTT <input type="checkbox"/> OPEN PIPE	
HYDROSTATIC TEST	ALL NEW UNDERGROUND PIPING HYDROSTATICALLY TESTED AT _____ PSI FOR _____ HOURS		JOINTS COVERED <input type="checkbox"/> YES <input type="checkbox"/> NO	
LEAKAGE TEST	TOTAL AMOUNT OF LEAKAGE MEASURED _____ GALS. FOR _____ HOURS			
	ALLOWED LEAKAGE _____ GALS. FOR _____ HOURS			
HYDRANTS	NUMBER INSTALLED	TYPE AND MAKE	ALL OPERATE SATISFACTORILY	
CONTROL VALVES	WATER CONTROL VALVES LEFT WIDE OPEN <input type="checkbox"/> YES <input type="checkbox"/> NO			
	IF NO, STATE REASON			
	HOSE THREADS OF FIRE DEPARTMENT CONNECTIONS AND HYDRANTS INTERCHANGEABLE <input type="checkbox"/> YES <input type="checkbox"/> NO			
	WITH THOSE OF FIRE DEPARTMENT ANSWERING ALARM			
REMARKS	DATE LEFT IN SERVICE			
SIGNATURES	NAME OF INSTALLING CONTRACTOR			

	TESTS WITNESSED BY			
	FOR PROPERTY UNIVERSITY (SIGNED)		TITLE	DATE
	FOR INSTALLING CONTRACTOR (SIGNED)		TITLE	DATE
ADDITIONAL EXPLANATION AND NOTES (Note: Add additional pages if required.)				

CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING

PROCEDURE Upon completion of work, inspection and tests shall be made by the Contractor's Representative and witnessed by the University's Representative. All defects shall be corrected and system left in service before Contractor's personnel finally leave the job. A certificate shall be filled out and signed by both representatives. Copies shall be prepared by approving authorities, University, and Contractor. It is understood the University's Representative's signature in no way prejudices any claim against Contractor for faulty material, more workmanship, or failure to comply with approving authority's requirements or local ordinances.										
PROPERTY NAME								DATE		
PROPERTY ADDRESS										
PLANS	ACCEPTED BY APPROVING AUTHORITIES (NAMES)									
	ADDRESS									
	INSTALLATION CONFORMS TO ACCEPTED PLANS <input type="checkbox"/> YES <input type="checkbox"/> NO EQUIPMENT USED IS APPROVED <input type="checkbox"/> YES <input type="checkbox"/> NO IF NO, STATE DEVIATIONS									
INSTRUCTIONS	HAS PERSON IN CHARGE OF FIRE EQUIPMENT BEEN INSTRUCTED AS TO LOCATION OF CONTROL VALVES AND CARE AND MAINTENANCE OF THIS EQUIPMENT? IF NO, EXPLAIN						<input type="checkbox"/> YES <input type="checkbox"/> NO			
	HAVE COPIES OF THE FOLLOWING BEEN LEFT ON THE PREMISES? 1. SYSTEM COMPONENTS INSTRUCTIONS <input type="checkbox"/> YES <input type="checkbox"/> NO 2. CARE AND MAINTENANCE INSTRUCTIONS <input type="checkbox"/> YES <input type="checkbox"/> NO 3. NFPA 25 <input type="checkbox"/> YES <input type="checkbox"/> NO									
LOCATION OF SYSTEM	SUPPLIES BLDGS.									
SPRINKLERS	MAKE	MODEL	YEAR OF MANUFACTURER	ORIFICE SIZE	QUANTITY	TEMPERATURE RATING				
PIPE AND FITTINGS	PIPE CONFORMS TO _____ STANDARD					<input type="checkbox"/> YES <input type="checkbox"/> NO				
	FITTINGS CONFORM TO _____ STANDARD					<input type="checkbox"/> YES <input type="checkbox"/> NO				
ALARM VALVE OR FLOW INDICATOR	ALARM DEVICE				MAXIMUM TIME TO OPERATE THROUGH TEST CONNECTION					
	TYPE	MAKE	MODEL	MIN.	SEC.					
DRY PIPE OPERATING TEST	DRY VALVE				Q.O.D.					
	MAKE	MODEL	SERIAL NO.	MAKE	MODEL	SERIAL NO.				
		TIME TO TRIP THROUGH TEST CONNECTION*	WATER PRESSURE	AIR PRESSURE	TRIP POINT AIR PRESSURE	TIME WATER REACHED TEST OUTLET*	ALARM OPERATED PROPERLY			
		MIN. SEC.	PSI	PSI	PSI	MIN. SEC.	YES	NO		
	WITHOUT Q.O.D.									
	WITH Q.O.D.									
	IF NO, EPLAIN									
MEASURED FROM TIME INSPECTOR'S TEST CONNECTION IS OPENED.										

AUTOMATIC SPRINKLER SYSTEMS
CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING

DELUGE & PREACTION VALVES	OPERATION <input type="checkbox"/> PNEUMATIC <input type="checkbox"/> ELECTRIC <input type="checkbox"/> HYDRAULIC							
	PIPING SUPERVISED <input type="checkbox"/> YES <input type="checkbox"/> NO				DETECTING MEDIA SUPERVISED		<input type="checkbox"/> YES <input type="checkbox"/> NO	
	DOES VALVE OPERATE FROM THE MANUAL TRIP AND/OR REMOTE CONTROL STATIONS						<input type="checkbox"/> YES <input type="checkbox"/> NO	
	IS THERE AN ACCESSIBLE FACILITY IN EACH CIRCUIT FOR TESTING <input type="checkbox"/> YES <input type="checkbox"/> NO						IF NO, EXPLAIN	
	MAKE	MODEL	DOES EACH CIRCUIT OPERATE SUPERVISION LOSS ALARM		DOES EACH CIRCUIT OPERATE VALVE RELEASE		MAXIMUM TIME TO OPERATE RELEASE	
		YES	NO	YES	NO	MIN.	SEC.	
TEST DESCRIPTION								
<p>HYDROSTATIC: Hydrostatic tests shall be made at not less than 2000 psi (13.6 bars) for 2 hours or 50 psi (3.4 bars) above static pressure in excess of 150 psi (10.2 bars) for 2 hours. Differential dry-pipe valve clappers shall be left open during test to prevent damage. All above ground piping leakage shall be stopped.</p> <p>FLUSHING: Flow the required rate until water is clear as indicated by no collection of foreign material in burlap bags as outlets such as hydrants and blow-offs. Flush at flows not less than 4000 GPM (1514 L/min) for 4-inch pipe, 600 GPM (1171 L/min) for 5-inch pipe. GPM (7570 L/min) for 12-inch pipe. When supply cannot produce stipulated flow rates, obtain maximum available.</p> <p>PNEUMATIC: Establish 40 psi (2.7 bars) air pressure and measure drop, which shall not exceed 1-1/2 psi (0.1 bars) in 24 hours. Test pressure tanks at normal water level and air pressure and measure air pressure drop, which shall not exceed 1-1/2 psi (0.1 bars) in 24 hours.</p>								
TESTS	ALL PIPING HYDROSTATICALLY TESTED AT _____ PSI FOR _____ HRS.						IF NO, STATE REASON	
	DRY PIPING PNEUMATICALLY TESTED <input type="checkbox"/> YES <input type="checkbox"/> NO EQUIPMENT OPERATES PROPERLY <input type="checkbox"/> YES <input type="checkbox"/> NO							
	DO YOU CERTIFY AS THE SPRINKLER CONTRACTOR THAT ADDITIVES AND CORROSIVE CHEMICALS, SODIUM SILICATE OR DERIVATIVES OF SODIUM SILICATE, BRINE, OR OTHER CORROSIVE CHEMICALS WERE NOT USED FOR TESTING SYSTEMS OR STOPPING LEAKS? <input type="checkbox"/> YES <input type="checkbox"/> NO							
	DRAIN TEST	READING OF GAGE LOCATED NEAR WATER SUPPLY TEST PIPE: _____ PSI			RESIDUAL PRESSURE WITH VALVE IN TEST PIPE OPEN WIDE _____ PSI			
	Underground mains and lead in connections to system risers flushed before connection made to sprinkler piping VERIFIED BY COPY OF THE U FORM NO. 85B <input type="checkbox"/> YES <input type="checkbox"/> NO FLUSHED BY INSTALLER OF UNDER-GROUND SPRINKLER PIPING <input type="checkbox"/> YES <input type="checkbox"/> NO OTHER _____ EXPLAIN _____							
BLANK TESTING GASKETS	NUMBER USED		LOCATIONS				NUMBER REMOVED	
WELDED PIPING <input type="checkbox"/> YES <input type="checkbox"/> NO								
WELDING	IF YES ...							
	DO YOU CERTIFY AS THE SPRINKLER CONTRACTOR THAT WELDING PROCEDURES COMPLY WITH THE REQUIREMENTS OF AT LEAST AWS D10.9, LEVEL AR-3?						<input type="checkbox"/> YES <input type="checkbox"/> NO	
	DO YOU CERTIFY THAT THE WELDING WAS PERFORMED BY WELDERS QUALIFIED IN COMPLIANCE WITH THE REQUIREMENTS OF AT LEAST AWS D10.9, LEVEL AR-3?						<input type="checkbox"/> YES <input type="checkbox"/> NO	
	DO YOU CERTIFY THAT WELDING WAS CARRIED OUT IN COMPLIANCE WITH A DOCUMENT QUALITY CONTROL PROCEDURE TO INSURE THAT ALL DISCS ARE RETRIEVED, THAT OPENINGS IN PIPING ARE SMOOTH, THAT SLAG AND OTHER WELDING RESIDUE ARE REMOVED, AND THAT THE INTERNAL DIAMETERS OF PIPING ARE NOT PENETRATED.						<input type="checkbox"/> YES <input type="checkbox"/> NO	
HYDRAULIC DATA NAMEPLATE	NAMEPLATE PROVIDED <input type="checkbox"/> YES <input type="checkbox"/> NO				IF NO EXPLAIN			
REMARKS	DATE LEFT IN SERVICE WITH ALL CONTROL VALVES OPEN:							
SIGNATURES	NAME OF SPRINKLER CONTRACTOR							
	TESTS WITNESSED BY							
	FOR PROPERTY UNIVERSITY (SIGNED)				TITLE		DATE	
	FOR SPRINKLER CONTRACTOR (SIGNED)				TITLE		DATE	
ADDITIONAL EXPLANATION AND NOTES (Note: Add additional pages if required.)								

EXHIBIT 18
CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT NAME: Infrastructure Renewal Project Phase 1C
CONTRACTOR: _____
PROJECT NO: FM170115L/986080
DATE OF ISSUANCE: _____

The Work has been reviewed and the date of Substantial Completion is hereby established as of the date of issuance above.

☐ A Certificate of Beneficial Occupancy has been issued by the University's Building Official

☐ A Certificate of Occupancy has been issued by the University's Building Official

Name

On
Month Date, Year

A list of items to be completed or corrected is included herein. The failure to include any items on such list does not alter the responsibility of Contractor to complete all of the Work in accordance with the Contract Documents.

In accordance with the Contract Documents, Contractor is notified as follows:

1. Without limitation of Contractor's obligation to fully complete the Work within the Contract Time, Contractor shall complete or correct the Work on the list of items attached hereto, within days from the date of Substantial Completion.
Number of Days

2. University will be responsible for: ☐ NONE ☐ The following Items:

3. Contractor shall be responsible for all Contract requirements except items or responsibilities of University set forth in Paragraph 2 above.

4. The per diem charge for liquidated damages will be reduced to the following:

_____ Per Day
(in words)
\$ _____ Per Day
(in figures)

5. List of items to be completed or corrected is attached hereto.

(SIGNATURES ON NEXT PAGE)

EXHIBIT 18
CERTIFICATE OF SUBSTANTIAL COMPLETION (continued)

UNIVERSITY'S REPRESENTATIVE:

(Typed or Printed Name)

(Signature)

(Title)

Date:

UNIVERSITY:

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

(Signature)

(Typed or Printed Name)

(Title)

Date:

cc: University Representative
Office of Risk Management
Lynn Tran, General Accounting
Contracting Services Department
Physical Facilities Department
Fiscal Department
J. Wolever
Contractor
Project File

EXHIBIT 19

Project Name: Infrastructure Renewal Project Phase 1C

Project Number: FM170115L/986080

GENERAL CONTRACTOR CLAIM CERTIFICATION

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:

____(Name of City if within a City, otherwise Name of County), in the

State of _____, _____ on _____.

(State)

(Date)

(Signature)

(Print Name)

(Name of Contractor)

SUBCONTRACTOR CLAIM CERTIFICATION

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: _____ (Name of City if within a City, otherwise Name of County), in the State of _____, on

_____,
(State) (Date)

(Signature)

(Print Name)

(Name of Subcontractor)

**CONDITIONAL WAIVER AND
RELEASE UPON FINAL PAYMENT**

Upon receipt by the undersigned of a check from

(Name of Contractor or Subcontractor)

in the sum of \$ _____

payable to _____

and when the check has been properly endorsed and has been paid by the bank upon which it is drawn, this document shall become effective to release any lien, stop notice, or bond right the undersigned has on the Project of The Regents of the University of California located at

FM170115L/986080
(Project Name, Project Number)

University of California, Santa Barbara Santa Barbara, California 93106-1030

to the following extent. This release covers a final payment for labor, services, equipment, or material furnished

to: _____
(Name of Contractor or Subcontractor)

through _____
(Date)

only and does not cover any retentions retained before or after the release date; extras furnished before the release date for which payment has not been received; extras or items furnished after the release date. Rights based upon work performed or items furnished under a written change order which has been fully executed by the parties prior to the release date are covered by this release unless specifically reserved by the claimant in this release. This release of any lien, stop notice, or bond right shall not otherwise affect the contract rights, including rights between parties to the contract based upon a rescission, abandonment, or breach of the contract, or the right of the undersigned to recover compensation for furnished labor, services, equipment, or material covered by this release if that furnished labor, services, equipment, or material was not compensated by the final payment. Before any recipient of this document relies on it, that party should verify evidence of payment to the undersigned.

Dated: _____

Company: _____

By: _____

Title: _____

February 20, 2004

**UNCONDITIONAL WAIVER AND
RELEASE UPON FINAL PAYMENT**

NOTICE: THIS DOCUMENT WAIVES 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 RELEASE FORM.

The undersigned has been paid and has received a final payment in the sum of

\$ _____

for labor, services, equipment, or material furnished to

(Name of Contractor or Subcontractor)

on the Project of The Regents of the University of California located at

Infrastructure Renewal Project Phase 1C FM170115L/986080

(Project Name, Project Number)

University of California Santa Barbara, Santa Barbara, California 93106-1030

and does hereby release any lien, stop notice, or bond right, that the undersigned has on the above referenced Project to the following extent. This release covers a final payment for labor, services, equipment, or materials furnished to

(Name of Contractor or Subcontractor)

through _____

only and does not cover any retention retained before or after the release date; extras furnished before the release date for which payment has not been received; extras or items furnished after the release date. Rights based upon work performed or items furnished under a written change order which has been fully executed by the parties prior to the release date are covered by this release unless specifically reserved by the claimant in this release. This release of any lien, stop notice, or bond right shall not otherwise affect the contract rights, including rights between parties to the contract based upon a rescission, abandonment, or breach of the contract, or the right of the undersigned to recover compensation for furnished labor, services, equipment, or material covered by this release if that furnished labor, services, equipment, or material was not compensated by the final payment.

Dated: _____

Company: _____

By: _____
(Name)

Title: _____

.....February 20, 2004

Exhibit 22

EXHIBIT 23
UCSB Construction Stormwater Quality Questionnaire
(Projects with less than one acre of soil disturbance)

This Stormwater Questionnaire is to be completed and signed by General Contractor. Construction activities may not commence until Stormwater Questionnaire is submitted, reviewed, and approved by the University Representative and Environmental Compliance Manager. The Contractor shall submit the completed Stormwater Questionnaire to the University Representative no fewer than 14 days prior to project start date.

Project Name: _____

Project Number: _____ Project Location: _____

University Representative: _____ UCSB Inspector: _____

Contractor: _____ Superintendent: _____

Contractor's Stormwater Manager: _____

Project Start Date: _____ Anticipated Completion Date: _____

Brief Description of the Project: _____

In the following sections, identify all potential pollution sources that could come into contact with stormwater leaving the Project. Describe the Best Management Practices (BMPs) that will be used to prevent pollution of the UCSB watershed. Refer to the UCSB BMP Handbook for a list of approved BMPs and BMP specification sheets.

Erosion Control

Does the Project have the potential to disturb soil (clearing, grading, excavating, and other similar activities)?

Total area of ground disturbance :

If soil is disturbed, what Erosion Control BMP(s) will be used to protect the UCSB watershed?

Temporary Sediment Control

Does the Project have the potential to pollute a water course such as a storm drain inlet, Campus Lagoon, Goleta Slough, Devereaux Slough, the Pacific Ocean, or any part of the UCSB Watershed?

..... Exhibit 23

Stormwater Questionnaire (under 1 acre)

If so, what Temporary Sediment Control BMP(s) will be used to protect the UCSB watershed?

Tracking Control

Do activities related to the Project have the potential to cause the tracking of pollutants from construction vehicles including sediment on a paved surface such as sidewalks, roadways, curbs, gutters, etc.?

If so, what Tracking Control BMP(s) will be used to protect the UCSB watershed?

Wind Erosion Control

Does the Project have the potential to cause discomfort or nuisance to the surrounding public from construction related dust?

If so, what Wind Erosion Control BMP(s) will be used to protect the surrounding public and the UCSB watershed?

Non-Stormwater Management

Does the Project have the potential to pollute the UCSB watershed with non-stormwater discharges?

If so, what Non-Stormwater Management BMP(s) will be used to protect the UCSB watershed?

Waste Management

Does the Project have the potential to generate waste (trash, construction debris, demolition, etc.) that has the potential to pollute the UCSB watershed?

If so, what Waste Management BMP(s) will be used to protect the UCSB watershed?

Pollutants and Pollution Sources

Will the Project require the use of:

- | | | |
|--|--|---|
| Acid <input type="checkbox"/> | Adhesives <input type="checkbox"/> | Asphalt <input type="checkbox"/> |
| Concrete Compound <input type="checkbox"/> | Curing Compound <input type="checkbox"/> | Detergent <input type="checkbox"/> |
| Fertilizer <input type="checkbox"/> | Glues <input type="checkbox"/> | Heavy Metals <input type="checkbox"/> |
| Lime <input type="checkbox"/> | Lubricant <input type="checkbox"/> | Organic Compounds <input type="checkbox"/> |
| Paint <input type="checkbox"/> | Pesticides/Herbicides <input type="checkbox"/> | Petroleum Products <input type="checkbox"/> |
| Plaster <input type="checkbox"/> | Portable Toilets <input type="checkbox"/> | Roofing Tar <input type="checkbox"/> |
| Sand <input type="checkbox"/> | Solvents <input type="checkbox"/> | Soil <input type="checkbox"/> |
| Wood Preservative <input type="checkbox"/> | | |

List any other chemical or substance not listed above that has the potential to pollute the UCSB watershed?

If a box was checked or a chemical listed, explain what BMP(s) will be used to properly handle these pollutants and to protect the UCSB watershed?

Post-Construction BMPs

Describe all permanent stormwater controls that will be constructed to reduce the volume and velocity of runoff and reduce the pollutants in the stormwater.

Attachments

Include a timeline of the activities that have the potential to pollute the UCSB watershed.
Include a site map.

Questionnaire completed by: _____

Date: _____

Signature: _____

For UCSB Use Only	
University Representative Reviewing	
Questionnaire:	
Signature	
Date	
Environmental Compliance Manager	
Approval:	
Signature	
Date	

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

SPECIFICATIONS

FOR

**INFRASTRUCTURE RENEWAL PROJECT
PHASE 1C**

FM170115L/986080

NOVEMBER 2016

PREPARED BY:

STANTEC CONSULTING SERVICES, INC.

**111 E. VICTORIA STREET
SANTA BARBARA, CA 93101**

OFFICE of DESIGN & CONSTRUCTION
FACILITIES MANAGEMENT DEPARTMENT
UCSB
BUILDING 439
SANTA BARBARA, CA 93106-1030

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SECTION 01010

SUMMARY OF WORK

PART 1 – GENERAL

1.01 WORK REQUIRED BY THE CONTRACT DOCUMENTS

- A. Provide all labor, materials, equipment, tools, transportation, insurance and services for the Project work consisting of the complete installation of storm drain and seawater waste lines within the Main Campus, as indicated on the drawings. Contractor shall coordinate all work schedules with the University Representative in advance as to not have multiple construction areas in different quadrants of the campus happening simultaneously. Site work associated with the project consists of removal and replacing of asphalt concrete, Portland cement concrete, irrigation and landscaping restoration, etc.

Contractor shall prepare the Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI), and be responsible for stormwater management during construction (See Division 1, Section 01560). Contractor shall pay any submittal fees and file the NOI with the Regional Water Quality Control Board (RWQCB), and file and pay for annual renewal and termination after the completion of the project construction. Contractor shall be responsible for providing manpower and facilities for implementing the approved stormwater management plan with sufficient stormwater control devices and maintain all record for stormwater management events. Contractor shall be responsible for the stormwater management activities for job site and adjacent areas during the entire construction period including off hours. Contractor is responsible for any and all fees served upon the project and the University for failing to comply with storm water management requirements.

Storm drain line construction will consist of new 24", 36", and 42" diameter watertight HDPE pipes with required fittings and manholes construction. The new storm drain pipe will intersect and connect to an existing 18" RCP pipe located south of East Entrance roundabout, extending toward the south along Lagoon Road, turning westerly along Channel Islands Road and outlet to an existing drainage structure located southwesterly of De La Guerra Commons. The new storm drain line will intercept additional four (4) existing storm drains that currently cross Lagoon Road with manholes, and transport their runoff.

Seawater waste line construction will consist of new 10" diameter watertight HDPE pipe with required fittings and manholes construction. The new seawater pipe will connect to an existing 10" seawater line stubout on UCen Road and at the southwesterly side of Ocean Sciences Engineering Building. The seawater line will extend toward the east, turning southerly along Lagoon Road, turning westerly along Channel Islands Road, flow toward the landscape/open space area on the east of University House, and outlet to an existing storm drain catch basin located on the north side of UCSB Lagoon. The seawater waste flow will then outlet to the Lagoon via the existing storm drain pipe.

Entire Lagoon Road pavement within the utility construction segment will be removed and reconstructed with new asphalt concrete and class 2 aggregate base structural section, Portland cement concrete pavement as a part of the project construction. Contractor shall construct traffic speed humps and restripe pavement markings to original conditions.

Contractor shall pothole to verify existing utilities within the entire construction segment prior to new utility construction, protect and/or remove existing utilities as required for the new utility construction. Construction staking shall be prepared by a California licensed surveyor as a part of the contractor tasks. Contractor shall be responsible to provide adequate site erosion control devices throughout the

entire construction period. No debris and silts shall depart from the construction site. The construction site must remain fenced at all times where feasible.

Contractor shall submit a construction traffic control plan to the University's Representative for approval prior to construction. Pedestrian traffic shall be open at all time, and a minimum one travel lane shall be opened for vehicular traffic at all times. Contractor shall place adequate traffic control devices including flag men to direct traffic as required during the entire construction period. Contractor shall be responsible for safety at the construction site and immediate adjacent area during the entire construction period including off-hours. At the conclusion of each working day, both travel lanes for vehicular traffic must be opened and safe for traffic.

Contractor shall maintain adequate construction markup and submit it to University's Representative for review and preparation of the record drawings at the completion of construction and prior to final acceptance of the project.

Contractor shall provide all labor, materials, equipment, tools, transportation, insurance and services for the Project work consisting of the complete installation of appropriate staging areas, on site construction office trailer, and any necessary facilities in support of the construction as indicated on the drawings. Contractor will restore all site locations to their original conditions after the completion of the project construction. Contractor shall be responsible for providing security, lighting, signage, and safety for the staging areas during construction, including off hours.

1.03 WORK SEQUENCE

- A. The Work shall be sequenced as specified in "Section 01015 – Work Sequence" to permit the University's continued use of portions of the site during construction. The Contractor shall provide the necessary or appropriate Work and facilities at the appropriate time to permit the University's use.

1.04 UNIVERSITY'S PRECONSTRUCTION ACTIVITIES

- A. Not Used.

1.05 CONTRACTOR'S USE OF PROJECT SITE

- A. Contractor's use of the Project site for the Work, storage, and staging are limited and restricted to the areas proposed on the Drawings and the time periods specified. Contractor will have limited lay down areas and will need to plan accordingly for deliveries. Allow for continued use of adjacent existing buildings by the University and by the public.
 - 1. The University will limit access through Campus for deliveries and for construction related traffic so the Campus' primary functions will not be disturbed. Use roads and access ways on Campus as indicated and as directed by University's Representative.
 - 2. Obtain approval from the University's Representative, whose determination will be final, for type, size, quantity, and locations of directional signs.
 - 3. Maintain unimpeded access along interior and exterior emergency access routes, pedestrian paths, bike paths, and roads at all time to permit passage of emergency vehicles. Comply with requirements in "Section 01500 - Construction Facilities and Temporary Controls" and "Section 01570 - Traffic Control".
 - 4. Dogs, pets of any kind, alcohol, illegal drugs, radios and music, and the wearing of "walkman" type equipment are not permitted on the premises.

5. Do not make “cat-calls”. Violations of this kind will call for automatic dismissal.
 6. Shirts shall be worn at all times.
 7. Hard-hats are required at all times.
 8. Potential staging areas are designated on the Contract Plans and must be replaced to preconstruction conditions at the end of the project.
- B. Work Hours: Lagoon Road is a major path of travel for access and egress to the entire East Side of campus. Vehicular travel is extremely high into campus from 7:45 AM to 8:15 AM and out of campus from 4:45 PM to 5:15 PM Monday through Friday. The Contractor shall alter the work to accommodate free flowing traffic during these times. Perform construction and related Work between the hours of 9:00 AM and 5:30 PM, Monday through Friday for work along Lagoon Road, south of UCEN Road intersection and along Channel Islands Road, areas adjacent to residential halls. No noise should occur around these resident halls outside of the construction hours unless approved by the University Representative. Work between the hours of 7:00 AM and 5:30 PM, Monday through Friday for work along Lagoon Road, north of the UCEN Road intersection. Other Work hours or days are subject to the approval of the University’s Representative. The University’s winter break occurs between December 12 and January 06 where most of the students are off campus. The Contractor shall plan on working multiple shifts and on weekends during this period in order to perform as much work as possible. The Contractor understands and agrees that the Contract involves performance in and around adjacent existing facilities. The Contractor recognizes that the Work must be coordinated to avoid disruption of normal functions. No additional compensation shall be granted to the Contractor as a result of the continuing use and function of adjacent facilities.
- D. Do not interrupt mechanical and electrical services or utilities to Campus facilities except at such times as will cause the least inconvenience to the University and only with the approval of the University’s Representative. Some utilities may only be interrupted after normal working hours and or off hours. The exact time of the interruption shall be arranged in advance with the University’s Representative. Give notices as specified in “Section 01060 – Regulatory Requirements”.
- E. Comply with noise and vibration requirements specified in “Section 01150 – Environmental Protection Requirements” and other Specifications sections.
- F. Protect existing facilities in place, as most hardscape is not designed for vehicular traffic.

1.06 SURROUNDING EXISTING SITE CONDITION SURVEY

- A. Prior to commencing the Work, Contractor, the University, and the University’s Representative shall tour the Project site together to examine and record damage to existing adjacent facilities, buildings, landscaping, parking lots, and improvements. This record shall serve as a basis for determination of subsequent damage due to Contractor’s operations and shall be signed by all parties making the tour. Cracks, sags, or damage to the existing buildings, facilities, landscaping, parking lots, and improvements not noted in the original survey, but subsequently discovered, shall immediately be reported in writing to the University’s Representative.
1. A type written and CD record is required for this survey. The Contractor shall provide the camera and camera operator. A duplicate copy shall be given to the University.
 2. The Contractor shall provide a digital camera and shall take detailed, still pictures of existing conditions of surfaces, equipment and adjacent improvements that might be misconstrued as damage related to demolition, removal and construction operations. Comply with the

requirements of “Section 01720 – Project Record Documents”. Provide an electronic copy to the University’s Representative prior to commencement of Work.

- B. Contractor shall be responsible for all repairs and the cost of repairs for damage caused by the Contractor. Repairs may extend past the damaged area in some instances depending on the type of construction.

1.07 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Do not damage existing piping, conduits, or equipment that is to remain whether or not specifically indicated on the Drawings.
- B. Execute excavation and demolition on the site and in the buildings with extreme care (by hand or small tools wherever appropriate) and at the sole responsibility, cost, and risk of the Contractor.
 - 1. The locations of known existing structures, topographical features, and major underground site utilities are indicated on the Drawings. These locations are based on the surveys and on UCSB Campus Atlas sheets as indicated in the “Information Available to Bidders” by the University. The “Information Available to Bidders” is provided solely for the bidders’ convenience and does not relieve the bidders of the responsibility for determining the accuracy of the information provided.
 - 2. Locate all known existing installations before proceeding with construction operations which may cause damage to such installations. The existing installations shall be kept in service where possible and damage to them shall be repaired immediately at no increases in Contract Sum.
 - 3. If other structures or utilities are encountered, which are not indicated on the Drawings or in the original construction drawings of previous constructions, request the University’s Representative to provide direction on how to proceed with the Work.
- B. Before starting Work indicated in the Contract Documents relating to existing utilities (electrical, sewer, water, heat, gas, fire lines, etc.) affecting any other building or system, the Contractor shall give the notice required in Section 01060 “Regulatory Requirements” to the University’s Representative and obtain approval in writing before proceeding with this phase of the Work.
- C. Do not interrupt mechanical and electrical services or utilities to the building or Campus facilities except at such times as will cause the least inconvenience to the University, and only with the approval of the University’s Representative. Contractor may be required to perform utility interruption after hours or during non-peak times.
- D. The University reserves the right to assess and anticipate the impacts of service interruptions and to stop or postpone the Work until a mutually satisfactory time and means can be agreed upon.
- E. If a structure or utility is damaged, take appropriate action to ensure the safety of persons and property and then immediately contact the University’s Representative.
- G. The Contractor in accordance with the Contract Documents shall disinfect water lines, which are cut into or broken. Contractor will notify University’s Representative prior to proceeding and coordinate all work with the appropriate University’s Facilities Management trade.

1.08 MATERIALS FURNISHED BY THE UNIVERSITY

- A. University and Contractor will simultaneously inspect deliveries for damage. If the University furnished items are damaged, defective, or missing upon delivery, the University will arrange for replacement.
 - 1. Contractor is responsible for uncrating or unpacking the items, for preparing them for inspection, and for repackaging and protecting them.
 - B. Contractor is responsible for identifying the delivery dates of Contractor provided materials as well as the University furnished items in the Contractor's Contract Schedule and for receiving, unloading and handling the furnished items at the site. The Contractor is responsible for storing and protecting the all furnished items from loss, theft and damage, including damage from exposure to the elements, and for repairing or replacing items damaged as a result of the Contractor's operations.
 - C. Provide a 20 day written notice to the University's Representative prior to the desired delivery date of University furnished items.
- 1.09 CONSTRUCTION ACTIVITIES UNDER OTHER CONTRACTS OR BY UNIVERSITY (INCLUDING BUT NOT LIMITED TO)
- A. Not Applicable.
- 1.10 UNIVERSITY'S EXHIBITS (FORMS)
- A. Use University's Exhibits (forms) for all documents related to the administration of the Work.
 - B. Use of Prolog WebSite, project management software.
 - 1. Contractor shall use Prolog Website, project management software, in conjunction with the University for the following construction administration documents and procedures:
 - a. Asking questions and receiving answers using the Prolog Request for Information module as a part of the Request for Information procedure.
 - b. Preparing the Submittal register, sending Submittal packages and receiving Submittal reviews using the Prolog Submittal module as a part of the Submittal procedure.
 - c. Submitting and Tracking Submittals
 - d. Field Inspection Reports
 - 2. The Prolog WebSite makes extensive use of DHTML. It is therefore a requirement that Contractor's browser supports this technology in order to successfully use the system. For best browser support it is recommended that Contractor use Microsoft's Internet Explorer 5.01 SP2 or higher. It is also necessary for Contractor to have Cookies enabled on their browser. In order to connect to the Prolog WebSite Contractor will need and will be given by the University a valid Username and Password. The University will provide instruction to the Contractor for the use of this software.
 - 3. Viewing of the various types of uploaded documents and files can be greatly enhanced by downloading the following free viewers:
 - Volo® Viewer from Autodesk® - for viewing .DWF type files in your browser.
 - Excel™ Viewer from Microsoft® - if you do not have Excel installed already.

Word™ Viewer from Microsoft® - if you do not have Word installed already.
PowerPoint™ Viewer from Microsoft® - if you do not have PowerPoint installed already.
Acrobat™ Reader from Adobe® - for viewing .PDF type files in your browser.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION

SECTION 01015
WORK SEQUENCE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Some Phases of the Work shall be performed during specific time periods for the purpose of:
 - 1. Access to University House at all times.
 - 2. Access to building parking
 - 3. Access to Bus stop locations
 - 4. Separate completion and delivery to the University.
 - 5. Managing adjacent vehicle, bicycle, and pedestrian circulation during construction.
 - 6. Providing required construction staging areas.
 - 7. Providing necessary temporary and permanent changes to adjacent parking lots, roads, paths, and improvements.
 - 8. Allowing the University and the public continued use of, and access to, facilities adjacent to and within the limits of the construction area.
- B. The Work required for each Phase, as indicated on the Drawings and as specified, shall achieve Substantial Completion within the time stipulated for the Phase, except as otherwise indicated.
- C. The "Section 01310, - Progress Schedules", shall reflect the Phases with their designated time periods and their affect on the sequencing of the Work and the use of the Project site.
- D. Even though certain time periods are designated for Phases of the Work, verify and coordinate the timing and demolition and construction of the Work in each area with the University's Representative. Obtain University's Representative approval for the timing and construction activities in each area.
- E. Verify dates, if any, indicated in this Section. Future dates in academic calendar years are not yet established, and the dates indicated are approximate. Obtain exact dates from University's Representative at the beginning of each academic year.
- F. Prior to commencement of the Work, the University will perform the preconstruction activities specified in "Section 01010 - Summary of Work", if any.

1.02 COORDINATION AND MAINTENANCE WITH OTHER ACTIVITIES

Other projects may be ongoing within and near the project site during the Contract period. The Contractor shall coordinate the work with the University's Representative, other Contractors, Utilities, etc., such that all projects can be diligently pursued to their completion. Interfacing work shall be shown on the project schedule. The Contractor shall include time for others to perform work within and near the project site and this shall be reflected in the project schedule. Delays due to interfacing with concurrent projects are considered avoidable and no compensation will be made therefore. The Contractor shall be responsible for obtaining plans for concurrent work when available. The Contractor shall include in the bid all costs for coordination, scheduling, meetings and delays that result from interfacing with concurrent work.

1.03 CONSTRUCTION BARRICADES AND FENCES

- A. Potential sequencing of the Work as specified in this Section, erect and dismantle construction barricades and fences as specified in "Section 01500 - Construction Facilities and Temporary Controls" in the appropriate sequence with the time periods specified. Complete barricades and fence erection and dismantling within the specified time periods.
- B. The Drawings do not indicate all potential and/or necessary general arrangements and alignments of the barricades and fences. Depending upon the portion of the Work to be performed, final arrangement and alignment shall be coordinated and approved by the University's Representative. Adequate signage for pedestrian, bicycle, and vehicle traffic must be maintained at all times. Any potential hazard must be signed and identified at all times. Bicycle reroutes, parking spaces, and vehicle reroute signage may extend past the immediate construction site and is the sole responsibility of the contractor to provide.

1.04 HAZARDOUS MATERIAL REMOVAL UNDER SEPARATE CONTRACT

- A. Hazardous material removal will require coordination with the University and be performed prior to each Phase.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION

SECTION 01035
REQUEST FOR INFORMATION

PART 1 – GENERAL

1.01 DESCRIPTION

- A. This Section contains the procedures to be followed by Contractor upon discovery of apparent errors, conflicts, or omissions in the Contract Documents, or upon having questions concerning interpretation.

1.02 PROCEDURES

A. Notification by the Contractor:

1. Submit all requests for clarification or additional information in writing to the University's Representative using the Request for Information (RFI) form provided by the University's Representative or a similar form approved by the University's Representative. Contractor may also be directed to use the University's Construction Management software, Prolog.
2. Number RFIs sequentially. Unless University's Representative directs otherwise, follow RFI number with sequential numerical suffix as necessary for each resubmission. For example, the first RFI would be "001". The Second RFI would be "002". The first resubmittal of RFI "002" would be "002.1". This process is performed when using the University's Construction Management software, Prolog.
3. Limit each RFI to one subject.
4. Submit a RFI if one of the following conditions occur:
 - a. Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
 - b. Contractor 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.
 - c. Contractor discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.
5. Contractor shall not:
 - a. Submit an RFI as a request for substitution.
 - b. Submit an RFI as a submittal.
 - c. Submit an RFI without thorough review of the Contract Documents.
 - d. 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 in their entirety.
 - e. Submit an RFI in an untimely manner without proper coordination and scheduling of Work or related trades. If Contractor submits an RFI contrary to the above, Contractor shall pay the cost of any review, which cost shall be deducted from the Contract Sum.

9. Contractor shall submit RFI immediately upon discovery and within a time frame so as not to delay the Contract Schedule while allowing the full response time described below. Contractor will insure that the RFI contains information related to potential schedule or cost impacts related to the RFI and potential resolutions.
 10. Assume a response to an RFI is a direction to perform work specified in the Contract Documents.
- B. Response Time:
1. University's Representative, whose decision will be final and conclusive, shall resolve such questions and issue instructions to the Contractor within a reasonable time frame. In most cases, RFIs will receive a response within 14 days.
 2. Should Contractor proceed with the Work effected before receipt of a response from University's Representative, within the response times described, any portion of the Work which is not in accordance with the University's Representatives' interpretations, clarifications, instructions, or decisions is subject to removal or replacement, and Contractor shall be responsible for all resultant losses.
- C. Failure to Agree: In event of failure to agree as to the scope of the Contract requirements, Contractor shall follow procedures set forth in Article 4 of the General Conditions.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01040

PROJECT COORDINATION

PART 1 GENERAL

1.01 DESCRIPTION

- A. This Section specifies administrative and supervisory requirements necessary for Project Coordination including, but not necessarily limited to:

1. Coordination.
2. General installation provisions.

1.02 COORDINATION

- A. Coordination: Coordinate construction activities included under various sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
1. Prepare similar memoranda for the University and Separate Contractors where coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to prevent conflicts and ensure orderly progress of the Work.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
- E. Coordinate the Work and do not delegate responsibility for coordination to any installer or supplier.
- F. Anticipate the interrelationship of all installers and suppliers and their relationship with the Work.
- G. Resolve differences or disputes concerning coordination, interference, or extent of Work between sections.

- H. Coordinate the Work so that portions of the Work are performed in a manner that minimizes interference with the progress of the Work.
- I. Ensure that anchorage, blocking, joining, and other detailing are provided as required.
- J. Do not obstruct spaces and installations that are required to be clear by Applicable Code or requirements of University.
- K. Do not cover any piping, wiring, ducts, or other installations until they have been inspected and approved and required certificates of inspection issued.
- L. Remove and replace Work that does not comply with the Contract Documents. Repair or replace Work or property damaged by removal and replacement operations with no adjustment of Contract Sum.

1.03 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Obtain approval from University's Representative.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights and/or Locations: Where mounting heights and/or locations are not indicated, install individual components at standard mounting heights and/or locations required by California Code of Regulations Title 24 and by the Americans with Disabilities Act, or if not required, as recognized within the industry for the particular application indicated. Refer questionable mounting height and/or location decisions to the University's Representative for final decision.
- J. Limiting Exposures: Supervise construction activities to ensure 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. Excessively high or low humidity
5. Thermal Shock
6. Air contamination or pollution
7. Water
8. Solvents and Chemicals
9. Light
10. Radiation.
11. Puncture and abrasion
12. Heavy traffic
13. Soiling, staining and corrosion
14. Bacteria, Microbial Infection or Contamination
15. Wildlife, Rodent and Insect infestation.
16. Combustion
17. Electrical current
18. High speed operation
19. Improper lubrication
20. Unusual wear or other misuse
21. Contact between incompatible materials
22. Destructive testing
23. Misalignment
24. Excessive weathering
25. Unprotected storage, Improper shipping or handling
26. Theft and Vandalism

1.02 PRODUCTS (Not Used)

1.03 EXECUTION (Not Used)

END OF SECTION

SECTION 01045

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Definition: "Cutting and patching" includes cutting into existing construction, or the removal of existing materials or finishes, to provide for the installation or performance of other Work. It also includes the subsequent fitting, patching, and restoration or removal required to restore surfaces to their original condition.
- B. Wherever existing equipment, materials, finishes, piping, or conduits are removed as part of the demolition or new Work, it is required that patching, cleaning, or the removal of existing non-conforming materials be performed.
 - 1. The resultant finish shall match the required surrounding existing surface or substrate.
- C. Refer to other sections of the Specifications for specific requirements and limitations.
- D. Comply also with Section 01120 "Alteration Project Procedures."
- E. Patching of hardscape is not permitted unless approved by the University's Representative.

1.02 SUBMITTALS

- A. Procedural Proposal for Cutting and Patching: Where prior approval of cutting and patching is required, submit proposed procedures for this Work well in advance of the time Work will be performed and request approval to proceed.
 - 1. Where cutting and patching of structural Work involves the addition of reinforcement, submit details and engineering calculations, both of which have been prepared by, and signed and sealed by, a structural engineer currently licensed in the State of California, to show how that reinforcement is integrated with the original structure to satisfy requirements.
 - 2. Approval by University's Representative to proceed with cutting and patching Work does not waive University's Representative's right to later require complete removal and replacement of Work found to be cut and patched in an unsatisfactory manner.
- B. When cutting and patching affects existing use of facilities or buildings, submit request for approval of planned dates that Work is to be performed.

1.03 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural Work in a manner that would reduce its load-carrying capacity or load-deflection ratio. Obtain approval from University's Representative before cutting structural Work.
- B. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or would

result in increased maintenance, or decreased operational life or safety. Obtain approval from University's Representative before cutting operational or safety elements.

- C. Visual Requirements: Do not cut and patch Work exposed on the exterior or in occupied spaces in a manner that would, in University's Representative's opinion, reduce the building's aesthetic qualities, or would result in visual evidence of cutting and patching. Obtain approval before cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner as judged by University's Representative.
- D. Requirements for the Removal of Existing Materials, Equipment, and Finishes: When materials, equipment, and finishes are indicated for removal in the Contract Documents, removal shall include not only the materials and finishes indicated, but also the adhesives, hardware, fasteners, brackets, moldings, fabrics, and other miscellaneous items associated therewith.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. For removal, use materials necessary to accomplish the type and extent of removal indicated, and that are in compliance with applicable codes and regulations.
- B. For patching, use materials that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect as approved by University's Representative. Use materials that will equal or surpass the existing materials.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Before cutting, examine the surfaces to be cut and patched and the conditions under which cutting and patching are to be performed. If unsafe or unsatisfactory conditions are encountered, take corrective action.
- B. Saw cut existing concrete pavement at existing score mark / construction joint and remove entire concrete pavement panel.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that may be exposed during cutting and patching operations.
 - 1. Prevent interference with use of adjoining areas or interruption of free passage to adjoining areas.
 - 2. Take all precautions necessary to avoid cutting existing pipe, conduit, ductwork, or equipment that is to remain, or that is to be relocated or removed later after provisions for bypassing them have been made.

3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting, removal, and patching. Proceed with cutting, removal, and patching at the earliest feasible time and complete without delay.

1. Cut existing and new construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. New Holes and Openings in Existing Concrete Structures:
1. Locate reinforcing with pacometer prior to drilling holes in existing concrete.
 2. Drill holes at corner of cuts. Do not overcut beyond drilled holes.
 3. Locate hole so as to provide 2" minimum cover at all reinforcing.
 4. Do not damage reinforcing.
 5. Notify University's Representative at least 48 hours prior to commencing any of this Work. Continuous inspection may be provided by the University.
 6. Obtain approval of type machine or equipment allowed for cutting.
- C. Cutting: Cut existing and new construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures and materials with the original installer and comply with its recommendations.
1. Where cutting is required use hand or small power tools designed for drilling, sawing, or grinding, not hammering and chopping, and as approved by University's Representative. To avoid marring all finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
 2. Do not use jack hammers unless permitted by University's Representative.
 3. Bypass utilities before cutting where it is necessary to maintain services in operation.
 4. Cut exploratory holes to allow inspection before removing entire area to avoid damage.
 5. If approved by University's Representative, cut concrete and masonry using a cutting machine such as a diamond or carborundum saw.
 6. Cut materials, wherever possible, to nearest existing joint or border. Sawcut concrete site pavements and walks at nearest score joint.
 7. Use saws to cut asphalt pavements to provide a straight, neat edge where paving patching will be necessary or where new paving will abut existing.
 11. When removing hardscape to be replaced adjacent to existing, double sawcut to prevent damage to existing.
- D. Removal: Remove existing adhesives, hardware, brackets, moldings, fabrics, and other miscellaneous items associated with materials, equipment, and finishes indicated to be removed. The condition of the resultant surface or substrate shall be such that the indicated Work of the Contract can be correctly and properly installed.
- E. Patching: Patch with seams which are durable and as invisible as possible.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner which will eliminate evidence of patching and refinishing. Not acceptable for hardscape.
-

3. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coat.
4. Where surface or finish materials have been removed, provide a smooth, clean substrate or wall or ceiling surface, free of adhesives or imperfections, ready for application of new Work.
5. Bring to original grade and section and resurface roads, streets, paths, and walks in which the surface has been removed, broken, or damaged, or in which the ground surface has caved or settled during the Work.

3.04 CLEANING

- A. Thoroughly clean areas and spaces where cutting, removal, and patching is performed or used as access.

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for field engineering services.
- C. Layout work must be performed by a licensed Land Surveyor.

1.02 SUBMITTALS

- A. Certificates: Submit a certificate signed by the Land Surveyor or Professional Engineer certifying that the location and elevation of improvements comply with the Contract Documents.
- B. Submit copies of surveyor's log and other pertinent information after establishing each benchmark, control point, batter board, and floor elevation. Submit to University's Representative for use in verification by the University's surveying consultant. Verification by the University's surveying consultant does not relieve Contractor of the responsibilities for layout and constructing the Work in accordance with the Contract Documents.
 - 1. Submit number of copies requested by University's Representative.
- C. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of Section 01700 - "Project Closeout".

1.03 QUALITY ASSURANCE

- A. Engage a Land Surveyor or an Engineer currently registered in the State of California to perform the services required.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The University's Representative will identify existing benchmarks and control points to be used in laying out the Work.
- B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
 - 1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
 - 2. Report to University's Representative and promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.
- C. Establish and maintain a minimum of two permanent benchmarks, referenced to data established by survey control points.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- D. Existing utilities and equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.
 1. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas, and water service piping.

3.02 PERFORMANCE

- A. Working from lines and levels established by existing buildings and the property survey, establish benchmarks and markers to set lines and levels of construction and elsewhere as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
 1. Advise entities engaged in construction activities, of marked lines and levels provided for their use.
 2. As construction proceeds, check major elements for line, level and plumb.
- B. Surveyor's Log: Maintain a continuous surveyor's log of control and other survey Work. Make this log available for reference.
 1. Record deviations from required lines and levels, and advise the University's Representative when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
 2. On completion of major site improvements, and other Work requiring field engineering services, prepare a certified survey showing dimensions, locations, angles and elevations of construction and sitework.
- C. Site Improvements: Locate and lay out site improvements, including pavements, curbs, walkways, structures, steps, retaining walls, lighting, planting areas, stakes for grading, fill and topsoil placement, utility slopes and invert elevations by instrumentation and similar appropriate means.
- D. Existing Utilities: Furnish information necessary to adjust, move or relocate existing structures, utility poles, lines, services or other appurtenances located in, or affected by construction. Coordinate with local authorities having jurisdiction.

END OF SECTION

SECTION 01060

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 GENERAL

- A. The Work shall be performed in accordance with Applicable Code Requirements and applicable requirements of all other regulatory agencies, including, but not limited to, the following:
1. Federal Occupational Safety and Health Act of 1970.
 2. California Code of Regulations:
 - a. Title 8, Industrial Safety.
 - b. Title 13, Hazardous Materials Transportation
 - c. Title 17, Public Health.
 - d. Title 19, Public Safety.
 - e. Title 20, Public Utilities and Energy
 - f. Title 21, Public Works.
 - g. Title 23, Underground Storage Tank Regulations.
 - h. Title 24, Building Standards: The California Amendments (C.A.) listed in the Matrix Adoption tables, under column headings "BSC", "DHS", "DOSH", "OSA/AC (State Agency)", and "SFM" shall be included in the Title 24 requirements.
 - (1) Part 1, Administrative Regulations.
 - (2) Part 2, California Building Code (Uniform Building Code with California Amendments.)
 - (3) Part 3, California Electrical Code (National Electrical Code with California Amendments.)
 - (4) Part 4, California Mechanical Code (Uniform Mechanical Code with California Amendments.)
 - (5) Part 5, California Plumbing Code (Uniform Plumbing Code with California Amendments.)
 - (6) Part 6, California Energy Code
 - (7) Part 7, California Elevator Safety Construction Code.
 - (8) Part 8, California Historical Building Code.
 - (9) Part 9, California Fire Code (Uniform Fire Code with California Amendments.)
 - (10) Part 12, State Referenced Standards Code.
 - i. Title 25, Housing and Community Development, as applicable to temporary or mobile offices and trailers. If unit is 8 feet or less in width, comply with requirements of the Department of Motor Vehicles.

- j. Title 26, Toxics.
- 3. California Health and Safety Code.
- 4. National Fire Protection Association (NFPA), latest edition:
 - a. "Life Safety Code", NFPA 101, latest adopted Edition.
 - b. "Standard for the Installation of Sprinkler Systems", NFPA 13, latest adopted Edition.
 - c. "Standard for the Installation, Maintenance, and Use of Protective Signaling Systems", NFPA 72, latest adopted Edition.
 - d. "Laboratories Using Chemicals", NFPA 45, latest edition.
- 5. U.S. Environmental Protection Agency.
- 6. Air Pollution Control District of Santa Barbara County.
- 7. Santa Barbara County Health Care Services, Environmental Health Division, for installations of boilers and other items requiring Health Division approvals. Environmental Health Division is the primary enforcement agency on the Campus for hazardous materials and hazardous waste laws.
- 8. Federal Americans With Disabilities Act, Title II, Subtitle A.
- 9. Goleta Water District – inspection, testing, sign-off, etc.
- 10. Goleta West Sanitary District.
- 11. California Coastal Commission Special Conditions
- 12. Caltrans Specifications and Supplemental Conditions
- 13. Other codes or Agency requirements listed in individual sections of the Specifications or elsewhere in the Contract Documents.

1.02 PUBLICATION DATES

- A. Unless otherwise specified, specific references to codes, regulations, standards, manufacturers' instructions, or requirements of regulatory agencies, when used to specify requirements for materials or design elements, shall mean the latest edition of each in effect at the date of submission of bids, or the date of the Change Order or Field Order, as applicable.

1.03 CONFLICTS

- A. If a conflict exists between referenced regulatory requirements or between referenced regulatory requirements and the Contract Documents, Contractor shall notify University's Representative and request that the conflict be resolved.

1.04 COPIES OF STANDARDS

- A. Each entity performing Work on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed for proper performance of the Work, the Contractor shall obtain copies directly from the publication source.

1.05 PERMITS AND NOTIFICATIONS

- A. The Contractor is not required to take out a general building permit on construction work on University's property, but certain Work or operations in the Contract require a permit be obtained or notification be made to University organizations before Work commences. The following listed Work or operations listed, at a minimum, require such action, after which additional steps may be required

before the actual Work or operation may commence or continue. Additional actions or notifications may be required in other locations in the Contract Documents.

1. For many Work activities or operations, more than one Campus organization must be notified.
2. During construction, the buildings and sites will be shared and jointly used by the University's personnel, students, and the Contractor. Safety and proper temporary controls by the Contractor are mandatory.
3. The Contractor is responsible for providing the protections, enclosures, barriers, fencing, and control of the use of corridors and elevator lobbies during construction, all as specified in Section 01500, "Construction Facilities and Temporary Controls," and all subject to the approval of the University's Representative. Minimum requirement is six (6) foot high chain link fence with green fabric attached to all surfaces.
4. Failure of the Contractor to obtain approvals; to provide and remove necessary or required protection, barriers and facilities; and to properly and adequately clean up after performing Work, will be grounds for the University's remedial or enforcement actions as permitted by the Conditions of the Contract.

B. Construction Safety:

1. Site Fencing: Preconstruction meeting.
2. Warning Signs, Lights, and Barricades: Preconstruction meeting.
3. Crane Use: Three working days notice.
4. Helicopter Operations: Three working days notice.
5. Accidents: Report as soon as possible.
6. Construction Staging Areas: Seven working days notice.
7. Scaffolding: Three working days notice.
8. Protective Tunnels/Covered Walks at Entrances or Exits: Three working days notice.
9. Use of Corridors and Elevator Lobbies: Two working days notice.

C. Hot Work Permits:

1. Hot work permits for the following activities are required. Provide two working days notice. There is no charge for hot work permits.
 - a. Metal welding.
 - b. Cutting metal with oxygen - acetylene torches.
 - c. Work involving open flames.

D. Notices Related to Fire Alarm Work and Fire Marshal Inspections:

1. Provide two working days notice.
2. For Work related to fire alarm connections/disconnections.
3. For Work related to possible alarm set-offs.
4. For inspections of fire protections systems.
5. For use of corridors and elevator lobbies.

E. Environmental Health:

1. Asbestos: Preconstruction meeting.
2. Confined Space Entry: Pre-construction meeting.
3. Noise Levels Generated Greater than 72 dBA: As required.
4. Hazardous Waste Disposal: As required.
5. Chemicals - Material Safety Data Sheets (MSDSs): As required.

6. Dust Creating Work (Earthwork, Demolition, Drilling Holes, Sanding in Occupied Buildings, Etc.): Two working days notice.
 7. Asbestos or Hazardous Materials Discovered During Demolition: Report as soon as possible.
 8. Vibration Causing Activities: Ten working days notice.
 9. Disinfection of Water System: Three working days notice.
 10. Fumes and Vapors (in occupied buildings): Ten working days notice.
- F. Residential Housing:
1. Utility Shutdowns and Scheduled Outages at Existing Buildings or Facilities: Ten working days notice.
 2. Unscheduled Outages: Report as soon as possible.
 3. Critical electrical shutdowns, as determined by Owner or University's Representative, may be required to be performed at night (12:00 midnight to 4:00 AM) or on weekends.
- G. Facilities Management:
1. Utility Shutdowns and Scheduled Outages at Existing Buildings or Facilities: Ten working days notice.
 2. Unscheduled Outages: Report as soon as possible.
 3. Critical electrical shutdowns, as determined by University or University's Representative, may be required to be performed at night (12:00 midnight to 4:00 AM) or on weekends.
- H. Fire Hydrant Shutdowns and Water Line Shutoffs Affecting Fire Protection.
1. Provide two working days notice.
- I. Traffic Control:
1. Work in Streets and affecting Pedestrian Walkways and Bike Paths: Five working days notice, and documented drawings detailing the control plan.
 2. Escort Service for Oversized Loads: Five working days notice.
 3. Traffic Control for Work Affecting Special Events and Buildings with Daily Deliveries: 5 working days notice.
 4. Temporary Detours for Vehicles, Bicycles, and Pedestrians: 5 working days notice.
 5. Comply with traffic control requirements in Section 01570 "Traffic Control".
- J. Parking Lot Control:
1. Permits & Use of Parking Lots: Five working days notice.
 2. Vehicles in Staging Areas or on Lawns/Landscaped Areas: Five working days notice.
 3. Comply with parking requirements in Section 01500 "Construction Facilities and Temporary Controls".
- K. Use of Lawns and Landscaped Areas Prior to Construction and for Temporary Offices or other Uses.
1. Irrigation System Shutoff or Moving Irrigation Equipment: Three working days notice.
- L. Notification Prior to Testing Reclaimed Water and Irrigation Lines for Cross-Connections with Potable Water Lines.
1. Provide three working days notice.
- M. Work Affecting Persons with Disabilities:
1. Dangers and Temporary Changes in Paths or Walks: Five working days notice.
-

2. Barricades and Barriers at Trenches or Excavations: Five working days notice.
- N. Work in or Affecting Buildings, Areas, or Rooms That Are to Remain in Use During Construction: Call Project Manager, Affected Department's Management Services Officer (MSO), and Environmental Health and Safety.
1. Work Other than Normal Working Hours, Including Nights, Weekends, and Holidays: Number of days notice required in the Contract Documents or as directed by Project Manager.
 2. Work in or Adjacent to Buildings, Offices, Classrooms, Auditoriums, and Outdoor Areas: Number of days notice required in the Contract Documents or as directed by Project Manager.
 3. In Work affecting occupied buildings, consult with Environmental Health and Safety prior to commencement of Work. Discuss measures necessary to prevent problems that may affect the health and safety of building occupants. Where barriers are provided separating construction areas from occupied areas, post dated warning signs and informational signs explaining reasons for barrier and its required maintenance.
- O. Communication Services:
1. Inspection of the following activities related to communication, telephone, and data systems is required. Provide two working days notice. There is no charge.
 - a. Staked locations of manholes, pullboxes, handhold boxes, and duct trenches.
 - b. Completed excavations for manholes, pullboxes, handhold boxes, and duct trenches.
 - c. Manholes and pullbox orientations and duct installations.
 - d. Mandrel testing of ducts.
- P. High Voltage Work:
1. Comply with requirements specified in Section 01500 "Construction Facilities and Temporary Controls" and with requirements specified in Division 16.

1.06 CONFINED SPACE PERMITS

- A. Confined spaces on the Campus are defined as spaces with the concurrent existence of the following conditions:
1. Existing ventilation is insufficient to remove dangerous air contamination and/or oxygen deficiency that may exist or develop.
 2. Ready access or egress for the removal of a suddenly disabled employee is difficult due to the location and/or size of the opening(s).
- B. The following are considered confined spaces on Campus:
1. Manholes, electrical vaults and communication vaults.
 2. Sewage lift stations.
 3. Acid pits.
 4. Sea water filter tanks, pump station and storage tanks.
 5. Crawl space under the old pool.
 6. Boilers, steam generators and fire boxes.
 7. UCEN sewer access tunnel.
 8. Free electron laser tank, inside Laser Lab in Physics Building #572.
 9. SF₆ storage tank, semi-underground, south of Physics Building #572.
 10. Any other area that fits the definition of a confined space in "A" above.

- C. Permits: A UCSB Confined Space Entry Permit for Contractors must be obtained from the University before Work is performed in a confined space.

1.07 EMERGENCY PHONE NUMBERS

- A. For fire, police, and medical emergencies, call:
 - 1. On Campus Phones: 9-911.
 - 1. Off-Campus Phones: 911.

1.08 OFF-CAMPUS PERMIT

- A. Contractor shall be responsible for obtaining approval for traffic control and staging area for off-campus Work from governing agencies, i.e., City of Santa Barbara, County of Santa Barbara, Caltrans, Goleta Sanitary District, Goleta West Sanitary District, etc.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION

SECTION 01090

ABBREVIATIONS, SYMBOLS AND DEFINITIONS

PART 1 - GENERAL

1.01 ABBREVIATIONS

- A. Abbreviations or acronyms of names of organizations, associations, and titles may appear in the Contract Documents. Where such acronyms or abbreviations are used, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision.
1. The following acronyms and abbreviations are referenced in the Contract Documents. Names, addresses and telephone numbers are subject to change and are believed to be, but are not assured to be, accurate and up to date as of the date of Contract Documents.
 2. For acronyms and abbreviations refer to the "Encyclopedia of Associations", published by Gale Research Co., available in most libraries.
 3. Refer to the individual sections of Specifications for other names and abbreviations of trade associations and standards applicable to specific portions of the Work. In particular, refer to Division 15 for names and abbreviations applicable to mechanical Work, and refer to Division 16 for names and abbreviations applicable to electrical Work.
- B. Drawing Abbreviations: Abbreviations used on the Drawings are shown thereon.
- C. If additional abbreviations or acronyms are used that are not included in the above referenced list, request clarification or meaning from the University's Representative.

1.02 SYMBOLS

- A. Symbols used only on the Drawings are shown thereon.

1.03 DEFINITIONS

- A. The following terms, when used on the Drawings or in the Specifications, shall have the following meanings:

<u>TERM</u>	<u>MEANING</u>
ADEQUATE; CAREFUL; PROPER; SUFFICIENT; SUITABLE; SATISFACTORY	These terms refer to interpretation by University's Representative, and are subject to approval upon request.
APPLICABLE CODES	Codes listed in Section 01060.

APPROVED	Where used in conjunction with the University's Representative's response to submittals, inquiries, and claims by the Contractor, "approved" will be limited to the responsibilities specified in the General Conditions. Approval does not release Contractor from responsibilities to fulfill the requirements of the Contract Documents.
AS DIRECTED	As directed by the University's Representative."
AS REQUIRED OR AS NECESSARY	As required by Applicable Code Requirements; by good building practice; by the condition prevailing; by the Contract Documents; by University, or by the University's Representative".
AS SELECTED	As selected by the University's Representative."
BY OTHERS OR N.I.C.	Work on this Project that is outside the scope of Work to be performed by the Contractor under this Contract, but that will be performed by University, Separate Contractors, or other means.
EQUAL	Of same quality, appearance, and utility to that specified, as determined by University's Representative. The Contractor bears the burden of proof of equality.
EXPERIENCED	Unless specified otherwise, means having successfully completed a minimum of 5 previous projects similar in size and space to this Project, being familiar with the precautions required, and having complied with requirements of the authority having jurisdiction.
FURNISH	Supply only, not install", unless required to be provided or installed elsewhere in the Contract Documents.
INCLUDE	Include/including, without limitation.
INDICATED	A cross-reference to graphic representations, notes or schedules on the Drawings, to other paragraphs in the Specifications, and to similar means of recording requirements in Contract Documents.
INSTALL	"Install or apply only, not furnish", unless required to be provided or furnished elsewhere in the Contract Documents.
INSTALLER	"The entity" (person or firm) engaged by Contractor for performance of a particular unit of Work. Installers are required to be experienced and considered expert in the operations they are performing.

MANUFACTURER'S DIRECTIONS,
INSTRUCTIONS, RECOMMENDATIONS,
SPECIFICATIONS

Manufacturer's written directions, instructions,
recommendations, specifications.

MUST; SHALL; TO

When used as a directive to Contractor, these terms
indicate a mandatory action.

NECESSARY

Essential to completion of Work.

OFF SITE

Outside the Work area as shown on the Drawings or
outside the Project site.

UNIVERSITY-FURNISHED, CONTRACTOR-
INSTALLED

"To be furnished by the University at its cost and
installed by the Contractor as part of the Work."

PROJECT SITE/JOB SITE

Space available to Contractor for performance of the
Work, either exclusively or in conjunction with others.

PROVIDE

"Furnish and install".

SHOWN

"As indicated on the Drawings or in the Specifications".

SITE

Geographical location of the Project.

SPECIFIED

As written or indicated in the Contract Documents".

SUBMIT

"Submit to the University's Representative".

OWNER

"University"

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION

SECTION 01100

SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 GENERAL

- A. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or other hazardous materials which have not been rendered harmless, Contractor shall immediately stop Work in the area affected and report the condition to the University and University's Representative in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the University and Contractor if in fact the material is asbestos, PCB, or other hazardous materials and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos, PCB, or other hazardous materials, or when such materials have been rendered harmless.
- B. Except as otherwise specified, in the event Contractor encounters on the Project site material believed to be of an archaeological or paleontological nature, activity which could damage or destroy such resources shall be temporarily suspended until the material and site has been evaluated by a non-University archaeologist recognized by the State Office of the Historic Preservation. Mitigation measures will be developed and directed by University.
 - 1. Do not resume Work in the affected area until directed by University's Representative.
 - 2. Vehicle use, unauthorized collecting of artifacts, or other activities which would disturb or destroy the artifacts is prohibited.
- C. Continue the Work in other locations not subject to possible contamination or affected by the archaeological or paleontological material.
- D. Maintain accurate records of delays and extra labor and materials, if any, caused by encountering the suspected hazardous, archaeological, or paleontological material.
 - 1. Submit such records daily to University's Representative, or at such other time interval as directed by University's Representative.

1.02 DEMOLITION NOTIFICATION

- A. Notify the Santa Barbara County Air Pollution Control District (APCD) in accordance with APCD regulations before performing any demolition on Campus. Pay required fee.
 - 1. Notification shall be a minimum of 10 days prior to demolition.
 - 2. Submit copy of Contractor's APCD notification to University's Representative and to University Environmental Health and Safety Department.

1.03 LEAD-CONTAINING MATERIALS

- A. The University has conducted a limited survey of the affected buildings to provide adequate disclosure to the Contractor that Lead Painted Surfaces do exist. The Contractor shall perform the appropriate exposure assessments, provide workers with appropriate protection, and protect the Work environment and adjacent members of the public and the University's personnel. Contractor must comply with all

relevant Federal, State and local regulations including but not limited to CFR Part 1926.62 and CCR Section 1532.1. Contractor is required to perform waste characterization, if needed, per Cal/EPA requirements. Contractor is to provide EH&S and University's Representative with a copy of the exposure assessment within 5 days of completion. Contractor is to provide EH&S and University's Representative with a copy of all waste characterization reports, if necessary, prior to disposal. An EH&S Representative must sign all hazardous waste manifests.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01120

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedural requirements.
- B. Rehabilitation and renovations of existing spaces and materials.

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work.
- B. Section 01045 - Cutting and Patching.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in individual Sections.
- B. Match existing products and construction for patching and extending Work.
- C. Determine type and quality of existing products by inspection and necessary testing, and workmanship by use of existing as a standard. Presence of a product, finish, or type of material, requires that patching, extending, or matching shall be performed as necessary to make Work complete and consistent with the existing quality.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that demolition is complete, and areas are ready for installation of new Work.
- B. Remove unsuitable material not marked for salvaging, such as rotten wood, rusted metals, and deteriorated masonry and concrete; replace materials as specified for finished Work.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surfaces and remove surface finishes to provide for proper installation of new Work and new finishes.
- E. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

3.03 INSTALLATION

- A. Coordinate Work of alterations and renovations to expedite completion sequentially and to accommodate University occupancy.
- B. Spaces and finishes shall be completed in all respects including operational, mechanical, and electrical systems.

- C. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to original condition.
- D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent new finishes.
- E. Install products as specified in individual Sections.

3.04 TRANSITIONS

- A. Where new Work abuts or aligns with existing, make a smooth and even transition. Patched Work shall match existing adjacent Work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to University's Representative.
- C. Comply also with "Cutting and Patching" Section.

3.05 ADJUSTMENTS

- A. NOT USED

3.06 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- B. Repair substrate prior to patching finish.

3.07 FINISHES

- A. Finish surfaces as specified in individual Sections.
- B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

END OF SECTION

SECTION 01150

ENVIRONMENTAL PROTECTION REQUIREMENTS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Provide and maintain during the Contract environmental protection as specified herein. Provide protective measures to control pollution, and provide corrective measures required to correct conditions that develop during construction. Comply with Federal, State, local, and University regulations.
- B. Preserve the natural resources within the Project site and outside the limits of the Work. Site fencing and environmental protective barriers will need to be implemented at all times. All work areas will need to have minimum 6' high site fencing with green screen.
- C. Comply also with requirements for preventing pollution specified in Section 01500, "Construction Facilities and Temporary Controls".
- D. Comply also with requirements for preventing stormwater pollution in Section 01560, "Temporary Stormwater Pollution Prevention".

1.02 NOISE AND VIBRATION ABATEMENT

- A. Limit noise and vibration to a reasonable level as related to specific items of equipment used and their hours of use and as indicated herein. This does not preclude use of mechanical equipment, i.e. jack hammers, if they can be operated within the permitted noise levels. University's Representative and the University will be the sole judges of permissible noise and vibration levels and they have the right to designate times when they may be used. Comply also with requirements in Section 01500 - "Construction Facilities and Temporary Controls".
 - 1. Provide and use construction equipment complying with the emission factors and noise levels listed in Tables 01150-A and 01150-B at the end of this Section. If the noise levels are exceeded, implement feasible noise control measures.
 - a. Provide mufflers for construction vehicles and equipment in accordance with manufacturer's recommendations. Comply with California Noise Standards for Delivery Motor Vehicles.
 - b. Use of noisy impact devices, jack hammers, roto hammers, chipping guns, sledge hammers, and similar tools and machines is to be limited to work hours stipulated in Section 01010-1.05.B.
 - 2. Use truck haul routes through surrounding communities which minimize impacts on noise sensitive land uses as determined by local authorities. Obtain permits from local authorities if required. On Campus, use routes as indicated, as directed, and approved by University's Representative.

- a. Limit construction related travel in vicinity of the Project site, and to and from the site, to the hours between 8:00 AM to 4:00 PM, Monday through Friday, unless more restrictive hours are otherwise specified.
 - b. Clean Contractor-caused spills or debris from haul routes as they occur and on a daily basis.
3. There are three one-week final exam periods each academic year at approximately the second week in December, the third week in March, and the second week in June. There is also a one-week final exam period at the end of the Summer School session. Exact dates will be furnished to Contractor when they have been established at the beginning of each academic year. The Contractor shall plan construction activities during exam periods with the knowledge that noise levels comply with requirements. Contractor may be required to stop and start due to classroom activities during these time periods.
- B. Notices:
1. Vibration Control Notices: Because of sensitive experiments that may be in progress in nearby buildings, provide ten (10) working days notice before conducting construction activities that might cause vibration, such as, but not limited to, drilling, excavation, compaction, etc.
 2. Construction Noise Notices: Inform University's Representative, users and residents of nearby buildings, of proposed construction activities, schedule and times of activities, and duration. Give seven (7) days notice.
- C. Required Noise Analysis: NOT USED
- D. Abatement Procedures and Facilities: NOT USED

1.03 ENVIRONMENTAL PROTECTION

- A. Construction activities may have to be curtailed (ceased or reduced) during periods of high ambient pollutant concentrations when declared by Santa Barbara County Air Pollution Control District (APCD). Comply with APCD requirements.
- B. The following mitigation measures are listed in the UCSB Long Range Development Plan (LRDP), are required under the Contract:
1. *(LRDP 4.3-4(b)) If grading occurs during the rainy season (November through April), sediment traps, barriers, covers or other materials shall be used to reduce erosion and sedimentation.
 2. (LRDP 4.3-4 (e)) Excavated materials shall not be deposited or stored where the material can be washed away by high water or storm runoff.
 3. (LRDP 4.3-4 (n)) Sediment basins, sediment traps or similar sediment control measures shall be installed before extensive clearing and grading operations begin.
 4. (LRDP 4.3-5 (j)) Do not permit siltation of the Campus Lagoon. The quality of water entering the Lagoon will be monitored by the University. Contractor is responsible for corrective measures if construction activities cause siltation or the run-off of deleterious materials.
 5. (LRDP 4.17-2) Revegetation or stabilization of exposed earth surfaces shall take place as soon as possible.

6. (LRDP 4.4-15) Where runoff from new construction of buildings, parking lots, or other impermeable surfaces of Campus will enter any Campus or off-Campus wetlands, passive best management practices (BMPs) for the treatment of runoff shall be implemented to reduce peak storm flows and to remove such pollutants as heavy metals and petroleum-based pollutants from the Campus input to the wetland water supplies. BMPs to be employed could include detention basins, grassed swales, and other similar measures to be constructed outside the protected wetlands. Parking lots shall be swept/vacuumed regularly to remove pollutants that might otherwise be carried into sedimentation basins or the wetlands themselves.
7. (HSSB 4.3-1) The existing trees shall be protected by fencing at the dripline of the trees before and during grading and construction.
8. (LRDP 4.17-1) Water or dust palliatives shall be applied to exposed earth surfaces as necessary to control dust emissions.
9. (LRDP 4.17-3) Proper maintenance of construction equipment and vehicles shall be required as part of the construction Contract.
10. (LRDP 4.17-4) Contractor shall implement and comply with Santa Barbara County Air Pollution Control District's "Standard Dust Control Requirements", as follows:
 - a. Dust generated by the development activities shall be retained onsite and kept to a minimum by following the dust control measures listed below. Reclaimed water shall be used whenever possible.
 - (1) During clearing, grading, earth-moving, or excavation, water trucks or sprinkler systems are to be used in sufficient quantities to prevent dust from leaving the site and to create a crust, after each day's activities cease.
 - (2) After clearing, grading, earth-moving, or excavation is completed, the disturbed area must be treated by watering, or revegetating; or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.
 - (3) During construction, water trucks or sprinkler systems are to be used to keep all areas of vehicles movement damp enough to prevent dust from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after Work is completed for the day. Increased water frequency will be required whenever the wind speed exceeds 15 mph.
 - b. Importation, Exportation, and Stockpiling of Fill Material:
 - (1) Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.
 - (2) Trucks transporting fill material to and from the site shall be tarped from the point of origin.
 - c. Activation of Increased Dust Control Measures:
 - (1) The Contractor shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when Work may not be in progress.

The name and telephone number of such persons shall be provided to the County Air Pollution Control District.

11. (LRDP 4.18-4) Contractor shall prohibit construction near the noise sensitive land uses specified in this Section between 5:00 AM and 7:00 PM.
12. (LRDOP 4.18-5) The Contractor shall locate stationary noise sources away from the specified noise sensitive land uses.
13. (LRDP 4.18-6) Construction equipment shall meet noise limits shown in Table 01150 - B at the end of this Section. If the limits are exceeded, then implement feasible noise control measures.
14. (LRDP 4.18-7) Use truck haul routes which minimize impacts on the specified noise sensitive land uses.

1.04 STORM WATER POLLUTION PREVENTION

- A. Comply with requirements of Section 01560 "Storm Water Pollution Prevention".

1.05 ABRASIVE BLASTING

- A. Use certified abrasives complying with latest regulations of the Air Resources Board of the California Environmental Protection Agency.
- B. Comply with opacity requirements for both interior and exterior blasting.
- C. Use wet, hydroblasting or vacuum blasting techniques, or steel or iron shot/grit when blasting outside buildings.
- D. Provide drop cloths and windscreens. Confine and collect dust, abrasive, paint chips, and other debris in compliance with applicable regulations.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

Refer to table 01150 - A and Table 01150 - B on following pages.

TABLE 01150-A
EMISSION FACTORS FOR HEAVY-DUTY DIESEL AND GASOLINE
POWERED CONSTRUCTION EQUIPMENT (POUNDS/HOUR)

<u>Equipment Type</u>	<u>Reactive Organic Compounds</u>	<u>Nitrogen Oxides</u>
<u>Diesel</u>		
Tracked Tractor	0.12	1.26
Wheeled Tractor	0.19	1.27
Wheeled Dozer	0.19	4.16
Scraper	0.28	3.83
Motor Grade	0.04	0.07
Wheeled Loader	0.25	1.89
Tracked Loader	0.10	0.83
Off-Highway Truck	0.19	4.16
Roller	0.07	0.86
Miscellaneous	0.15	1.69
<u>Gasoline</u>		
Wheeled Tractor	0.50	0.43
Motor Grader	0.56	0.32
Wheeled Loader	0.70	0.52
Roller	0.79	0.36
Miscellaneous	0.73	0.41

SOURCE: Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources, 1985. U.S. EPA Office of Air and Radiation, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina, AP-42 Fourth Edition, September.

TABLE 01150 - B
CONSTRUCTION EQUIPMENT NOISE LEVELS¹
BEFORE AND AFTER MITIGATION

<u>Equipment Type</u>	<u>Noise Level at 50 Feet</u>	
	<u>Without Noise Control</u>	<u>With Feasible Noise Control²</u>
<u>Earthmoving</u>		
Front Loaders	79	75
Backhoes	85	75
Dozers	80	75
Tractors	80	75
Scrapers	88	80
Graders	85	75
Trucks	91	75
Pavers	89	80
<u>Materials Handling</u>		
Concrete Mixers	85	75
Concrete Pumps	82	75
Cranes	83	75
Derricks	88	75
<u>Stationary</u>		
Pumps	76	75
Generator	78	75
Compressors	81	75
<u>Impact</u>		
Pile Drivers	101	95
Jack Hammers	88	75
Rock Drills	98	80
Pneumatic Tools	86	80
<u>Other</u>		
Saws	78	75
Vibrators	76	75

END OF SECTION

¹ Taken from Noise from construction Equipment and Operations, Building Equipment, and Home Appliances, prepared by Bolt, Beranek, and Newman for the U.S. Environmental Protection Agency, December 31, 1971.

² Estimated levels obtainable by selecting quieter procedures or machines and implementing noise control features requiring no major redesign or extreme cost.

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for Project meetings including but not limited to:
1. Preconstruction Conference.
 2. Preinstallation Conferences.
 3. Coordination Meetings.
 4. Progress Meetings.
 5. Billing Meetings.
 6. Safety Meetings.
 7. Guarantees, Bonds, and Service and Maintenance Contracts Review Meeting.
 8. Special Meetings.
 9. University's Representative's attendance at Contractor's periodic Project meetings with Installers.

1.02 PRECONSTRUCTION CONFERENCE

- A. Prior to the start of the construction, and at a time and convenient location designated by University's Representative, a Preconstruction Conference will be held for the purpose of discussing and familiarizing all concerned with the schedule, Contract Documents, procedures, standards, correspondence, and submittal requirements.
1. Attendance: The Preconstruction Conference will be attended by a representative of University, University's Representative, the University's Consultants, the Contractor and its superintendent, all major installers and other persons designated by University's Representative and Contractor as appropriate.
 - a. The University's Representative will record minutes, including all significant proceedings and decisions, and reproduce and distribute copies of the minutes
 2. Agenda: The agenda for the Preconstruction Conference shall include the following items as a minimum:
 - a. Distribution and discussion of the Contract Schedule including critical Work sequencing, quantity of workers and supervisors.
 - b. Designation of responsible personnel and persons authorized to represent and sign documents for the University, University's Representative and Contractor, with examples of official signature of each.
 - c. Procedures and forms for processing submittals, field decisions, proposal requests, change orders, applications for payment and revised progress schedules.
 - d. Procedures for maintaining Record Documents.

- e. Contractor's use of premises including location of office, work and storage areas.
- f. Security procedures.
- g. Housekeeping procedures.
- h. Communication procedures between parties.
- i. Listing of names, addresses and the telephone numbers of persons authorized to act for Contractor in emergencies.
- j. Testing laboratory or agency and testing procedures.
- k. Establishing schedule for progress meetings.
- l. Working hours and noise control.
- m. Maintenance of erosion and sediment control measures.
- n. Health and safety measures and protections for building occupants in occupied buildings.
- o. Other administrative items as appropriate.

1.03 PREINSTALLATION CONFERENCE

- A. Conduct a Preinstallation Conference at the Project site before each construction activity that requires coordination with other construction or disruption to pedestrian, vehicle, or bike traffic. The 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 dates.

1.04 COORDINATION AND PROGRESS MEETINGS

- A. University's Representative will conduct weekly Project Meetings at regularly scheduled times convenient for the parties involved. These meetings are in addition to specific meetings held for other purposes. Request representation at each meeting by every party currently involved in coordination or planning for the Work. Participate in meetings in a manner which will resolve coordination problems. University's Representative will record results of each meeting and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from a meeting.

1. Attending will be:

- a. The University's Representative
- b. The Project Inspector
- c. The Construction Manager
- d. The University's Representative's Consultants, as appropriate.
- e. The Contractor
- f. The Contractor's Superintendent
- g. The Contractor's Project Manager

- h. Subcontractors who are performing work in next two week period.
 - i. Others as appropriate to the agenda.
- 2. Agenda: The agenda for these meetings shall include, at a minimum, the following items:
 - a. Review the progress of the Work since the previous meeting.
 - b. Discuss field observations, problems and conflicts, including but not limited to: coordination between installers, sequencing, deliveries, off-site fabrication or manufacturing problems, shop drawings, product data and samples, access, use of site, temporary facilities and services, Work hours and noise control, hazards and risks, housekeeping, quality of workmanship, change orders, and documentation of information for payment requests.
 - c. Review the quality of the Work and the Contractor's own quality control procedures.
 - d. Identify problems which impede planned progress and develop corrective measures as required to regain the projected schedule.
 - e. Review the Three Week Look-Ahead Schedule specified in Section 01315 and plan progress during the next Work period.
 - f. Coordinate the progress of installers and suppliers.
 - g. Review changes proposed by the University for their effect on the Contract Schedule and Contract Time.
 - h. Contractors traffic control plans for all affected areas.
- 3. Minutes: The University's Representative will record minutes, including all significant proceedings and decisions, and reproduce and distribute copies of the minutes as needed.

1.05 SPECIAL MEETINGS

- A. Upon appropriate notice, the University, University's Representative or the Contractor may request special meetings as are considered necessary for coordination, review, integration of materials or systems, or such other reasons as are deemed necessary. Attendance shall be as directed by University, University's Representative, and Contractor.

1.06 BILLING MEETING

- A. University's Representative will conduct a Billing Meeting each month prior to the Contractor's submittal of the Application For Payment, or the Billing Meeting may be conducted as part of a weekly Coordination and Progress Meeting. Attendance shall be the same as for Coordination and Progress Meetings.

1.07 SAFETY MEETINGS

- A. The Contractor shall conduct a Safety Meeting each week to review construction activities, access, storage, use of spaces, coordination with University's continuing use of buildings, and such other items related to University's use of buildings during construction. The Safety Meeting may be conducted in conjunction with the weekly Coordination and Progress Meetings if approved by the University's Representative. Attendance shall be the same as for Coordination and Progress Meetings. Contractor is to provide all traffic reroutes and signage plans for review and approval in advance

- 1. The Contractor shall take minutes of Safety Meetings and distribute them to all applicable entities.

1.08 GUARANTEES, BONDS, AND SERVICE AND MAINTENANCE
CONTRACTS REVIEW MEETING

- A. Eleven (11) months following the date of Substantial Completion, a meeting shall be conducted by University for the purpose of reviewing the guarantees, bonds, and service and maintenance contracts for materials and equipment. The Contractor shall take action as appropriate to implement repair or replacement of defective items, and to extend service and maintenance contracts as required. Attendance shall be as required by the University.

1.09 RECORDING OF MEETINGS

- A. University's Representative, who will take minutes of all meetings, also has the right to tape record meetings if desired.
- B. Copies of minutes will be distributed to Contractor, who has the responsibility of further distribution to installers and suppliers. Comments on minutes shall be submitted to University's Representative within ten (10) days of receipt by Contractor, or minutes will stand as written.

1.10 UNIVERSITY'S REPRESENTATIVE'S ATTENDANCE AT CONTRACTOR'S
PROJECT MEETINGS

- A. At Contractor's weekly or periodic Project meetings with Installers, University's Representative requests being invited in order to answer questions and review issues relevant only to the responsibilities of the University's Representative.
 - 1. The purpose of the University's Representative's attendance is to expedite decisions and the resolution of problems.
 - 2. It is requested that a designated time at the beginning of each Contractor's Project meeting be set aside for the above describe University's Representative's involvement, after which the University's Representative will leave the meeting.
 - 3. The University's Representative retains the privilege and the right not to attend the Contractor's Project meetings and to leave any meeting at such time as the University's Representative desires or deems necessary.

END OF SECTION

SECTION 01310

PROGRESS SCHEDULES

PART 1 - GENERAL

1.01 SUMMARY

- A. General: This Section specifies administrative and procedural requirements for schedules required for performance of the Work, including:
 - 1. Contract Schedule.
 - 2. Daily construction reports.

1.02 PRELIMINARY CONTRACT SCHEDULE

- A. Submit the Preliminary Contract Schedule to University's Representative within fourteen (10) days after the date of commencement specified in the Notice to Proceed.
- B. Within seven (7) days after receipt of the Preliminary Contract Schedule, University's Representative will notify Contractor of its acceptance of, or its review comments about, the Schedule so that appropriate adjustments may be made by Contractor in the development of the Contract Schedule.
- C. Form:
 - 1. Prepare the Preliminary Contract Schedule as a bar chart showing continuous flow from left to right. Specific calendar dates shall be clearly and legibly shown for the start and finish of each Work activity.
 - 2. Prepare the Preliminary Contract Schedule in sufficient detail to demonstrate adequate preliminary planning for the Work and to represent a practical plan to complete the Work within the Contract Time.
 - 3. Identify holidays and non-working days.
 - 4. Identify Work activities constituting the critical path.
 - 5. Identify milestone events.

1.03 CONTRACT SCHEDULE

- A. Submit the Contract Schedule, in the form and having general content acceptable to University's Representative, at least seven (7) days prior to submitting the first Application for Payment.
- B. University's Representative will determine acceptability of the Contract Schedule within seven (7) days after its receipt.
- C. No Application For Payment will be processed nor shall any progress payment become due until the Contract Schedule is accepted by University's Representative.

D. Form:

1. The Contract Schedule shall be a bar chart showing continuous flow from left to right. Specific calendar dates shall be clearly and legibly shown for the start and finish of each Work activity.
2. The Contract Schedule shall be suitable for monitoring progress of the Work, in sufficient detail to demonstrate adequate planning for the Work, and represent a practical plan to complete the Work within the Contract Time.
3. Identify holidays and non-working days.
4. Identity milestone events.
5. Include commencement and completion times for each Phase of the Work.
6. If Contract Schedule is shown on more than one (1) sheet, provide a summary sheet.

E. Activities: Identify all Work activities in proper sequence for the completion of the Work. Work activities shall include the following:

1. Major Contractor-furnished equipment, materials, and building elements, and scheduled activities requiring submittals or University's prior approval.
 - a. Show dates for the submission, review, and approval of each submittal. Dates shall be shown for the procurement, fabrication, delivery, and installation of major equipment, materials, and building elements and for scheduled activities designated by University.
 - b. Allow adequate time for University's Representative to review each submittal and for University's Representative's procedures necessary for certification of Substantial Completion.
2. System test dates.
3. Scheduled overtime Work.
4. Dates Contractor requests designated working spaces, storage areas, access, and other facilities to be provided by University.
5. Dates Contractor requests orders and decisions from University on designated items.
6. Dates Contractor requests University-furnished and University procured equipment.
7. Connection and relocation of existing utilities.
8. Restoration of Project site.

F. Identify all Work activities that constitute the critical path.

G. Critical Work activities are defined as Work activities which, if delayed or extended, will delay the scheduled completion of one or more of the milestones or the scheduled completion of the Work, or both. All other Work activities are defines as non-critical Work activities and are considered to have float.

- H. Float is defined as the time that a non-critical Work activity can be delayed or extended without delaying the scheduled completion of milestones or the scheduled Completion of the Work, or both. Neither Contractor nor University shall have an exclusive right to the use of float. The party using float shall document the effect on the updated Contract Schedule.
- I. Delays of any non-critical Work activity shall not be the basis for an extension of Contract Time until the delays consume the float associated with that non-critical Work activity and cause the Work activity to become critical.
- J. The presentation of each Work activity on the Contract Schedule shall include a brief description of the Work activity, the duration of the Work activity in days, and a responsibility code identifying the organization or trades performing the Work activity.
- K. Include a separate schedule of minimum construction crewing or workers crew sizes required for each activity.
- L. Coordinate the Contract Schedule with the Cost Breakdown, Schedule of Submittals, progress reports, payment requests and other schedules.
- M. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "precalculated" and "actual" costs. On the line show dollar-volume of Work performed as of the dates used for preparation of payment requests.
- N. Include columns that indicate cost per activity and worker hours per activity.

1.04 UPDATING CONTRACT SCHEDULE

- A. Review the Contract Schedule with University's Representative once each week to incorporate in the Contract Schedule all changes in the progress, sequences, and scope of Work activities.
- B. Prepare and submit to University's Representative an updated Contract Schedule once each month, or as mutually agreed.
 - 1. The updated Contract Schedule shall accurately represent the status of completed and in-progress Work activities as of the date of the updated Contract Schedule.
 - 2. The updated Contract Schedule shall incorporate changes mutually agreed upon by Contractor and University during preceding periodic reviews and changes resulting from Change Orders and Field Orders.
 - 3. Contractor shall perform the Work in accordance with the updated Contract Schedule. Contractor may change the Contract Schedule to modify the order or method of accomplishing the Work only with prior agreement by University.
- C. Contractor shall submit the updated Contract Schedule, in the form acceptable to University's Representative, at least seven (7) days prior to submitting the Application For Payment.
- D. University's Representative will determine acceptability of the updated Contract Schedule within seven (7) days after its receipt.
- E. No Applications For Payment will be processed nor shall any progress payments become due until updated Contract Schedules are accepted by University's Representative.

- F. 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.

1.05 REVIEW OF SCHEDULE

- A. The University's Representative will review the Contract Schedule for format and the relationship of the Work activities. Revise the Contract Schedule if the University's Representative determines that (1) the format is unacceptable, (2) the time periods scheduled or the interrelationship of activities are unrealistic, or (3) more detail is required or it does not otherwise adequately schedule the Work.
- B. Resubmit until approval is obtained.

1.06 DISTRIBUTION

- A. Distribution: Following approval, print and distribute copies to the University's Representative, University, Installers, suppliers, and other entities required to comply with scheduled dates. Post copies in the temporary field office.
 - 1. When revisions are made, distribute to the same entities and post in the same locations. Delete entities from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

1.07 COMPLIANCE WITH SCHEDULE

- A. The Contractor and entities or firms employed by or under the control of the Contractor shall meet the Contract Schedule. If any Work falls behind the Schedule the Contractor shall regain the scheduled position within 30 days.
 - 1. The Contractor shall supply more workers when necessary to meet the Schedule. Include overtime and extra shifts as necessary. Additional workers, overtime, or extra shifts, if necessary, are at no cost to University.
 - 2. The University retains the right and the Contractor shall recognize the University's right to enforce the Schedule.
 - 3. The Contractor has the responsibility to conduct the Work in accordance with the Contract Schedule and to maintain its accuracy, updating, enforcement, and distribution.

1.08 UNIVERSITY DISCLAIMER OF SCHEDULE

- A. Approval of the Contract Schedule by University's Representative or by University is for general conformity with the requirements of the Contract Documents. Approval of the Schedule does not relieve Contractor of responsibility for the reasonableness of the Schedule or accuracy or suitability of the Schedule to meet the agreed completion or milestone dates.

1.09 SUBMITTAL SCHEDULE

- A. Coordinate the submittal of the final Contractor's Contract Schedule with the submittal of a complete Schedule of Submittals as specified in Section 01340.

1.10 DAILY CONSTRUCTIONS REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the Project Site; and submit duplicate copies to University's Representative at weekly intervals:
1. List of Installers and firms or entities at the Site.
 2. Approximate count of personnel at the Site.
 3. High and low temperatures, general weather conditions.
 4. Accidents and unusual events.
 5. Meetings and significant decisions.
 6. Stoppages, delays, shortages, losses.
 7. Meter readings.
 8. Emergency procedures.
 9. Change Orders received, implemented.
 10. Equipment or system tests and start-ups.
 11. Partial Completions, occupancies.
 12. Substantial Completions, authorized.
 13. Visitors to Site.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Shop Drawings, Product Data, and Samples, other than in connection with proposed substitutions, shall be submitted to University's Representative only when specifically required; and University's Representative will not review any other such submittals. Product Data and Samples for proposed substitutions shall be submitted to University's Representative in accordance with Section 01630. The Contractor shall be responsible for obtaining such copies of Shop Drawings, Product Data, and Samples as it may require for its own use.

1.02 RELATED REQUIREMENTS

A. Definitions:

- 1. The terms "Shop Drawings" and "Product Data" as used herein also include, but are not limited to, fabrication, erection, layout and setting drawings, manufacturers' standard drawings, descriptive literature, catalogues, brochures, performance and test data, wiring and control diagrams, all other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment, or systems and the positions thereof conform to the Contract Documents.
- 2. As used herein, the term "manufactured" applies to standard units usually mass-produced. The term "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop Drawings shall establish the actual detail of all manufactured or fabricated items, indicate proper relation to adjoining Work, and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.

- B. Manufacturers' Instructions: Where any item of Work is required by the Contract Documents to be furnished, installed, or performed in accordance with a specified product manufacturer's instructions, the Contractor shall procure and distribute the necessary copies of such instructions to University's Representative and all other concerned parties; and the Contractor shall furnish, install, or perform the Work in strict accordance therewith.

C. Submittal Schedule:

- 1. Within ten (10) days from Notice to Proceed, provide a Submittal schedule for submission of Shop Drawings, Product Data, and Samples by the Contractor (the "Submittal Schedule"), and their processing and return by University's Representative, which shall be agreed upon by both parties in order that the items covered by these submittals will be available when needed by the construction process and so that each party can plan its workload in an orderly manner.
 - a. Product Data: Within ten (10) days after issuance of the Notice to Proceed, all Product Data shall have been submitted for approval. The Submittal Schedule shall be based on this 10 day maximum period for receipt of all submittals by University's Representative.

2. Coordinate the Submittal Schedule with the Cost Breakdown, Table of Contents of the Specifications, and the Contract Schedule.
 3. Prepare the Submittal Schedule in the format contained in the Exhibits and coordinate it with the Contract Schedule and Preliminary Precedence Diagram as specified in Section 01310 "Progress Schedules". No submittals will be processed before the Submittal Schedule has been submitted to and accepted by University's Representative, except in such cases where processing of critical submittals are required for early construction activities.
 - a. Do not let development of the Contract Schedule and Submittal Schedule delay preparation of critical submittals for long-lead-time items or for items needed early in the construction.
 4. Prepare the Schedule in chronological order; include all submittals required for the Work. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Specifications Section number.
 - c. Submittal category.
 - d. Name of supplier or Installer.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal.
 - g. Scheduled date for University's Representative's final release or approval.
 5. In preparing the Submittal Schedule, for submittals other than Product Data, the Contractor must first determine from the Contract Schedule the date the particular item is needed for the Work. Working backwards, Contractor will add the required number of days for reviews and approvals, shipment, time for fabrication, and similar items to determine the date of the first submittal.
 - a. No extension of time will be authorized because of the Contractor's failure to transmit submittals to University's Representative sufficiently in advance of the Work.
 6. The Submittal Schedule shall be adjusted to meet the needs of the construction process and Contract Schedule. Submit two (2) copies of the Submittal Schedule after it is completed and each time it is updated by Contractor.
 7. Allow adequate time for review and approvals as specified in Section 01310 "Progress Schedules".
- D. Shop Drawings or other custom prepared submittals for buildings or portions of buildings that are not yet accessible to the Contractor to take specific Measurements shall be submitted with unknown or indeterminate conditions identified on the submittal.
1. Make final submittal as soon as possible, but not later than seven (7) days except for structural steel, after access is given.
 2. Where applicable and where permitted by University's Representative, provide trim or scribe pieces to permit installation with adequate allowances for existing conditions.

1.03 SHOP DRAWINGS

- A. Present information required on Shop Drawings in a clear and thorough manner. Identify details by reference to drawing and detail, schedule, or room numbers shown and specified.

- B. Where Specifications sections require layout drawings, submit layout drawings which comply with following requirements.
 - 1. Drawings shall be plans or sections as required to show sufficiently coordinated layout of all equipment, ducts, pipes and electrical Work. Do not commence such Work until the University's Representative has reviewed these drawings.
 - 2. Engage competent drafter to prepare appropriately scaled floor plans on mylar of sheet size and with title blocks to match the Contract Drawings. These plans shall reflect dimensions as field-verified by the Contractor. Plans shall be uniform and identical and shall serve as backgrounds for preparation of shop or layout drawings required.
 - 3. Where additional sheets of elevations, sections, details or diagrams are required, such sheets shall match the Contract Drawings with respect to size and title block.

1.04 PRODUCT DATA

- A. Preparation:
 - 1. Clearly mark each copy to identify pertinent products or models.
 - 2. Show performance characteristics and capacities.
 - 3. Show dimensions and clearances required.
 - 4. Show wiring or piping diagrams and controls.
- B. Manufacturers' standard schematic drawings and diagrams:
 - 1. Modify standard schematic Drawings and other diagrams to delete information which is not applicable to the Work.
 - 2. Supplement standard information to provide information specifically applicable to the Work.
 - 3. Clearly indicate manufacturer's model and/or part number intended.

1.05 SAMPLES

- A. Office Samples shall be of sufficient size and quality to clearly illustrate the following:
 - 1. Functional characteristics of the products, with integrally related parts and attachment devices.
 - 2. Full ranges of color, texture, and pattern.
 - 3. Or as specified.
- B. Field Samples:
 - 1. Erect at the site, at a location as directed by University's Representative.
 - 2. Size: As specified in applicable Specifications Section.
 - 3. Fabricate each Sample to be complete and fully finished.
 - 4. Remove Samples at conclusion of Work unless specified to be retained in the completed Project.
 - 5. Requirements for mock-ups are specified in Section 01400.

1.06 ORGANIZATION OF SUBMITTALS

- A. Submit each Division or major portion of the Work as one integrated submittal. Do not submit Shop Drawings, Product Data, and Samples within one Division separately unless necessary for the progress of the Work and only with the approval of the University's Representative.

1.07 CONTRACTOR'S REVIEW OF SUBMITTALS

- A. Review, mark up as appropriate, and stamp Shop Drawings, Product Data, and Samples prior to submission. Submittals shall clearly show that they have been reviewed by the Contractor for conformance with the requirements of the Contract Documents and for coordination with other Sections of the Specifications.
- B. Determine and Verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with Contract Documents.
 - 5. Coordination with other Work.
- C. Coordinate each submittal with requirements of the Work and of the Contract Documents.
- D. Notify University's Representative in writing, at time of submission, of any changes or deviations in the submittals from requirements of the Contract Documents.
- E. Begin no fabrication or Work which requires submittals until the return of University's Representative's final reviewed and approved submittals.

1.08 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with the Submittal Schedule and in such sequence as to cause no delay in the Work or in the activities of any Separate Contractor.
- B. Number of Submittals Required:
 - 1. Shop Drawings:
 - a. For initial submittals, submit one (1) reproducible transparency and four (4) opaque reproductions. After reviewing, University's Representative will make prints for itself, consultants, and University, and then return the reproducible copy to the Contractor. The Contractor may make prints as it requires for its use and for other entities or Installers.
 - b. For final submission, submit five (5) copies which will be retained by University's Representative, plus the number of copies required by the Contractor and its Installers, suppliers and manufacturers, and plus the number of copies required for operation and maintenance manuals.
 - 2. Product Data and Non-Reproducible Submittals: Submit the number of copies which the Contractor will need, plus five (5) copies which will be retained by University's Representative, and plus the number of copies required for operation and maintenance manuals.
 - 3. Samples: Submit the number specified in the Specifications Section which required them.
- C. Submittals shall contain:

1. Date of submission and dates of any previous submissions.
2. Project name and number.
3. Contract identification.
4. The names of:
 - a. Contractor
 - b. Installer
 - c. Supplier
 - d. Manufacturer
5. Identification of the product, with the Specification Section number.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features of the Work or materials.
8. Reference standards, such as ASTM or Federal Specification numbers.
9. Identification of changes or deviations from requirements of the Contract Documents.
10. Identification of revisions on resubmittals.
11. A blank space for review stamps
12. Contractor's stamp, initialed or signed, certifying to the review of submittal; verification of materials and field measurements and conditions; and compliance of the information within the submittal with requirements of the Work and of the Contract Documents.

1.09 RESUBMISSION REQUIREMENTS

A. Shop Drawings and Product Data:

1. Revise Shop Drawings and Product Data, and resubmit as specified for the initial submittal.
2. Identify any changes which have been made other than those requested.
3. Note any departures from the Contract Documents or changes in previously reviewed submittals which were not commented upon by University's Representative.

B. Samples: Submit new Samples as required for initial submittal.

C. The Contractor shall make a complete and acceptable submission at least by the second submission of data and drawings. The costs of additional review beyond the second submittal shall be borne by the Contractor and will be deducted from the Contract Sum.

1.10 DISTRIBUTION

A. Reproduce and distribute copies of Shop Drawings and Product Data which carry University's Representative's review stamp, to the following locations:

1. Contractor's jobsite file.
2. Record documents file maintained by Contractor.
3. Other affected Separate Contractors.
4. Installers.

- 5. Supplier or fabricator.
- B. Distribute Samples which carry University's Representative's review stamp as directed.
- C. Do not permit submittal copies without an appropriate final "Action" marking by University's Representative to be used in connection with the Work.

1.11 UNIVERSITY'S REPRESENTATIVE'S REVIEW

- A. University's Representative will review the Contractor's submittals, such as Shop Drawings, Product Data, and Samples, for the limited purpose of reviewing for conformance with information given and the design concept expressed in the Contract Documents. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents.
- B. University's Representative will stamp each submittal to be returned with a uniform, self explanatory action stamp, appropriately marked and executed to indicate whether the submittal returned is for unrestricted use, final-but- restricted use (as marked), must be revised and resubmitted (use not permitted) or without action (as explained on the transmittal form).

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes requirements for periodic construction photography to support Applications for Payment and to supplement Record Documents.

1.02 SUBMITTALS

- A. Deliver two (2) sets of electronic prints with each Application for payment and electronic images with appropriate descriptions.

1.03 QUALITY ASSURANCE

- A. Use an experienced photographer, acceptable to the University's Representative.

1.04 SCHEDULING OF PHOTOGRAPHY

- A. Submit digital photographs throughout progress of the Work with each Application for Payment showing:
 - 1. Existing site conditions.
 - 2. During site clearing.
 - 3. During and upon completion of excavations.
 - 4. During installation of utilities at 100% completion.
 - a. See additional requirements for photographs of site utilities in Part 3 of this Section.
 - 5. Completion of work and landscaping.

PART 2 - PRODUCTS

2.01 DIGITAL PHOTOGRAPHS

- A. Digital photographs shall be taken and submitted by electronic mail to University Representative.
- B. Deliver digital photographs to the University's Representative along with Record Documents as required in Section 01720. Provide compact discs in an appropriate, protective binder, with plastic sleeves correctly cataloged in chronological sequence, with typed table of contents.

2.02 PRINTS

- A. Electronic delivery of prints is an acceptable delivery method, if each print is labeled adequately per the submittal procedure and delivered to the University Representative for review and approval.

PART 3 - EXECUTION

3.00 VIEWS

- A. For the following underground site utilities, take a minimum of one (1) photograph at each fitting, change in direction, valve, connection to main thrust block, manhole and manhole entrance, handhold box, pull box, and vault:
 - 1. Water lines.
 - 2. Sanitary and storm sewer lines.
 - 3. Gas lines.
 - 4. Major electrical conduits.
 - 5. Transformers and vaults.
 - 6. Communication ducts and associated Work.
 - 7. Other utilities encountered, as directed by University's Representative.
- B. Consult with University's Representative for instructions on views required.

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.01 GENERAL

A. Definitions:

1. The term "University's Testing Laboratory" means a testing laboratory retained and paid for by the University for the purpose of reviewing material and product reports and performing other services as determined by University.
2. The term "Contractor's Testing Laboratory" means a testing laboratory retained and paid for by the Contractor to perform the testing services required by the Contract Documents. The Contractor's Testing Laboratory shall be an organization other than University's Testing Laboratory and shall be acceptable to the University's Representative. It may be a commercial testing organization, the testing laboratory of a trade association, the certified laboratory of a supplier, the Contractor's own forces, or other organization. The Contractor's Testing Laboratory shall have performed testing of the type specified for at least five (5) years.

B. Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable code requirements shall be made at the appropriate times. Except as otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with the Contractor's Testing Laboratory. The Contractor shall give the University's Representative timely notice of when and where tests and inspections are to be made.

C. If such procedures for testing, inspection, or approval reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs made necessary by such failure including those of repeated procedures and compensation for University's Representative's and Consultants' services and expenses, and charges of University's Testing Lab.

1. University's Testing Laboratory's charges for tests on Work not complying with the requirements of the Contract Documents will be deducted from the Contract Sum by Change Order.

D. If University's Representative is to observe tests, inspections, or make approvals required by the Contract Documents, University's Representative will do so promptly and, where practicable, at the normal place of testing.

E. Test or inspections conducted pursuant to the Contract Documents shall be made promptly to prevent delay in the Work.

1.02 CONTRACTOR'S RESPONSIBILITY FOR QUALITY ASSURANCE

- ###### A. Contractor shall provide its own quality control procedures and the supervision of Installers and workers in order to assure that the Work is constructed in compliance with the Contract Documents.

- B. The quality of the Work and the Contractor's own quality control procedures will be a subject of discussion at each weekly Project Meeting.
- C. The failure of the University, University's Representative and consultants or University's inspectors to observe or inspect the Work or to detect deficiencies in the Work or to inform the Contractor of any deficiencies which may be discovered, shall not relieve the Contractor, subcontractors, regardless of tier, and suppliers, for their responsibilities for construction means and methods, techniques, sequences and procedures, and construction safety to carry out the Work in accordance with the Contract documents and detect and correct defective Work.

1.03 CONTRACTOR'S RESPONSIBILITIES REGARDING UNIVERSITY'S TESTING LABORATORY

- A. Secure and deliver to University's Testing Laboratory adequate quantities of representative samples of materials proposed for use as specified.
- B. Submit to University's Representative the preliminary design mixes proposed to be used for concrete and other materials which require review by University's Testing Laboratory.
- C. Submit copies of product test reports as specified.
- D. Furnish incidental labor and facilities:
 - 1. To provide University's Testing laboratory access to Work to be tested.
 - 2. To obtain and handle samples at the site or at the source of the product to be tested.
 - 3. To facilitate inspections and tests
 - 4. For storage and curing of test samples.
- E. Provide notice to University's Representative sufficiently in advance of operations, but not less than 48 hours, to allow for University's Testing Laboratory assignment of personnel and scheduling of tests.
 - 1. When tests or inspections are not performed after such notice, Contractor shall reimburse the University for University's Testing Laboratory personnel and travel expenses incurred.

1.04 TESTS AND INSPECTIONS

- A. Certain portions of the Work will be tested or inspected at various stages. Nothing in any prior acceptance or satisfactory test result shall govern, if at any subsequent time the Work, or portion thereof, is found not to conform to the requirements of the Contract Documents.
- B. The University may retain at University's expense testing agencies to perform tests, inspections and sampling of the following Work, or such other Work as the University may determine necessary, after start of construction.
 - 1. Earthwork: Excavation, fill material, placement of fill, compaction, and density.
 - 2. Aggregate base course for pavements.
 - 3. Trench excavation and placement of compacted backfill.
 - 4. Structural excavation and concrete reinforcing.

5. Preparation for, and installation of, drilled piers.
 6. Asphalt concrete paving.
 7. Concrete reinforcement, ingredients, placement, strength, and quality control.
 8. Precast concrete and architectural precast concrete ingredients, strength, reinforcement, welding, and quality control.
 9. Concrete unit masonry mortar and grout.
 10. Structural steel, welding, and bolting, unless specified otherwise.
 11. Welding of metal decking.
 12. Drilled dowels.
 13. Torque wrenching of bolts.
 14. Fireproofing thickness and density.
 15. Roofing.
 16. Acoustical performance of sound retardant doors.
 17. Metal support systems and acoustical ceiling system connection devices.
 18. Paint film thickness.
 19. Testing of site and building water lines disinfection.
- C. The University's employment of testing agencies shall in no way relieve the Contractor of its obligations to perform the Work in accordance with Contract requirements.
1. Contractor shall provide its own quality control procedures and the supervision of Installers and workers in order to assure that the Work is constructed in compliance with the Contract Documents.
 2. The quality of the Work and the Contractor's own quality control procedures will be a subject of discussion at each weekly Project Meeting.
- D. Inspections, test and related actions specified are not intended to limit the Contractor's own quality control procedures that facilitate compliance with Contract Document requirements.
- E. Requirements for the Contractor to provide quality control services required by the University's Representative or the University are not limited by provisions of this Section.

1.05 ADDITIONAL TESTING AND INSPECTION

- A. If initial tests or inspections made by University's Testing Laboratory reveal that any portion of the Work does not comply with Contract Documents, or if University's Representative determines that any portion of the Work requires additional testing or inspection, additional tests and inspections shall be made as directed.

1. If such additional tests or inspections establish that such portion of the Work complies with the Contract Documents, all costs of such additional tests or inspections shall be paid by the University.
2. 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.
3. University's Testing Laboratory shall indicate in each report whether the report is for a re-test, whether the item tested is in compliance with the Contract Documents, and the additional cost to University of the re-testing.
4. The University's Testing Laboratory shall send a copy of the re-test report and its

1.06 UNIVERSITY'S TESTING LABORATORY'S CHARGES FOR NON-COMPLYING WORK

- A. University's Testing Laboratory's fees for tests on Work not complying with the requirements of the Contract Documents will be deducted from the Contract Sum by Change Order.
- B. The University's Testing Laboratory shall indicate in each report whether the report is for a re-test, whether the item tested is in compliance with the Contract Documents, and the additional cost to Owner of the re-testing.
 1. The Laboratory shall send a copy of the re-test report and its cost to the Contractor.

1.07 TEST REPORTS

- A. University's Testing Laboratory and the Contractor's Testing Laboratory shall distribute copies of all reports as follows:
 1. University's Representative: Five (5) copies.
 2. Contractor: Two (2) copies.

1.08 GEOTECHNICAL ENGINEER

- A. The University will retain and pay the expenses of a Geotechnical Firm to perform inspection, testing, and observation functions as required by the University. The Geotechnical Firm shall communicate only with the University and University's Representative. University's Representative shall then give notice to the Contractor, with a copy to the University of any action required of the Contractor.

1.09 MOCK-UPS – NOT USED

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 REPAIR AND PROTECTION

- A. Upon completion of inspection, testing, sample-taking and similar services performed on the Work, repair damaged Work and restore substrates and finishes to eliminate deficiencies, including deficiencies in the visual qualities of exposed finishes. Comply with the requirements of Section 01045 - "Cutting and Patching". Repair and protection is the Contractor's responsibility.

END OF SECTION

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies requirements for construction facilities and temporary services and controls, including utilities, construction and support facilities, security and protection, and cleaning during construction.
- B. Refer to:
 - 1. Section 01015 - Work Sequence: Requirements for maintaining emergency access routes, paths and bikeways, and requirements for erecting and dismantling barricades and fences associated with the sequence of the Work.
 - 2. Section 01060 - Regulatory Requirements: Requirements for notifications.
 - 3. Section 01150 - Environmental Protection Requirements: Required environmental protections.
 - 4. Section 01532 - Tree and Plant Protection: Tree and landscaping protections.
 - 5. Section 01561 - Erosion and Sediment Control: Provision and maintenance of facilities for erosion and sediment control.
 - 6. Section 01570 - Traffic Control: Requirements for traffic control on streets, bikeways, and walks.
- C. Provide equipment, including, but not limited to, conduit and piping, metering, connections, transformers, and other materials necessary for extending temporary utilities and facilities to where they may be necessary.
- D. Coordinate installations with University's Representative, obtain required approvals from and give adequate notices to University agencies or departments as specified in Section 01060 - "Regulatory Requirements".
- E. Provide/extend water and electricity for construction purposes from the University's systems in such quantities and at such times as they are available. The University does not guarantee amounts of water and electricity available from existing University sources, nor will the University be responsible for interruptions in services. It is the contractors responsibility to coordinate in advance the use of University water and power and in the event that they are not available or inadequate it is the contractors responsibility to provide an appropriate alternate source. It is also the contractors responsibility to pay for any services extended by the University. The University will meter such services and produce the appropriate billing which will be the responsibility of the contractor to pay.
- F. NOT USED

G. Exercise conservation in the use of water and power. Comply with University's Representative's directions regarding their use.

1. If excessive water is used or if water is wasted, either as determined solely by University's Representative, the University retains the right to cut off the piped water supply to the Contractor, in which case the Contractor shall have to purchase trucked-in water at no charge to the University.

H. NOT USED

I. Temporary construction and support facilities required include but are not limited to:

1. NOT USED
2. NOT USED
3. Temporary bike paths, walks, roads and paving, including painted lines and signs.
4. Sanitary facilities, including drinking water.
5. Dewatering facilities and drains.
6. Temporary enclosures.
7. NOT USED
8. Temporary Project identification signs and bulletin boards.
9. Waste disposal services.
10. Rodent and pest control.
11. Construction aids and miscellaneous services and facilities.
12. Parking management and use of public thoroughfares and roads.

J. Security and protection facilities required include but are not limited to:

1. Temporary fire protection.
2. Barricades, warning signs, lights, window protections.
3. Enclosure fence for the site.
4. Environmental protection.

1.02 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Include implementation and termination of each temporary utility in Contract Schedule required in Division 1 Section, "Progress Schedules".

1.03 QUALITY ASSURANCE

- A. Regulations: Comply with University regulations and recommendations, Federal and State codes and regulations, industry and utility company standards, and applicable laws and regulations of authorities

- having jurisdiction, whether or not called for under separate Divisions of these Specifications, including but not limited to:
1. Building Code requirements.
 2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, Fire Department and Rescue Squad rules.
 5. Pollution and environmental protection regulations for use of water and energy, for discharge of wastes and storm drainage from the site, and for control of dust, air pollution, and noise.
- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with the California Electric Code.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.
- D. Comply with applicable requirements specified in Division- 16 ELECTRICAL.

1.04 PROJECT CONDITIONS

- A. In the event of an emergency at the site, obtain medical, fire and police assistance by dialing 9-911 on a Campus phone or 911 on an off-Campus phone.
- B. Inventory site with University's Representative prior to construction and setting up temporary facilities as specified in Section 01010, "Summary of Work", to establish condition of site prior to beginning Work.
- C. Temporary Utilities: At the earliest feasible time, when acceptable to the University, change over from use of temporary services to use of the permanent services. Do not remove temporary metering facilities without approval of University's Representative.
- D. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.
- E. The shutdown of utilities to an existing building, if necessary, but not within an existing building, will be performed by the University Facilities Management Department. Provide required notices specified in Section 01060, "Regulatory Requirements". Comply with scheduling and Work times specified in Section 01015, "Work Sequence".
- F. NOT USED

- G. Prior to removal of any part of the dust, dirt, or construction barriers, obtain approval of the UCSB Campus Fire Marshal and University's Representative.
- H. NOT USED

1.05 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Drawings show, if applicable, existing above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, hot water, and other utilities which are known to the University.
- B. Locate known existing installations before proceeding with construction operations which may cause damage to such installations. Existing installations shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Sum.
- C. If other structures or utilities are encountered, request University's Representative to provide direction on how to proceed with the Work.
- D. If a structure or utility is damaged, take appropriate action to ensure the safety of persons and property.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Provide new or used materials. Used materials shall be in excellent serviceable condition and suitable for the use intended. Their use and methods of installation shall not create unsafe conditions or violate requirements of applicable codes and standards.
- B. For exterior signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated or as necessary.
 - 1. For interior signs, 1/2-inch thick plywood or a metal sign is acceptable.
- C. For fences, safety barriers, noise and vision barriers, where appropriate or required, provide 5/8-inch thick minimum exterior type plywood, 6 feet high; or 11 gage, galvanized 2 inch open-mesh chain link fencing, 6 feet high, with galvanized steel pipe posts, 1-1/2" I.D. for line posts and 2-1/2" I.D. for corner posts.
 - 1. Where plywood fencing is used, paint it a green color as selected by University's Representative.
 - 2. Where chain link fencing is used, cover fencing with green plastic fabric, color as approved by University's Representative. Securely fasten fabric to fencing and maintain in a satisfactory condition as determined solely by University's Representative.
 - a. Fabric: 5.2 oz/sq.yd. and 80% shade
 - b. Bind fabric hems with 2-3/4 inch binding tape with brass grommets every 12 inches. Run a tab horizontally through the center with brass grommets every 12 inches. Attach all grommets in fabric to fencing with #9 gage hog rings.
 - 3. For covered walkway (if any) materials, see Part 3 of this Section.
- D. Water: Provide potable water approved by local health authorities.

- E. Locks for Fence Gates: Campus Fire Department will furnish Knox padlocks to Contractor where fire access is required.
- F. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with a flame-spread rating of 15 or less. For temporary enclosures where Work is being or will be performed, provide translucent tarpaulins made of nylon reinforced laminated polyethylene to admit the maximum amount of daylight and reduce the need for temporary lighting.
- G. Materials for Temporary Dust, Dirt and Fume Barriers: New polyethylene sheets, 6 mil thick, with tape to seal joints and edges, over appropriate wood support framing. If fire-resistant materials are required, substitute those for the polyethylene.
- H. Materials for Temporary Sound Barriers: 3/4 inch thick minimum interior type plywood, properly and adequately supported and braced.

2.02 EQUIPMENT

- A. Water Sources: Provide adjustable nozzles with automatic shut-off at hose discharge. Provide automatic shut-off device on all water sources.
- B. 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.
- C. 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.
- D. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- E. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed.
- F. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction of sufficient size with secure lockable entrances, operable windows, necessary utilities, and serviceable finishes. Required facilities are specified in Part 3 of this Section.
 - 1. Comply with requirements of Title 25 or California Department of Motor Vehicles, as applicable to units provided.
- G. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
- H. First Aid Supplies: Comply with governing regulations.
- I. Fire Extinguishers: 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 of NFPA recommended classes for the exposures.

1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.
- J. Construction Equipment and Vehicles: Equipment and vehicles used in the performance of the Work, including delivery vehicles bringing equipment and materials to the Project site, shall be properly maintained to reduce noise and air pollution, and they shall be in compliance with adopted noise and pollution standards for each item of equipment or vehicle. Comply with Section 01150.

PART 3 - EXECUTION

3.01 GENERAL

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.
- C. Provide, maintain, and remove all items of temporary protection as required or directed for the safeguarding of permanent or support features of the Project, whether in this Section or in the various Specifications sections.
- D. Box all corners subject to construction abuse and provide similar items of temporary protection. Do not anchor into or otherwise damage surfaces being protected.

3.02 TRENCHING AND EXCAVATION

- A. General Protection: Pursuant to Labor Code sections 6705 and 6707, Contractor 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 any excavation five feet or more in depth, Contractor shall submit to University's Representative a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during excavation. The proposed plan shall comply with the standards established by the State of California Construction Safety Orders and Title 24 of the California Code of Regulations (CCR). If the detailed plan varies from such shoring system standards, it shall be prepared by a registered civil or structural engineer whose name and registration number shall be indicated on the drawing. If a dispute arises as to whether the plan must be prepared by a registered civil or structural engineer, University's Representative's determination of the matter shall be final and conclusive on Contractor. The cost of required engineering services shall be borne by Contractor and shall be deemed to have been included in the amount bid for the Work as stated in the Agreement.

Neither the review nor approval of any plan showing the design of shoring, bracing, sloping, or other provisions for worker protection, shall relieve Contractor from its obligation to comply with Construction Safety Order Standards and Title 24 CCR for the design and construction of such protective Work, and Contractor shall indemnify the University and University's Representative from any and all claims, liability, costs, actions, and causes of action arising out of or related to the failure of such protective systems. Contractor shall defend the University, its officers, employees, and agents

and University's Representative in any litigation or proceeding brought with respect to the failure of such protective systems.

- C. 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.

3.03 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment.
 - 1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Connection, and Use Charges: Connection, cost or use charges for temporary facilities are not chargeable to the University, and will not be accepted as a basis of claims for a Change Order.
 - 4. Any electrical operation involving high voltage Work and high voltage coordination shall be fully coordinated with the University Representative ten (10) days in advance of digging, trenching, boring, coring, or other site-related Work. Final connection of either 4160 volt power (UCSB owned) or SCE 16,500 volt power (Edison owned) shall be fully coordinated with the University Representative ten (10) days in advance of the actual Work.
 - 5. Trades involved with sitework shall fully examine the Campus Atlas drawings and other record drawings stored at Facilities Management for the area involved. Marking shall be performed by Underground Technology, Inc. or other company experienced in underground marking. Fully mark all existing utilities on the surface one day prior to excavation, boring, coring, or trenching. All marking by the marking company to determine exact utility locations prior to site Work is at Contractor's expense. Underground Technologies, Inc. will not locate University owned utilities as part of the standard dig alert service.
 - 6. Contractor, within 24 hours, at Contractor's own expense, shall repair damaged utilities to University's satisfaction.
- B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
 - 1. Sterilization: Sterilize temporary water piping prior to use.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
 - 1. Maintain continued utility service to existing buildings and facilities. Electrical shutdowns determined critical by University may be required to be performed between 12:00 midnight and 4:00 AM.

2. If power must be shut off for existing buildings which are in use by the University, provide the required advance notices and maintain temporary service to such buildings as directed by the University's Representative and as specified in Section 01060 - "Regulatory Requirements".
 3. Contractor is responsible for determining the adequacy of the existing service for temporary electric power.
- D. Temporary Lighting: Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions. See staging areas designated on plans.
1. Provide adequate temporary lighting in parking lots, in staging area, and along bikeways and walks for security, for illumination of exit ways, and for the lighting of pedestrian and bicycle movement. Meet the minimum lighting level standards as specified in the Illuminating Engineering Society of North America's (IES) Handbook.
- E. Traffic Signals: Maintain traffic signals in operation during construction. If shutdowns are necessary, coordinate them with Campus Police and other Campus organizations.
- F. NOT USED
- G. Sewers and Drainage: Provide temporary connections to remove effluent that can be discharged lawfully into sewers. If sewers cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.
1. Filter out soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
 2. Connect temporary sewers to the municipal system, if any, as directed by the sewer department officials.
 3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

3.04 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities where approved by University's Representative. See staging areas designated on plans.
1. Remove temporary construction and support facilities just prior to Substantial Completion unless indicated otherwise to meet sequencing requirements. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the University.
- B. Temporary Ventilation and Heat: Provide temporary ventilation and heat if required by construction activities, for curing or drying of completed installations, and for protection of workers and installed construction from adverse effects of temperatures or humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.
1. Unless indicated otherwise, do not use the permanent building heating, ventilation, or air conditioning systems without approval of University's Representative. If a permanent system's

use is specified or permitted, provide filters and replace with new filters upon Substantial Completion.

C. NOT USED

D. Storage and Fabrication Sheds and Staging Areas: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere within the Contract limits.

1. Confine operations, including storage of materials, to areas approved by the University. Contractor shall be liable for damages caused during use of property of the University or other parties.
2. General area of staging and storage areas are indicated on Drawings, but final location is subject to the approval of the University Fire Marshal and Dept. of Environmental Health and Safety.
3. Provide access for pedestrians and for fire personnel as indicated or required.

E. The Contractor in coordination with the University will shut off landscape irrigation system or cap irrigation heads in storage and staging areas. Give notice required in Section 01060.

F. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs. Maintain facilities in a clean and sanitary condition.

1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
2. Provide separate toilet facilities for each sex.
3. Obtain approval for locations of toilets from University's Representative.
4. Maintain and pump temporary/portable toilets in compliance with applicable governmental requirements.
5. Use of other Campus toilet facilities is not permissible.

G. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

1. Where necessary, provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.

H. Drinking Water Facilities: Provide adequate quantity of containerized tap- dispenser bottled-water type drinking water units, including paper supply.

I. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with

dewatering requirements of applicable Division-2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations and construction free of water.

- J. Temporary Enclosures: Provide temporary enclosures for protection of construction in progress and construction completed, and from exposure, foul weather, other construction operations and similar activities.
1. Provide a plan for erecting and removing temporary enclosures and review with University's Representative. Adhere to plan and notify University's Representative of necessary changes.
 2. Provide temporary separations as necessary or as indicated in order to separate construction activity from University-occupied areas.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds 100 square feet in area, use UL-labeled fire-retardant treated material for framing and main sheathing.
 - a. Provide fire-rated temporary enclosures and separations where indicated on Drawings.
 5. Protect portions of structures where construction is to be performed. Provide temporary protection such that interior of structures will at all times be protected from weather inclemency. Protect temporary openings in exterior walls by temporary weatherproof closures. The Contractor will be held responsible for damages to structure and contents by reason of insufficiency of such protection.
 6. Provide temporary barriers to prevent the spread of dust and fumes to occupied areas of the building as specified elsewhere in part 3 of this Section.
- K. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
1. Schedule crane operations with University's Representative and give notices specified in Section 01060 - "Regulatory Requirements".
- L. Elevator Use: NOT USED
- M. Project Identification and Temporary Signs: Obtain University's Representative's approval of signs before fabrication. Prepare Project identification and other signs of the size and type approved; install signs to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
1. Post fenced staging and storage areas with signs stating: Project name, work times, date of start of construction, and date of Final Completion.
 2. Provide visible signs indicating alternate routes or new locations of bike paths, pedestrian paths, vehicle and bike parking, and other similar signs as necessary.
 3. Other than the above, no signs are allowed except safety or caution signs to protect the public.

4. Engage an experienced sign painter to apply graphics.
 5. Furnish, install and maintain two (2) 8-foot x 8-foot Project identification signs of the design, text, and colors indicated on the drawing at the end of this Section. The signs shall be free standing, fabricated from exterior grade plywood, with 2-foot x 4-foot framing supported by three (3) 4 x 4 posts. Locate where directed by University's Representative and remove upon completion of Work.
- N. Temporary Exterior Lighting: Install exterior yard lights in a manner that provides security for staging and Project areas, that permits exterior Work, and that provides adequate safety for workers and the public. Obtain approval for locations and type of lighting from University's Representative before installation. Adjust direction of lighting as required by University's Representative.
- O. Collection and Disposal of Waste and Cleaning During Construction: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
1. Keep site, parking areas, staging and storage areas, and adjacent areas clean and orderly at all times. Do not permit trash, debris, litter, or construction materials to be blown into or drain into adjacent areas. Provide on-site containers.
 2. Trash, debris, or waste material generated by construction operations shall be removed from the Campus and disposed of at the Contractor's expense at an authorized dumping area. Receipts showing payment of dumping fees or other written evidence of approval for dumping prepared by the University or authorities having jurisdiction over the dumping area, shall be submitted by the Contractor, upon request, to show proper and approved disposition of waste material generated at the construction site and removed from the Campus. Burning of debris will not be permitted on University property.
 3. Haul waste materials in a manner that minimizes potential risks to public health and safety. Adhere to haul routes approved by governing agencies.
 4. Keep trash and debris bins or containers clear of gates, doors, circulation areas and exits.
 5. Store volatile wastes in covered metal containers.
 6. Handle materials in a controlled manner. Do not drop or throw materials from heights within spaces or from upper floors.
 7. Vacuum clean interior building areas when ready to receive finish painting or other finish materials that may be affected by contaminants. Continue vacuuming on an as-needed basis until Substantial Completion.
 8. Dust removal created by construction Work in areas occupied by University is the responsibility of the Contractor, no matter where the dust may be located. Remove dust within 24 hours of completion of each localized construction activity, or Owner will have it removed and deduct cost from the Contract Sum.

P. Rodent and Pest Control: NOT USED

Q. Stairs and Scaffolding: NOT USED

R. Parking Management and Use of Public Thoroughfares and Roads: The Contractor shall make its own investigation of the conditions of available public thoroughfares and roads, of the clearances, restrictions and other limitations affecting transportation, ingress and egress at the Project site. Contractor shall, under regulations prescribed by the University, use only established roads. However, temporary haul roads as may be required in the Work shall be constructed and maintained by the Contractor, subject to the approval of the University. Adequate protection against damage shall be provided by the Contractor whenever it is necessary to cross existing sidewalks, curbs and gutters, and all damages thereto, including damage to existing paving, arising from the operations under the Contract, shall be satisfactorily repaired and made good by or at the expense of the Contractor, including cleaning of spilled materials of any kind.

1. Current Campus parking fees are indicated in the Supplementary Instructions to Bidders. Parking fees are subject to change. Contractor shall pay for each space used, including spaces used in construction personnel's parking lot. Obtain parking permits from the Parking Services Office.
2. Delivery vehicles may be parked at or near the buildings as required to handle removed or new materials.
3. Comply with the requirements in Section 01570 "Traffic Control" and with the following traffic safety requirements.
 - a. Adhere to Campus speed limits and parking regulations.
 - b. Do not block or interfere with fire lanes, roads, bikeways, or sidewalks, and do not use vehicles on bikeways.
 - c. If there is no alternative means of reaching a building without driving on sidewalks or bikeways, comply with the following restrictions:
 - 1) First obtain permission from Campus Police Chief and Parking Services.
 - 2) Schedule the operation with Environmental Health and Safety (EH & S), and abide by EH & S requirements for traffic control, barricading, signing, re-routing, etc., as safety may demand.
 - 3) Activate emergency flashers while driving.
 - 4) Be responsible for the safety of people and for damages to the bikeways or sidewalks.
 - 5) Adhere to a safe speed.
4. NOT USED
5. For access to the Project site use only the access roads indicated in the map on the Drawings.

- S. Temporary Pavements: Provide temporary bikeways, walks and pavements necessary, at the time necessary, and as determined by the University's Representative. Paint required striping or signs with traffic-type paint.
- T. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water. Provide sediment traps, covers, barriers, or other methods to reduce erosion and sedimentation.
 - 1. Install sediment basins, sediment traps, or similar sediment control measures before clearing or grading operations begin.
 - 2. Sediment generated by the construction of the Project shall be retained on the site.

3.05 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by University's Representative.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations", and University and governing regulations.
 - 1. Locate fire extinguishers, as indicated in referenced standards, as determined necessary by the Contractor, where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell. Provide extinguishers in field offices, storage sheds, tool houses, other temporary buildings, and throughout the site.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Protect and maintain unobstructed access to fire hydrants, fire extinguishers, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 - 4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
 - 5. A "Hot Work Permit" is required for operations utilizing welding, cutting metal with oxygen (acetylene torches), or other open-flame devices. The permit is required to prevent the inadvertent activation of the University's fire alarm system and for other fire protection reasons. If an alarm is set off, immediately call 9-911 on campus phones or 911 on off-campus phones. Obtain permit as specified in Section 01060 - "Regulatory Requirements".
 - 6. Use fire protection equipment only for fighting fires.
 - 7. Assign a qualified person with authority to maintain fire protection equipment, institute fire prevention measures, and direct the prompt removal of combustible and waste material.
- C. Permanent Fire Protection: NOT USED

- D. Barricades, Warning Signs and Lights: Comply with State safety standards and with code and University requirements for erection of structurally adequate barricades. Paint with appropriate colors, and provide 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.
1. Fencing, barricades, and control measures shall be readily visible and obvious.
 2. Provide walks and bikeways around obstructions made in public places.
 3. Leave protections in place and maintain in good condition until removal is authorized by University's Representative.
 4. Protect open excavations, manholes, and openings by solid barricades on all sides, and extend barricades down to the ground. The Campus population consists of several blind individuals who would not be aware of the excavations. Warning tape is not considered a solid barricade since it can be easily removed or broken.
 5. Excavations in, across, or adjacent to bikeways, walkways, or roadways left open overnight shall be identified with blinking construction lights and covered with solid barricades. Excavations, open holes, open manholes and trenches shall be fully covered with plywood during non-work hours or when unattended. Finish and backfill open trenches, holes, and excavations in a timely and expedient manner.
 6. Provide advance warnings or barricades in roadways and bike paths. The warning signs shall state "Roadway Closed Ahead", "Roadway Work Ahead", or similar wording.
 7. Campus bicycle paths shall be kept continually clear of obstacles of any size and shall not be blocked temporarily or permanently by construction vehicles, equipment, material or personnel. Rules and regulations for interfering with or crossing the bike paths shall be provided and monitored by the Campus Department of Environmental Health and Safety. Where interference or crossing occurs, the Contractor shall post warning signs and shall keep the bike path surfaces clean and dry at all times. This includes the continuous removal of any material, fluid, etc., that may cause a riding hazard.
- E. Enclosure Fence: When Work begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs and other animals from entering the site except by the entrance gates. Maintain control at entrances on a 24-hour per day basis by the use of locked gates, and provide keys to authorized University personnel.
1. The Work includes removal, relocation, and reinstallation of fences and gates as necessary for the sequencing of the Work indicated in the Contract Documents.
 2. Provide plywood and open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth. Paint plywood fences and provide opaque fabric on chainlink fences, both as specified in this Section.
 3. Provide gates for emergency access or exit, and for access to fire hydrants, walks, roads, and where shown or as required by University's Representative. Gates at fire hydrants shall be a minimum of 4' wide unless indicated otherwise. Apply reflective material to gates in the form of reflective tape or paint as approved by the University.

4. The use of temporary office trailers or storage sheds as part of the fence perimeters may be approved if they form a substantial barrier.
 5. Provide fences or barricades around cranes.
 6. The use of temporary office trailers or storage sheds as part of the fence perimeters may be approved if they form a substantial barrier.
 - a. Swing gates in both directions where indicated.
 7. Keep doorways clear of construction fencing.
 8. The Drawings indicate specific requirements for gates and access.
- F. Covered Walkway: Where necessary to provide adequate protection erect a structurally adequate protective covered walkway for passage of persons along adjacent areas. Coordinate with entrance gates, other facilities and obstructions. Comply with regulations of authorities having jurisdiction.
1. Construct using scaffold or shoring framing, waterproofed wood plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways and similar provisions for protection and safe passage. Maintain in a manner acceptable to University and University's Representative.
- G. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- H. Environmental Protection: Comply with requirements in Section 01150. Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations; that minimize the possibility that air, waterways and subsoil might be contaminated or polluted; or that prevent other undesirable effects that might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site. Protect building occupants from dust and fumes.
1. Dust Control: Provide positive methods and apply dust control materials to minimize raising dust from construction operations, and to prevent airborne dust from dispersing into the atmosphere. On a regular basis, use dust palliatives or sprinkle temporary roads, turf, and any site areas that have the potential for creating dust on the Project site or on properties affected by the construction.
 2. NOT USED
 3. NOT USED
 4. Noise Control: Conform to requirements of CAL-OSHA and to requirements specified in Section 01150. Provide noise reduction walls where indicated, if any, or where required by University's

Representative. Provide exterior walls, barriers, shrouds, or other devices as required to reduce noise levels at adjacent buildings.

5. Pollution Control:

- a. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations.
- b. Take special measures to prevent harmful substances from entering the Lagoon, public waters or sanitary and storm sewers.

6. NOT USED

7. Prior to installation, obtain approval of all environmental protections from University's Representative and University's Environmental Health and Safety Department.

- I. Security Guard Services: Provide such security guard services as deemed necessary to properly safeguard materials, tools, appliances and the Work. The University will not assume any responsibility for the loss or damage to materials, tools, appliances or work arising from acts of theft, vandalism, malicious mischief or other causes, which may occur during or after working hours.
- J. The wearing of hard hats will be mandatory at all times for personnel on this site. Provide hard hats for employees and visitors.
- K. Temporary Guardrails: Provide guardrails, railings and barricades as necessary to protect workers in all areas of construction.
- L. Provide the following clearances and fire truck access:
 1. Fire truck shall be able to approach within 150 feet of exterior perimeter of building on all sides.
 2. Provide access way 20'-0" wide by 13'-6" high. A width of 12'-0" may be approved for short distances, but obtain approval from University's Representative and Campus Fire Marshal.

3.06 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition as determined by University's Representative until removal. Protect from damage by inclement weather on a 24- hour per day basis where necessary.
 1. Protection: Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless University's Representative requests that it be maintained longer, remove each temporary facility when the need has ended, or when 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 the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

1. Return exterior landscaped and lawn areas, grades, and irrigated areas utilized for temporary facilities that are not to receive new Work under the Contract to substantially their original state, unless indicated otherwise.
2. Thoroughly rake the site. Pick up glass, metal and debris.
3. Materials and facilities that constitute temporary facilities are property of the Contractor.
4. Remove temporary pavings, if any, that are not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that does not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances which might impair growth of plant materials or lawns. Repair or replace paths, walkways, paving, curbs and sidewalks as required by University's Representative.
5. Legally dispose offsite debris resulting from removal of temporary facilities.
6. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.
 - d. Perform final cleaning operations specified in Section 01700.

END OF SECTION

SECTION 01505

CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The University has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to over packaging, error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.
- B. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfill shall be minimized.

1.02 WASTE MANAGEMENT PLAN

- A. Draft Waste Management Plan: Within 10 calendar days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the University and University's Representative a Draft Waste Management Plan. The Draft Plan shall contain the following:
 - 1. Analysis of the proposed job site waste to be generated, including types and quantities.
 - 2. Alternatives to Landfilling: Contractor shall designate responsibility for preparing a list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material (consult local integrated waste management programs), and the estimated net cost savings or additional costs resulting from separating and recycling (versus land filling) each material. "Net" means that the following have been subtracted from the cost of separating and recycling:
 - a. Revenue from the sale of recycled or salvaged materials.
 - b. Landfill tipping fees saved due to diversion of materials from the landfill.
 - 3. Landfill Options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
 - a. Revenue from the sale of recycled or salvaged materials.
 - b. Landfill tipping fees saved due to diversion of materials from the landfill.
 - 4. List of materials eligible to be recycled, reused or returned to manufacturer shall include, at minimum, the following materials:
 - a. Cardboard, paper, packaging
 - b. Clean dimensional wood, palette wood
 - c. Beverage containers
 - d. Land clearing debris
 - e. Concrete
 - f. Concrete Masonry Units
 - g. Asphalt
 - h. Metals from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - i. Drywall
 - j. Carpet and pad
 - k. Paint
 - l. Rigid Foam
 - m. Glass
 - n. Plastics

- B. Waste Management Plan: Once the University has determined which of the recycling options addressed in the draft Waste Management Plan are acceptable, the Contractor shall submit, within 10 calendar days, a Waste Management Plan. The Waste Management Plan shall contain the following:
1. Analysis of the proposed job site waste to be generated including types, quantities, and when during the job each type will be generated.
 2. Alternatives to Land Filling: A list of the waste materials from the Project that will be separated for reuse, salvage, or recycling.
 3. Landfill Options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
 4. Meetings: Contractor shall conduct a Construction Waste Management meeting as a part of the pre-construction meeting. Meeting shall include subcontractors affected by the Waste Management Plan.
 5. Materials Handling Procedures: A description of the means by which any waste materials identified in item (A.4) above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.
 6. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials. Provide an estimate of how often bins will need to be emptied.
 7. Suppliers: A description of the means by which materials and equipment will be delivered to the Site. Provide an estimate of packaging materials generated and whether suppliers will eliminate or take back packaging.
- D. Waste Management Plan Implementation:
1. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste Generated and Recycled by the Project. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall contain the following information:
 - a. The amount (in tons or cubic yards) of material landfilled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.
 - b. For each material recycled, reused, or salvaged from the Project, include the amount (in tons or cubic yards), the date removed from the job site, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material and the net total cost or savings of salvage or recycling each material. Attach manifests, weight tickets, receipts, and or invoices.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01532

TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.01 JOB CONDITIONS

- A. Tree and Plant Protection: Make every effort to protect trees, shrubs, ground cover and other vegetation existing on the site with the exception of that indicated to be removed.
- B. Temporary Protections:
 - 1. Provide temporary fencing, barricades or guards as required to protect trees and other plants, which are to remain, from above-grade damage. Erect prior to commencement of demolition Work and remove at Substantial Completion unless otherwise required by University's Representative.
 - 2. Protect root systems from smothering. Do not store construction materials, debris or excavated material within drip line (outer perimeter of branches). Do not permit vehicular traffic or parking within drip line.
 - 3. Protect all plant growth, including root systems of trees and plants, from the dumping of refuse or chemically injurious materials or liquids, and continual puddling or running water.
 - 4. Restrict foot traffic to prevent excessive compaction of soil over root systems.
- C. Trees to be preserved and protected will be visibly marked by University's Representative. Certain trees, located within or close to Work areas, will be marked for removal.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Wound Paint: Standard bituminous product as manufactured by Corona, Ortho, Flintkote, or equal.

PART 3 - EXECUTION

3.01 PERFORMANCE

- A. Protect root systems of trees, shrubs and ground covers from damage due to noxious materials in solution caused by runoff or spillage during mixing and placement of construction materials, or drainage from stored materials.
- B. Protect root systems from flooding, erosion or excessive wetting resulting from dewatering operations.
- C. Protect all existing plant material to remain against unnecessary cutting, breaking or skinning of roots and branches, and skinning and bruising of bark.
- D. Do not allow fires under or adjacent to trees or other plants which are to remain.

- E. Where cutting seems necessary, review conditions and obtain approval from University's Representative before proceeding.
- F. If required, cut branches and roots with sharp pruning instruments; do not break or chop. Paint cuts over 1/2 inch in size with wound paint.
- G. Water trees and other vegetation which are to remain as necessary to maintain their health during the course of the Work. Develop a watering schedule and submit to University's Representative for approval.

3.02 EXCAVATION AROUND TREES

- A. Excavate within drip line of trees only where indicated.
- B. Where trenching for utilities is required within drip lines, tunnel under or around roots by hand digging. Do not cut main lateral roots or tap roots; cut smaller roots which interfere with installation of new Work. Cut roots with sharp pruning instruments; do not break or chop.
- C. Where excavating for new construction is required within drip line of trees, hand excavate to minimize damage to root systems. Use narrow tine spading forks and comb soil to expose roots. Relocate roots in backfill areas wherever possible. If large, main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking.
- D. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches back from new construction.
- E. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover, or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with backfill.
- F. Prune branches in accordance with good horticultural practice to balance loss to root system caused by damage or cutting of root system.

3.03 GRADING AND FILLING AROUND TREES

- A. Maintain existing grade within drip lines of trees unless otherwise indicated.
- B. Lowering Grades: Where existing grade is above new finish grade shown around trees, carefully hand excavate within drip line to new grade. Cut roots exposed by excavation approximately 3 inches below elevation of new finish grade.
- C. Raising Grades: Where existing grade is 6 inches or less below elevation of finish grade shown, use existing topsoil fill material. Place in single layer and do not compact; hand grade to required finish elevations.

3.04 REPAIR AND REPLACEMENT OF TREES

- A. Engage a qualified tree surgeon to perform tree repair Work. Repair trees damaged by construction operations in an acceptable manner. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.
- B. Remove and replace trees that die during construction and trees damaged by Contractor which are determined by the tree surgeon to be incapable of restoration to normal growth pattern.

1. If trees less than 6 inches in caliper measurement (taken 12 inches above grade) are required to be replaced, provide new trees of same size and species as those replaced. Plant and maintain as directed.
2. If trees 6 inches or larger in caliper measurements (taken 12 inches above grade) are required to be replaced, provide new trees of equal size, and of the species selected by the University's Representative. Plant and maintain in accordance with standard horticultural practices and in a manner acceptable to the University's Representative.
3. If any of the trees indicated "to remain" are damaged to the point of being incapable of restoration to a normal growth pattern because of negligence or deliberate actions of the Contractor, the Contractor shall provide equal size trees of the same species.

END OF SECTION

SECTION 01560

TEMPORARY STORMWATER POLLUTION PREVENTION

PART 1 - GENERAL

1.01 GENERAL

- A. Stormdrains at the University of California Santa Barbara Campus discharge directly to creeks, the Goleta Slough, the Campus Lagoon, and the Pacific Ocean without treatment. Discharge of Pollutants or Contaminants (any substance, material, or waste other than uncontaminated stormwater) from this Project into the stormdrain system is strictly prohibited by the State Water Resources Control Board (SWRCB) and the Central Coast Regional Water Quality Control Board (RWQCB).
- B. The Contractor is responsible for stormwater quality within the Project site (which includes the staging area, material storage, waste management areas, construction areas, on-site parking, site entrances and exists, and anywhere Project construction disturbs soil) and the quality of stormwater leaving the Project site.
- C. The Contractor is required to prevent erosion of disturbed areas during construction and ensure pollutants, including sediment, do not leave the Project site, either water-borne, air-borne, on the tires of vehicles, or by spillage from offsite hauling of soils.
- D. The Contractor is responsible for properly managing all construction debris, solid and construction waste materials including litter, liquid waste including fluids from vehicles, construction materials, hazardous materials and waste, and sanitary and septic waste.
- E. The requirements in this section are intended to be implemented on a year-round basis, not just during the part of year when there is a high probability of a rain event which results in stormwater runoff. The requirements and practices discussed in this Section should be implemented at the appropriate level and in a proactive manner during all seasons while construction is ongoing.
- F. The following terms and their definitions will be used throughout this Section.
 - 1. Best Management Practices (BMPs) – The term BMP is used to describe the controls and activities used to prevent stormwater pollution.
 - 2. BMP Site Map – A map typically 11"x17" including, but not limited to, the following: entire construction site, site perimeter, adjacent roadways, all existing and proposed stormdrains on and near the site, site entrances/exits, building footprint, construction trailer, topography including slope and all current BMPs.
 - 3. Contaminants or Pollutants – Any substance, material, or waste other than uncontaminated stormwater, including, but not limited to materials such as acids, adhesives, asphalts, concrete compounds, curing compounds, detergents, fertilizers, glues, lime, paints, pesticides and herbicides, petroleum products, plaster, roofing tar, solvents, wood preservatives, soil and any materials that may be detrimental if released to the environment.
 - 4. Contractor – The term "Contractor" refers to the person or firm responsible for performing the work and is identified as such in the Agreement. The Contractor may use subcontractors, and the subcontractors may use sub-subcontractors to perform parts of the work. However, the Agreement

is between the University and the Contractor, and the Contractor alone is responsible for completing the Project.

5. Final Stabilization – Final stabilization is achieved when all construction activities are complete, all disturbed soil areas have been properly stabilized, all stormwater regulations have been achieved, and a uniform vegetative cover with 70 percent coverage has been established.
6. General Permit - National Pollutant Discharge Elimination System (NPDES) General Permit For Storm Water Discharges Associated with Construction Activity Water Quality Order 00-08-DWQ, Waste Discharge Requirements Order No. 99-08 DWQ (National Pollution Discharge Elimination System (NPDES) Permit No. CAS000002), Resolution No. 2001-046, Modification of Water Quality Order 99-08, State Water Resources Control Board, and any amendments or revisions of these permits or orders.
7. Hazardous Materials – Materials such as paints, solvents, petroleum products, pesticides, wood preservatives, treated wood, acids, roofing tar, batteries, Fluorescent lights, light ballasts, etc.
8. Maximum Extent Practicable (MEP) – Less-effective treatment or activities may not be substituted when it is practicable to provide more effective treatment or activities.
9. Notice of Intent (NOI) – Document that must be submitted to the State of California to obtain coverage under the General Permit and be permitted to develop property one acre or larger.
10. Notice of Termination (NOT) – Document that must be submitted to the State of California once the Project is complete and has achieved Final Stabilization, which certifies that all State and local requirements have been met in accordance with Special Provisions for Construction Activity, C.7, of the General Permit.
11. Post-Construction BMPs – Permanent features designed to minimize pollutant discharges, including sediment, from the site after construction has been completed. These features; such as bioswales, rain gardens, roof drains connected to landscaping, permeable pavement, etc.; will be installed and maintained by the Contractor during the construction of the Project until the Project has achieved Final Stabilization.
12. Project or Project site – All areas including the staging area, material storage, waste management areas, construction areas, on-site parking, site entrances and exits, and anywhere Project construction disturbs soil.
13. Questionnaire - UCSB Construction Stormwater Quality Questionnaire for Site Less than 1 Acre. See Exhibit 23.
14. Storm drain System - Stormwater conduits, stormdrain inlets and other stormdrain structures, street gutters, channels, watercourses, creeks, the Goleta Slough, the Campus Lagoon, and the Pacific Ocean.
15. Stormwater Pollution Prevention Plan (SWPPP) Sites greater than or equal to one acre – A living document that is site specific and created by the Contractor that specifies Best Management Practices that will prevent construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters. The SWPPP will be written to comply with all requirements of the State Water Resources Control Board (SWRCB) National Pollution Discharge Elimination System (NPDES) General Permit for Construction Stormwater Discharges (General Permit), and will be modified throughout the life of the Project, as needed, to maintain compliance with the General Permit.

1.02 RELATED SECTIONS

- A. Section 01010, "Summary of Work".
- B. Section 01150, "Environmental Protection Requirements".
- C. Section 01500, "Construction Facilities and Temporary Controls".
- D. Section 01565 Hazardous Materials Procedures

1.03 GENERAL CONTRACTOR SCOPE

- A. Provide all material, labor, and equipment, for installation, implementation, and maintenance of all stormwater quality control measures. This work includes the following:
 - 1. Complying with applicable standards and regulations per Paragraph 1.04 REGULATIONS AND STANDARDS.
 - 2. Furnishing, placing, and installing effective measures for preventing erosion and runoff of soil, silts, gravel, hazardous chemicals, all construction materials including wastes, or other materials prohibited by the Central Coast RWQCB from leaving the site and/or entering the stormwater drainage system.
 - 3. Management of onsite construction materials and waste in such a manner as to prevent said materials and waste from contacting stormwater or wash water and running off site and/or into the stormdrain system.
- B. Contractor shall have stormdrain pollution prevention measures in place and follow this Specification at all times. It is the responsibility of the Contractor to be prepared for a rain event, and to be aware of weather predictions. The University is not responsible for informing the Contractor of rain predictions.
- C. Contractor shall not allow any unauthorized non-stormwater to enter the stormdrain system or leave the construction site. Non-stormwater includes domestic supply water used onsite to wash painting and drywall equipment, tools, equipment, or vehicles.
- D. Sanitary sewer discharge regulations are intended to provide protection of the sanitary sewer system and Goleta Sanitary District (GSD) and Goleta West Sanitary District's (GWSD) wastewater treatment plants. In this Section, "sanitary sewer" shall include any sanitary sewer manhole, clean-out, side sewer or other connection to the GSD and GWSD wastewater treatment plants.
- E. Sanitary sewer blockage will likely result in a back-up and overflow to the stormdrain system. The Contractor shall immediately notify the University's Representative if there is a clogged sanitary sewer.

1.04 REGULATIONS AND STANDARDS

- A. Contractor shall comply with the following applicable regulations:
 - 1. Clean Water Act, United States Environmental Protection Agency.
 - 2. The Porter-Cologne Clean Water Act, State of California.

3. Central Coast Basin (Region 3) Water Quality Control Plan (Basin Plan).
 4. National Pollutant Discharge Elimination System (NPDES) General Permit For Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality Order 00-08-DWQ, Waste Discharge Requirements Order No. 99-08 DWQ (National Pollution Discharge Elimination System (NPDES) Permit No. CAS000002), Resolution No. 2001-046, Modification of Water Quality Order 99-08, State Water Resources Control Board, and any amendments or revisions of these permits or orders. These orders are referred to as the General Permit.
- B. Contractor shall comply with the following standards and guidelines on stormwater pollution prevention:
1. University of California, Santa Barbara BMP Handbook.
 2. California Stormwater Quality Association Handbooks – Construction, Municipal, Industrial and Commercial, and New Development and Redevelopment. These documents can be viewed and downloaded from the UCSB Environmental Health & Safety website, or at <http://www.cabmphandbooks.com/>.
 3. Caltrans Storm Water Quality Handbooks - This document can be viewed and downloaded from the UCSB Environmental Health & Safety website, or at <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>.

1.05 SUBMITTALS

- A. The Contractor shall comply with all State Construction Stormwater Program Requirements identified in the General Permit. These requirements include the development of a Storm Water Pollution Prevention Plan (SWPPP) and preparation for submittal by the University, a Notice of Intent (NOI) to obtain coverage under the General Permit, which will be signed by the University's Representative.
1. The Contractor is required to develop and implement a site specific SWPPP using UCSB's SWPPP Template, provided on the UCSB Environmental Health & Safety website, which emphasizes the use of appropriately selected, correctly installed and maintained pollution reduction Best Management Practices (BMPs) that will prevent construction pollutants from contacting stormwater and leaving the Project site. The SWPPP shall be inclusive of all stormwater requirements in this and all Specifications in Division 1, the UCSB SWPPP Template, the General Permit, and the requirements set by the SWRCB and the RWQCB. The SWPPP shall be completed and signed by a registered civil engineer or Certified Professional in Erosion and Sediment Control. The SWPPP shall remain on the Project site while the site is under construction, commencing with the initial mobilization and ending with the termination of coverage under the permit.
 2. Individuals responsible for SWPPP preparation, implementation, and permit compliance shall be appropriately trained, and all training and qualifications shall be documented in the SWPPP. This includes those personnel responsible for installation, inspection, maintenance, and repair of BMPs. Those responsible for overseeing, revising, and amending the SWPPP shall also document their training. Training should be both formal and informal, occur on an ongoing basis when it is appropriate and convenient, and should include training/workshops offered by the SWRCB, RWQCB, and other locally recognized agencies or professional organizations.
 3. Submit the site-specific SWPPP and the completed Notice of Intent (NOI) form to the University's Representative for review and approval prior to implementation of storm water best

management practices. At the completion of the review, a meeting will be conducted by the University's Representative with the Contractor to discuss and agree upon the implementation of the SWPPP. The NOI will be signed by the University's Representative and submitted by the Contractor.

4. No work shall begin until the SWPPP has been approved, the NOI has been approved by the SWRCB, and the SWPPP has been implemented.
5. Post a laminated copy of the SWRCB approved NOI in a visible location near the entrances/exits of the site. Include a copy of the NOI in the appropriate section of the SWPPP.
6. The SWPPP shall be developed and revised as necessary to meet the following objectives:
 - a. To identify Pollutant sources associated with construction activity that may affect the quality of stormwater discharges.
 - b. To identify and prevent non-stormwater discharges.
 - c. To identify, construct, and implement stormwater pollution prevention measures (BMPs) to reduce or eliminate pollutants in stormwater discharges from the construction site, both during construction and after construction is completed.
 - d. Contractor shall amend the SWPPP whenever there is a change in construction or operations that may affect the discharge of pollutants to surface waters. The SWPPP should also be amended if it is in violation of any condition of the General Permit or has not achieved the general objective of reducing pollutants in stormwater. All amendments should be dated, signed, included in the SWPPP, and a summary sent to the University's Representative. Amendments include, but are not limited to, the following:
 - Pollutant sources including sources of sediment that may affect the quality of stormwater discharges.
 - Authorized non-stormwater discharges.
 - Change in BMPs used on the Project site.
 - Schedule of activities that may affect the quality of stormwater discharges.
 - Maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants.
 - Contractor's stormwater personnel contact information.
 - Contractor's stormwater personnel training information.
 - e. The SWPPP shall include a BMP Site Map that illustrates pollution sources for construction activities and the methods that will be used for erosion and sediment control, hazardous materials management, and any other construction activities that are sources of stormwater pollution. The BMP Site Map is a map typically 11"x17" including, but not limited to, the following: entire construction site, site perimeter, adjacent roadways, all existing and proposed stormdrains on and near the site, site entrances/exits, building footprint, construction trailer, topography including slope, all current BMPs, NOI, and the location of the Stormwater Pollution Prevention Plan (SWPPP). Refer to the UCSB BMP Handbook for a list of UCSB recommended BMPs. Refer to 3.02 IMPLEMENTATION for a list of the minimum BMPs that are required to be installed and maintained throughout the life of the Project.
 - f. The Contractor is required to retain records of all monitoring information, copies of all reports required by the General Permit, and records of all data used to complete the NOI for all construction activities to be covered by the General Permit. Submit all said documents and the complete SWPPP to the University's Representative once the Project has achieved Final

Stabilization and the SWRCB has approved the NOT.

7. Throughout the construction period, a qualified person appointed by the Contractor is required to conduct and document inspections and evaluations as detailed in the SWPPP, including: weekly site inspections, pre-rain event inspections within 24 hours prior to a rain event, post-rain event inspections within 24 hours after a rain event, every 24 hours during an extended rain event (lasting longer than one day), and maintenance inspections.
 - a. Report the results of the inspections in writing using the UCSB Construction Stormwater Inspection Form and place a copy of the report in the SWPPP. Each report needs to be signed off by the University's Representative. Once the corrective actions identified in the report have been completed the completed action items need to be signed off by the University's Representative. Every weekly inspection will be performed on the same day or close to the same day of the week. Submit all completed inspection sheets and SWPPP amendments from the previous week, to the University's Representative on the first day of each week. The name(s) and contact number(s) of the assigned inspection personnel shall be listed in the SWPPP.
 - b. Major observations to be made during inspections include the locations of discharges of sediment or other pollutants from the site, evaluating whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the terms of the General Permit, and whether additional control practices or corrective maintenance activities are needed.
 - c. Authorized representatives of the SWRCB and the RWQCB and the University's Representative shall be allowed to enter the Project site as needed to conduct onsite inspections throughout the life of the Project.
8. The Contractor is required to certify annually that the construction activities are in compliance with the requirements of the General Permit. Complete the annual certification form and submit for review to the University's Representative 14 days prior to the deadline. After review and approval, the Contractor shall submit the annual certification form and fees to the SWRCB before the deadline. Include a copy of the annual certification in the SWPPP.
9. When construction is complete, the Project site has achieved Final Stabilization, all construction materials and waste have been disposed of properly, the Project site is in compliance with all stormwater regulations, and the Project is deemed complete by the University's Representative, submit the completed Notice of Termination (NOT) form to the University's Representative for review and approval. Once the NOT is approved and signed by the University's Representative, the Contractor shall submit the NOT and fees to the SWRCB. Include a copy of the State approved NOT in the SWPPP.
10. When construction is complete, the Project site has achieved Final Stabilization, all construction materials and waste have been disposed of properly, the site is in compliance with all stormwater regulations, and the Project is deemed complete by the University's Representative, submit the completed SWPPP with all necessary documents including but not limited to inspections, annual certifications, SWPPP amendments, training certificates, schedules, qualifications, BMP Site Maps, NOI, and NOT to the University's Representative.
11. The Contractor shall bear all costs associated with the development of the SWPPP, NOI, NOT, annual certification, installation of all SWPPP measures, and the maintenance of said control measures as outlined in the Contractor's SWPPP.

1.06 ENVIRONMENTAL ENFORCEMENT

- A. The SWRCB and the RWQCB have the authority to enforce, through codified regulations, any portions of this Section that if not implemented may violate applicable regulations. Agency enforcement may include but is not limited to: citations, orders to abate, bills for cleanup costs and administration, civil suits, and/or criminal charges. Regulating agencies will cite UCSB for all violations which will be the Contractor's responsibility to correct, pay any fines issued, and remedy all violations as needed. The University's Representative may stop all construction activities as deemed necessary until such violations are remedied.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Provide products and materials as indicated in the Questionnaire/SWPPP, including Activity and Best Management Practice sheets and Drawings.
- B. Where product or material requirements are not specified in the Questionnaire/SWPPP, comply with other applicable sections of the Specifications and obtain approval of the University's Representative.

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor will write and implement the Questionnaire/SWPPP and include a BMP Site Map and written description of pollution prevention methods. The intent of this requirement is to ensure Contractor compliance with applicable regulations for the discharge of stormwater from the Project. The Contractor will choose the best available performance-based technology and methods to prevent stormwater pollution from construction activities to the Maximum Extent Practicable (MEP). The method(s) chosen shall be appropriate for each specific site condition.
- B. The Contractor will implement the Questionnaire/SWPPP once it has been reviewed and approved by the University's Representative. Construction activities including clearing and grading will not begin until the Questionnaire/SWPPP has been implemented.
- C. The University's Representative and the Contractor will meet to discuss and agree upon implementation of the Questionnaire/SWPPP.
- D. The Contractor is required to maintain a standby crew for emergency work at all times during the rainy season, October 1 through May 1. Necessary materials shall be available on the Project site and stockpiled at convenient locations to facilitate rapid construction of temporary devices or to repair any damaged stormwater quality control measures when rain is imminent.

3.02 IMPLEMENTATION

- A. Stormwater Quality Control Measures
Comply with all requirements and stormwater quality control measures of the Questionnaire/SWPPP including, but not limited to, the following approved BMPs referenced in the UCSB BMP Handbook. This list is not all inclusive and the Contractor should refer to the resources listed in Paragraph 1.04 REGULATIONS AND STANDARDS of this Section for additional information. The Contractor will consult the University's Representative before implementing a BMP that is not included in the UCSB BMP Handbook. The Contractor is required to, at a minimum, implement the following applicable BMPs. The Contractor may implement equivalent BMPs as long as the University's Representative

approves. The Contractor is required to include BMP specification sheets for all BMPs that are not currently listed in the UCSB BMP Handbook.

1. Best Management Practices

a. Erosion Control (EC)

Provide a description of erosion control measures, including a time schedule, to be implemented during construction to minimize erosion on disturbed areas of the Project site, and identify the controls on the BMP Site Map. Areas requiring erosion control measures are exposed soil, such as soil piles, bare soil, sloped soil, and any area of disturbed soil. All inactive soil disturbed areas on the Project site and some active areas that are not experiencing high traffic, including relatively flat areas, must be protected from erosion. Both erosion and sediment control practices are designed to be implemented as an integrated system of pollution control. Without erosion controls, sediment controls are easily overwhelmed and will not prevent pollution. Preserve existing vegetation where feasible, limit disturbance of existing vegetation, and stabilize and revegetate disturbed areas as soon as possible after grading or construction. Stabilize exposed soil to the Maximum Extent Practicable (MEP) throughout the duration of the Project.

1. The Contractor is required to implement the following applicable BMPs, or equivalent BMPs with the approval of the University's Representative:

- EC – 1 Scheduling of Activities
- EC – 2 Preserving Existing Vegetation
- EC – 3 Temporary Soil Stabilization: Erosion Control Blanket

b. Temporary Sediment Control (TSC)

Provide a description of temporary sediment control measures that will be used on the Project site, and identify the controls on the BMP Site Map. Temporary sediment control measures generally involve intercepting sediment laden runoff, slow the flow of stormwater, and cause suspended sediment particles to drop out of suspension to ensure contaminants do not leave the Project site and enter the waters of the United States. An example of temporary sediment control measures include stormdrain inlet protection and site perimeter controls. Do not use sand bags near the Project site perimeter or near stormdrain inlets. Install sediment control BMPs at appropriate locations along the site perimeter and at all operational inlets to the stormdrain system. All new and existing roadways, curbs, and gutters must be protected from sediment-laden runoff, are considered as perimeters of the site, and will need perimeter controls installed. Sediment control BMPs should be installed and maintained according to specifications. Ensure that adequate erosion control, sediment control, and soil stabilization BMPs are available onsite throughout the life of the Project.

1. The Contractor is required to implement, at a minimum, at least one of the following applicable perimeter control BMPs, or equivalent BMPs with the approval of the University's Representative:

- TSC – 1 Cut Back Curb (Perimeter Control)
- TSC – 2 Fiber Roll (Perimeter Control)
- TSC – 3 Gravel Bag Berm (Perimeter Control)

2. The Contractor is required to implement the following applicable BMPs, or equivalent BMPs with the approval of the University's Representative:

- TSC – 4 Stormdrain Inlet Protection (Secondary Control)
- TSC – 5 Slope BMP: Fiber Roll or Gravel Bag

c. Tracking Control (TC)

All new and existing roadways, curbs, and gutters must be protected from sediment-laden runoff, are considered as perimeters of the site, and will need to be swept and vacuumed daily to ensure sediment and pollutants from construction activities are not leaving the site and potentially entering the stormdrain system. Identify and clearly mark one or two locations where vehicles will enter and exit the construction site and focus stabilizing measures at these locations. Install and maintain a stabilized entrance at all Project site entrances and exits to prevent tracking of mud and sediment off site. Vacuum and sweep sidewalks, roadways, site entrance/exit, curb, and gutter daily. Do not use kick brooms or sweeper attachments. Dispose of sweeper waste at an approved disposal facility. If construction parking is permitted on the Project site, then the area needs to be properly maintained and free of tracking and trash.

1. The Contractor is required to implement the following applicable BMPs, or equivalent BMPs with the approval of the University's Representative:
TC – 1 Stabilized Construction Entrance: Rumble Strips
TC – 2 Sweeping and Vacuuming

d. Wind Erosion Control (WEC)

Contractor shall use best available dust suppression equipment and methods to control dust so that the dust does not cause discomfort or nuisance to occupants of the Project site neighboring property. Contractor shall control dust suppression water so that it is effective in controlling dust, but does not leave the Project site or enter the stormdrain system. Contractor shall describe their dust suppression water management methods in the Questionnaire/SWPPP

1. The Contractor is required to implement the following applicable BMP, or equivalent BMPs with the approval of the University's Representative:
WEC – 1 Dust Control

e. Non-Stormwater Management (NSM)

Non-stormwater discharges include a wide variety of sources, including improper dumping, spills, or leakage from storage tanks or transfer areas. Eliminate all unauthorized non-stormwater discharges to the Maximum Extent Practicable. Assign a qualified person the responsibility for ensuring that no materials other than stormwater, free of all contaminants, are discharged. Include the name, contact information, and qualifications of said person in the Questionnaire/SWPPP.

All workers on the Project site must be adequately trained on non-stormwater management procedures and be in compliance with procedures such as the following at all times:

- Washing in designated, contained areas only.
- Eliminating discharges to the stormdrain system by infiltrating the wash water on site.
- All washing activities must be approved by the University's Representative if there is a potential to discharge to the stormdrain system or for discharge to leave the Project site.
- Do not wash paved areas.
- Route water line flushing and water from water line repair to landscaped areas.
- Avoid dewatering discharges by using water for dust control or allow to infiltrate onsite.
- Unauthorized non-stormwater cannot be discharged without obtaining a permit from the Central Coast RWQCB.
- Send vehicles/equipment offsite to be cleaned, fuelled, and repaired as much as possible. If it cannot be avoided, the Contractor is required to follow the practices described in NSM-3 Vehicle and Equipment Practices.
- Inspect the site regularly for evidence of illicit connections, illegal dumping, or discharges.
- Discharges of stormwater and non-stormwater exposed to concrete during curing and finishing may have a high pH and may contain chemicals, metals, and fines. Properly

maintain all chemicals and wastes related to concrete curing and finishing as outlined in NSM-5 Concrete Curing and NSM-6 Concrete Finishing.

- Prevent the discharge of pollutants from paving operations by following the practices described in NSM-7 Paving and Grinding Operations.
- Minimize use of hazardous materials onsite. Store and dispose of all materials properly. Do not allow hazardous materials to come in contact with stormwater which could run off site and pollute the stormdrain system.

1. The Contractor is required to implement the following applicable BMPs, or equivalent BMPs with the approval of the University's Representative:

- NSM – 1 Water Conservation
- NSM – 2 Dewatering Operations
- NSM – 3 Vehicle and Equipment Practices
- NSM – 4 Illicit Connection/Illegal Discharge Detection
- NSM – 5 Concrete Curing
- NSM – 6 Concrete Finishing
- NSM – 7 Paving and Grinding
- NSM – 8 Potable Water/Irrigation
- NSM – 9 Material Use

f. Waste Management (WM)

The Contractor is required to prevent the discharge of pollutants to stormwater from solid or liquid wastes that will be generated at the Project site. Dumpsters or disposal containers of sufficient size, number, complete with no holes or damage where waste could leak out, are watertight, and have proper covering will be provided and properly maintained by the Contractor. Littering on the Project site is prohibited. If necessary, the Contractor may provide and maintain trash receptacles at locations where workers congregate for lunch and breaks, as long as the trash receptacles have no holes or breaks where waste could leak out, are watertight, are properly covered, and are properly maintained. Construction debris and litter from work areas within the construction limits of the Project site shall be collected and placed in watertight dumpster at the end of every work day. Provide convenient, well-maintained, and properly located toilet facilities. All workers on the Project site must be adequately trained on proper material use, storage, and waste disposal. The Contractor is required to implement a comprehensive set of waste-management practices for hazardous or toxic materials including storage, handling, inventory, and clean-up procedures.

All workers on the Project site must be adequately trained on waster management procedures and be in compliance with procedures such as the following at all times:

- Temporary material storage should be covered, have secondary containment, and be located away from vehicular traffic, the Project perimeter, and stormdrains.
- The Contractor shall provide and properly maintain an adequate number of watertight, crack free, covered containers for all trash and waste related to the construction Project. Collect construction trash daily throughout the Project and from around the perimeter of the site.
- Store dry and wet concrete materials under cover, in secondary containment, away from drainage areas and the Project perimeter. Concrete washout is only permitted in a designated and properly maintained concrete washout bin. Concrete is not allowed to be dumped or spilled anywhere onsite except in the concrete washout bin.
- Temporary sanitary facilities should be located away from watercourses, stormdrain inlets, the Project site perimeter, and traffic circulation. If there is a risk of tipping over or being blown over, the temporary sanitary facility should be secured by stakes or ties to prevent overturning. Wastewater should never be discharged or buried within or anywhere around the Project site.
- Locate stockpiles on a permeable surface a minimum of 50 feet away from concentrated

flows of stormwater, stormdrain inlets, and the Project site perimeter. Do not place stockpiles on an impermeable surface. Completely cover all stockpiles with a tarp or some type of cover; anchor the cover to ensure the stockpile is completely covered at all times.

- Spills of oil, petroleum products, substances listed under 40 CFR Parts 11, 117, and 302, and sanitary wastes should be contained and cleaned up immediately. Practice spill prevention procedures at all times including proper material handling and storage. Provide stockpiles of cleanup materials at key locations throughout the Project site.
1. The Contractor is required to implement the following applicable BMPs, or equivalent BMPs with the approval of the University's Representative:
 - WM – 1 Material Delivery and Storage
 - WM – 2 Trash Containment
 - WM – 3 Temporary Concrete Washout and Waste Management
 - WM – 4 Sanitary Waste Management
 - WM – 5 Stockpile Management
 - WM – 6 Spill Prevention and Control
 - WM – 7 Hazardous Waste Management
 - WM – 8 Contaminated Soil Management

B. Monitoring and Maintenance

Throughout the life of the Project and especially during the rainy season, all protective devices shall be in place at the end of each working day including those protective devices removed during the day's activities. Please note: no protective devices shall be removed during a rain event.

1. Do not move or modify stormwater quality control devices without the approval of the University's Representative.
2. All removable protective devices indicated on the Questionnaire/SWPPP shall be in place at the end of each day and especially any time rain is predicted in the Santa Barbara area.
3. After a rain event, manage and repair all stormwater quality control devices to ensure they are in good working condition. Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible, depending upon worker safety.

C. Water Main and Sanitary Sewer Line Break Contingency Plan

If working on or near a water main line or sanitary sewer line, the Contractor shall have a written emergency response plan that states procedures for responding to a break and release of supply water or waste water to the stormdrain system. The Contractor shall meet the following requirements:

1. Water Main Work
 - a. Determine the direction of water flow if the main were to break.
 - b. Divert water from entering the storm drain system and contain when possible.
 - c. If there is a water main break, pump the water that is collected or diverted to a sanitary sewer, based on the approval of the University Representative.
 - d. Put in place, before digging, sediment control structures upstream of drain inlets and at drain inlets.

- e. If a break occurs contact the University's Representative or inspector of record immediately. Include in the Plan the phone number of the University's Representative.

2. Sanitary Sewer Line Work

- a. Determine where the sewage will flow if the work could cause a blockage.
- b. Contain any sewage spill from entering the storm drain system.
- c. If a sewage blockage occurs, pump it to a sanitary sewer, and do not allow it to flow into the stormdrain system.
- d. If a sewage blockage or spill occurs contact the University's Representative or inspector of record immediately. Include in the Plan the phone number of the University's Representative contact.

3. Excavation Work

This Paragraph applies to Contractors that excavate in the vicinity of sanitary sewer lines and cause or discover a sewage spill, leak or blockage.

- a. Immediately notify the University's Representative. Include in the Plan the phone number of the University's Representative.

D. Good Housekeeping Practices

The Contractor shall implement the following applicable good housekeeping practices:

- 1. Store materials that have the potential to be transported to the stormdrain system by stormwater runoff or spillage away from areas of heavy traffic and under cover in a contained area or in sealed waterproof containers.
- 2. Use tarps on the ground to collect fallen debris or splatters that could contribute to stormwater pollution.
- 3. Secure opened bags of powdered materials (if any) that could contribute to stormwater pollution and visible dust emissions.
- 4. Pick up litter, construction debris, and other waste generated by Project activities daily from the Project site and adjacent areas, including the sidewalk area, gutter, street pavement, and stormdrains impacted by the Project. All wastes shall be stored in watertight covered containers, disposed of, or recycled immediately.
- 5. Clean sidewalks, driveways, or other paved areas within and around the construction site to eliminate or prevent mud-tracking conditions. Dispose of sweepings in a place that will not pollute the stormdrain system. If wash-water is used in the interior of the site ensure it does not leave the site perimeter or enter a stormdrain inlet. The discharge of wash-water to the stormdrain system is prohibited.
- 6. Inspect vehicles and equipment arriving on-site for leaking fluids, and promptly repair leaking vehicles and equipment. Use drip pans to catch leaks until repairs are made.
- 7. Avoid spills by handling materials carefully. Keep a stockpile of appropriate spill clean-up materials, such as rags or absorbent materials, readily accessible on site. Clean up all spills of materials brought on site for Project activities.

8. Train employees regularly on good housekeeping practices and procedures. Assign responsibility to specific employees for inspecting good housekeeping and responding to spills.

E. Post-Construction Stormwater Run-Off Control Measures

1. All permanent structural and nonstructural control measures that are planned for the Project to control pollutants in stormwater discharges after construction is completed shall be delineated on a post-construction BMP Site Map. Post-construction BMPs include, but are not limited to:
 - a. Minimization of land disturbance.
 - b. Minimization of impervious surfaces.
 - c. Treatment of stormwater run-off using infiltration.
 - d. Water detention/retention, bioswales, or rain gardens.
 - e. Bio-filter BMPs.
 - f. Efficient irrigation systems.
 - g. Ensuring that interior building drains and trash enclosures are tied to the sanitary sewer system, and not the stormdrain system.
 - h. Appropriately designed and constructed energy dissipation devices.
 - i. Ensuring that roof drains are directed to rain gardens or landscaped areas, not the stormdrain system.
 - j. Use permeable pavement and permeable surfaces where possible.
2. Post construction BMPs must be consistent with all University's and local post-construction stormwater management requirements, policies, and guidelines.
3. Contractor shall refer to construction drawings for post-construction BMPs and include them in the SWPPP and on the post-construction BMP Site Map.

F. Personnel Training

1. The Contractor shall train its employees working on the site on the requirements contained in this Section. Training should be both formal and informal, occur on an ongoing basis when it is appropriate and convenient, and should include training/workshops offered by the SWRCB, RWQCB, and other locally recognized agencies or professional organizations.
2. The Contractor shall document this training in writing. The University's Representative for the site will request to see the training materials and records at the onset of work. All training records will be included in the SWPPP.
3. The Contractor shall inform all subcontractors (if any) of the water pollution prevention requirements contained in this specification and include appropriate subcontract provisions to ensure that these requirements are met.

3.03 Final Stabilization

- A. All disturbed areas of the construction site must be stabilized before the Project is deemed complete. Final Stabilization for the purposes of submitting a NOT is satisfied when all disturbing soil activities are completed, all construction materials and waste have been disposed of properly, the site is in compliance with all stormwater regulations, and a uniform vegetative cover with 70 percent coverage has been established.
- B. When construction is complete, the Project site has achieved Final Stabilization, all construction materials and waste have been disposed of properly, the site is in compliance with all stormwater regulations, and the Project is deemed complete by the University's Representative, submit the completed Notice of Termination (NOT) form to the University's Representative. The NOT will be signed by the University's Representative.
- C. When construction is complete, the Project site has achieved Final Stabilization, all construction materials and waste have been disposed of properly, the site is in compliance with all stormwater regulations, and the Project is deemed complete by the University's Representative, submit the completed SWPPP with all necessary documents including but not limited to inspections, annual certifications, SWPPP amendments, training certificates, schedules, qualifications, BMP Site Maps, NOI, and NOT to the University's Representative.
- D. When construction is complete, the Project site has achieved Final Stabilization, all construction materials and waste have been disposed of properly, the site is in compliance with all stormwater regulations, and the Project is deemed complete by the University's Representative, if the stormwater protections are no longer required and upon obtaining approval from the University's Representative and the University's Representative, remove the protections and restore the site or structure to the required condition.

END OF SECTION

SECTION 01561

EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes procedures, requirements and guidelines for erosion and sediment control measures during construction.
- B. Related Sections:
 - 1. Section 01010, "Summary of Work".
 - 2. Section 01150, "Environmental Protection Requirements".
 - 3. Section 01500, "Construction Facilities and Temporary Controls".
 - 4. Section 31 05 13, "Soils for Earthwork".

1.02 EROSION CONTROL

- A. General:
 - 1. Contractor is responsible for erosion and sediment control within the Project site or anywhere the Project construction disturbs the surface vegetation or soil.
 - 2. Prevent erosion of graded areas during construction and until erosion control measures are installed.
 - 3. Prevent sediment from leaving the Project site, either water-borne, air-borne, on the tires of vehicles, or by spillage from off-site hauling of soils.
 - 4. Comply with requirements for dust, erosion, and sediment control imposed on the Project, including, but not limited to, Campus requirements and NPDES Permit requirements imposed by the Central Coast Regional Water Quality Control Board.
 - 5. Include the cost of erosion and sediment control measures in the Contract Sum.
- B. Work Restrictions:
 - 1. Do not perform clearing, brushing, or grading until temporary desilting facilities are in place at each watercourse leaving the Project site and until any portion of the site which slopes toward the perimeter has adequate perimeter control facilities in place.
 - 2. Do not perform grading between October 15 and April 15, the normal rainy season, unless the facilities for erosion control shown on the approved Plan are in place.
 - 3. Upon completion of sitework leave in place only those erosion and sediment control measures that are necessary for continued protection during subsequent Work on the Project.

1.03 SUBMITTALS

- A. Erosion and Sediment Control Plan: Submit a Plan prepared by a currently registered California Civil Engineer. Plan shall include any denuded soil area within the Project site or any other area where the soil surface will be disturbed by construction operations.

PART 2 - PRODUCTS

2.01 EROSION AND SEDIMENT CONTROL PLAN

- A. Provide temporary soil stabilization measures on graded slopes steeper than a ratio of three (horizontal) to one (vertical), or greater than 10 feet in height.
- B. Show desilting facilities located at all drainage outlets from the graded site, designed for a 25-year storm intensity. Detail the desilting facilities on the Plan.
- C. Show on the Plan the placement of devices required to reduce erosion damage within the Project site.
- D. Provide for the control of the grading Work so as not to violate the assumptions and requirements of the Plan.
- E. Include the following on the Plan:

In case of emergency call _____
(Responsible Person)
at _____.
(24-hour phone number)

The undersigned Civil Engineer will review the erosion control Work.

(Signature)

(Date)

(California Registered Engineer No.)

- F. Agreement to the Plan by the University's Representative or other parties does not relieve Contractor from full responsibility for its effectiveness.

PART 3 - EXECUTION

3.01 GENERAL IMPLEMENTATION REQUIREMENTS

- A. Implement the Plan at the time that the Project site is stripped of vegetation.
- B. University's Representative and Contractor will meet to discuss and agree upon implementation of the Plan.
- C. Maintain a standby crew for emergency Work at all times during the rainy season, October 15 through April 15. Necessary materials shall be available on the Project site and stockpiled at convenient locations to facilitate rapid construction of temporary devices or to repair any damaged erosion control measures when rain is imminent.

3.02 IMPLEMENTATION

- A. Do not move or modify devices without the approval of the University's Representative.
- B. All removable protective devices indicated on the Plan shall be in place at the end of each day when the five-day rain probability forecast exceeds 40 percent.
- C. After a rainstorm, remove all silt and debris from check berms and desilting basins. Immediately repair any protection measures damaged during a rainstorm.
- D. Areas at the top of cut or fill slopes must drain away from the slope at the end of each working day.
- E. Whenever the depth of water in any device exceeds two feet, barricade or guard the site for public safety until the water has subsided.
- F. Fill sand bags only with sand or granular soil. Do not use gravel unless specifically approved by University's Representative.

3.03 USE OF PERMANENT DRAINAGE FACILITIES

- A. Any permanent structures or detention devices which appear in the Contract Documents may be utilized in the Erosion and Sediment Control Plan on the condition that they are temporarily modified to serve the Contractor's purposes and are cleaned before Substantial Completion of the Project.
- B. Permanent structures or detention devices included in the Contract Documents have been designed for use in drainage control upon completion of the Project. They shall not be considered as adequate for control during construction except by the independent determination of the Contractor.

END OF SECTION

SECTION 01565

HAZARDOUS MATERIAL PROCEDURES

PART 1. GENERAL

1.01 HAZARDOUS MATERIALS PROCEDURES

- A. Except as otherwise specified, in the event Contractor encounters on the project site material reasonably believed to be asbestos or other hazardous materials which have not been rendered harmless, Contractor shall immediately stop Work in the area affected and report the condition to University and University's Representative in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of University and Contractor if in fact the material is asbestos or other hazardous materials and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or other hazardous materials, or when such materials have been rendered harmless.

1.02 GENERAL DESCRIPTION

- A. This section consists of furnishing all work necessary to perform asbestos-related demolition of asbestos cement (transite) pipes located within the project limits. All work shall be performed in accordance with all federal, state, and local requirements and statutes. The work specified herein shall be the removal of asbestos-cement pipes by persons knowledgeable, qualified, trained, and experienced in the removal, treatment, handling, transportation, and disposal of asbestos-cement and the cleaning of the affected environment.

1.03 SCOPE OF WORK

- A. General Requirements: Work of this section includes but is not limited to the following:
 - 1. Obtaining all notifications and permits required to perform the work.
 - 2. Developing a detailed asbestos-related work plan, including work sequence, work area isolation, asbestos-cement removal methods, and transport/disposal procedures.
 - 3. Removing and legally disposing of all asbestos-cement materials removed from the project site.
 - 4. The Contractor shall perform employee exposure monitoring as required by Cal-OSHA during the removal.
 - 5. Asbestos-cement shall be removed as Class II asbestos work. In tact asbestos-cement waste shall be disposed of as non-friable, non-hazardous asbestos waste. Broken asbestos-cement debris shall be disposed of as friable, hazardous waste.

1.04 SUBMITTALS

- A. Submit, as applicable, the following to the University's Representative for approval within 10 days of receiving the Notice to Proceed. These submittals are in addition to those required in Section 01340.
 - 1. Copies of written notification to the following regulatory agencies:

a. California Division of Occupational Safety and Health

2. Copies of waste haulers.

3. Identification of the landfill to be used for the disposal of the asbestos-cement waste, packaging and labeling requirements, manifesting requirements, and landfill/disposal requirements.

4. A written asbestos abatement work plan identifying sequence, dust control measures, work area preparation, personal protection equipment to be utilized, asbestos-cement removal procedures, disposal procedures, waste handling, storage, and disposal procedures.

5. Identification of the project's Asbestos Related Demolition Supervisor/Competent Person who meets the requirements of 29 CFR Part 1926.1101 and 8 CCR Part 1529 and is experienced in administration and supervision of asbestos abatement projects, including work practices, protective measures for building and personnel, disposal procedures, etc.

6. Documentation that the Contractor's employees performing asbestos-cement removal have received training which meets the criteria of the California Code of Regulations Title 8 § 1529.

a. Training certification shall be provided prior to the start of work involving asbestos cement products for all of the Contractor's workers, forepersons, and supervisors.

7. Hazardous waste manifests, non-hazardous waste data forms, and disposal receipts for asbestos-cement waste removed from the work area shall be provided within 24 hours of the transport. Send to:

University of California, Santa Barbara
Environmental Health and Safety Department Bldg. 565
Santa Barbara, California 93106
Attention: Bruce Carter or other UC-Designated Personnel
Hazardous Waste Program Manager

8. Clearance for all asbestos-cement removal procedures shall be a visual inspection. Contractor shall re-clean the area, at no additional cost to the University, until area has passed the visual clearance.

1.05 ALTERNATE PROCEDURES

A. The procedures described in this Section shall be utilized at all times.

B. If specified procedures cannot be utilized, a request shall be made in writing to the University providing details of the problem encountered and proposed alternatives.

C. Alternative procedures shall provide equivalent or greater protection than the procedures that they replace.

D. Alternative procedure shall be approved in writing by the University prior to implementation.

END OF SECTION

SECTION 01570

TRAFFIC CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Traffic control includes the provision for orderly regulation of vehicular, bicycle and pedestrian traffic into, through and within the construction zone. Construction of detours, street and driveway closures, bicycle paths, and pedestrian bridges which are necessary and required for the protection of the traveling public during construction of the facilities are included within the scope of traffic control.
- B. Comply also with requirements in the following Sections:
 - 1. Section 01060, "Regulatory Requirements".
 - 2. Section 01500, "Construction Facilities and Temporary Controls".
- C. Payment: The cost for traffic control as specified in this Section and as necessary for this Project shall be included in the Contract Sum.

1.02 QUALITY ASSURANCE

- A. Notifications:
 - 1. Notify the University 72 hours prior to the start of Work on this Project. The University will then notify all appropriate departments within UCSB 72 hours prior to the complete or partial closing of a street or other traveled way.
 - 2. Post professionally fabricated signs warning students, faculty and the public of detours, parking restrictions or potential delays on Campus in advance of the scheduled construction. Provide graphic detailed plans of proposed traffic plans and detours in advance for University Representative approval. The time of this advanced notice and locations for posting such signs shall be as directed by University's Representative. These conditions shall be incorporated into the Traffic control Plan required by this Section.
 - 3. Post and remove temporary "NO PARKING" signs as necessary to facilitate progress of the Work. Remove signs immediately when no-longer necessary to protect the public or facilitate the Work.

1.03 SUBMITTALS

- A. Submit the following for approval in accordance with Section 01340, "Shop Drawings, Product Data, and Samples".
 - 1. Traffic control plans prepared by a Traffic Engineer currently registered in the State of California. Traffic Engineer shall be familiar with and knowledgeable with applicable CALTRANS safety requirements. Plans shall show sequence of construction, provisions for providing access over excavations, barricading, signing, and temporary striping, all as necessary for maintaining pedestrian, bicycle, and vehicular traffic in the immediate Work area.

2. Submit Traffic Control Plans two (2) weeks prior to commencement of Work, and do not begin Work until plans are approved by University's Representative.

PART 2 - PRODUCTS

2.01 TRAFFIC CONTROL PLAN

- A. The traffic control plan shall show all proposed detours, flagmen, street closures, signing, description of construction activity, and schedule of construction phasing. The traffic control plan shall be consistent with Chapter 5 of the current State of California Traffic Manual; Section 7-1.08 "Public Convenience", Section 7-1.09 "Public Safety", Section 12 "Construction Area Traffic Control Devices of the State of California Standard Specification"; and with University's requirements.

2.02 CONSTRUCTION SIGNS

- A. Signs used by Contractor shall conform to standards in the Traffic Manual issued by the California Department of Public Works, dated 1971, including the latest supplements and addenda. All warning, regulatory, and construction signs shall be fully reflectorized. Traffic delineators shall be 18 inches high, rubber or plastic, and reflectorized.
- B. In addition to the basic number of signs required on the Contractor's approved traffic control plans, the Contractor shall stock on site for emergency use barricades; "TOWAWAY - NO STOPPING" signs; traffic cones, to delineate traffic lanes; two-high level warning flag units, each displaying three flags mounted at a height of 9 feet; two "RIGHT" OR "LEFT LANE CLOSED AHEAD" signs; two "DETOUR" signs, right or left arrow; and four "ROAD CONSTRUCTION AHEAD" signs, size 48-inch by 48-inch.

PART 3 - EXECUTION

3.01 GENERAL

- A. Take all feasible measures to maintain a normal flow of vehicular, bicycle and pedestrian traffic to prevent accidents and to protect the Work throughout the construction stages until completion of the Work. Make the necessary arrangements to reroute traffic and bicycle paths, provide and maintain barriers, cones, guards, barricades, and construction warning and regulatory signs. Provide access to all parking lots and fire access roads at all times. Take effective measures necessary to protect all other portions of the Work during construction and until completion. This includes providing and maintaining necessary barriers, barricade lights, guards, temporary crossovers and watchmen in accordance with the "manual of Warning Signs, Lights, and Devices for Use in Performance Work Upon Highways" by the State of California, Division of Transportation. Flashing warning light barricades are required on bike paths, sidewalks, roads, and any other critical areas that require nighttime protection.
- B. The Contractor shall be responsible for the placement of advisory signs to inform faculty, students and the general public of any street closure, detour, or construction affecting traffic or parking at least 10 days before the closure or before significant disturbances of normal traffic.
- C. Any phase of traffic control work that is not covered in this Section shall be performed in conformance with Work Area Traffic Control Handbook, most recent edition, as published by Building News, Inc.; the California Department of Transportation Standard Specifications, most recent edition; the Standard Plans, most recent edition; the Manual of Traffic Controls for Construction and Maintenance Work

Zones 1990 Edition; Section 7-1.08 "Public Convenience", Section 7-1.09 "Public Safety, Section 12 "Construction Area Traffic Control Devices" of the State of California Standard Specifications dated January, 1988, with City General Provision and County Requirements. Moreover, all traffic control work must meet the satisfaction of the University.

- D. In case of conflict between the referenced documents and or Contract Documents, the Contract Documents shall take precedence over and be used in lieu of such conflicting portions. In case of conflict among the referenced documents, the most stringent requirements shall take precedence and be used.
- E. In addition to the foregoing traffic control and safety measures, the Contractor shall undertake immediately any measures required by the University or University's Representative, as they deem necessary, to ensure the proper flow of traffic and the protection of the public and the safety of the workers. The Contractor shall maintain the ability to respond to calls from the police during non working hours to replace and provide additional traffic control or safety devices as shall be required by the police department.

3.02 BICYCLE AND PEDESTRIAN TRAFFIC

- A. The Contractor shall reroute all bicycle paths disrupted during construction onto a paved surface to allow safe passage of bicycle traffic. After completion of the Work in that area, the Contractor shall restore the bicycle path to its original condition, at no additional cost to the University.

3.03 ROAD CLOSURE CONDITIONS

- A. Keep all cross streets and dead-end streets where construction is in progress open and in passable condition for emergency vehicles at all times. The Contractor shall be liable for any damages which may result from failure to do so. All streets outside the construction area shall be kept open at all times. The closure of any street shall apply only to that portion of the street where construction is actually in progress.
- B. Where permitted by the University's Representative, the Contractor may partially close a street or an alley which intersects the streets and alleys in which Work is being performed. Closure will be permitted only through one-half of a street intersection at any given time. All cross streets shall have a minimum of one pedestrian over-crossing provided at each intersection.
- C. Driveways on Campus may be blocked where necessary during construction upon prior approval of the University's Representative and University. However, the duration of time that these driveways are not accessible shall be held to a minimum. After 4:30 p.m., access to driveways shall be restored, either by completion of compacted backfill, by completion of temporary resurfacing, or by steel plates of 1-inch minimum thickness placed over open trenches. If at all possible, only one driveway to a given facility shall be blocked at any given time. Access to the other driveways of the facility shall be maintained either by temporary surfacing or steel plate. University shall be informed, in writing, 72 hours in advance of the closing of any streets or driveways. Notification shall include an estimate of the time and duration of driveway closing.
- D. Bike paths, sidewalks, and roads shall not be blocked at any time or in any way. Trenching across bike paths, sidewalks or roads involves special instructions and approval of the construction procedure by the Environmental, Health and Safety Department at least 3 days prior to the Work actually being started.

3.04 REPAIR OR REPLACEMENT OF TRAFFIC SIGNAL CONDUIT

- A. If traffic signal conduit or other signal facilities are damaged by the Contractor, repairs shall be made immediately by a licensed traffic signal contractor, at the Contractor's expense.

3.05 ADDITIONAL TRAFFIC REQUIREMENTS

- A. The traffic requirements specified herein shall apply to all activities in the construction of this Project, including the placing of temporary resurfacing and the restoration of permanent resurfacing.
- B. All lanes for moving traffic shall be at least 10 feet-in width between delineators, with clearance of 2 feet from any vertical obstruction, and 5 feet from any open excavation. No more than one lane of any roadway construction shall be closed at any one time during construction. If two-way traffic is required and lanes are off-center of roadway, the opposing lanes shall be separated by pedestal-mounted flasher and reflector delineators.
- C. All trench and excavations shall be backfilled at the end of each working day unless approved specifically by the University's Representative. Place temporary asphalt concrete, 2-inches in thickness, to provide safe passage over trenches and/or excavations subject to public vehicular traffic and in accordance with Section 321216 and 321313, "Asphalt Concrete Paving". Permanent restoration of pavement shall be performed on a schedule approved by the University's Representative and shall be performed in accordance with Section 321216 and 321313.
- D. Trenches or excavations left open upon approval of the University's Representative shall be completely covered with steel traffic plates, secured with barricades, fences, and rails, and provided with flashers 10 feet on center. Signs indicating "OPEN TRENCH" shall be posted every 50 feet or as determined by the University's Representative. Comply with Section 01500.

3.06 DETOURS AND TRANSITIONS

- A. All detours and transitions to be installed shall be approved before any construction begins within a roadway or bike path.
- B. The Contractor shall be responsible for providing, installing, maintaining and removing traffic delineators and barricades in their proper locations, as well as traffic control signs on the approaches and throughout the Work area.
- C. Traffic delineators shall be used to delineate centerlines and lane lines and shall be spaced 25 feet apart throughout the transitions into and out of the detour and through the construction area.
- D. Barricades shall be used to protect the Work area as required by the California Department of Transportation, as applicable, and shall be spaced a maximum of 25 feet apart.
- E. Temporary striping shall be in conformance with Section 02510, "Asphalt Concrete Paving".

3.07 FLAG PERSONS

- A. Provide uniformed (wearing hard hat and reflective orange vest) flag persons to slow down and reroute traffic, as required by the traffic control plans. Flag persons shall be on duty during the entire period the roadway is under construction. Flag persons shall be provided at no additional cost to the University.

3.08 EXISTING SIGNS

- A. The protection and maintenance of existing signs and the removal, protection, storage, and resetting of University traffic signs that are affected by the Work shall be the responsibility of the Contractor, as approved by the University's Representative. Damaged or lost signs shall be replaced and paid for by the Contractor. Traffic signs and traffic control facilities existing within the limits of the Project shall not be moved except as necessary to prevent them from being damaged by construction operations.
- B. Traffic signs and traffic control facilities existing on the Project site that are necessary for the control of traffic during the Work, such as a stop sign, shall be maintained in place in an upright position and located so as to properly control traffic. Whenever it is necessary to remove them from their permanent location due to construction Work, they shall be placed in a temporary location to properly control traffic and shall be reinstalled in their permanent location at the earliest possible time.
- C. All traffic signs and traffic control facilities existing on the Project site that are not necessary for control of traffic during construction which will be needed after completion of the Project shall be removed and stockpiled and reinstalled in their permanent location at the earliest possible time.

3.09 ELECTRONIC TRAFFIC LOOPS

- A. The Contractor is responsible for identifying all traffic loops which interfere with operations. Unless otherwise specified or shown, immediately correct and replace all existing traffic loop equipment and control systems which are damaged as a result of the Work. The Work shall be performed by a licensed traffic control contractor approved by the University's Representative, at no expense to the University.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Source Limitations: Provide products of the same generic kind, from a single source, for each unit of Work.
- B. UL Label: Materials and equipment, for which Underwriters' Laboratories, Inc. standards have been established and their label service is available, shall bear the appropriate UL label.

1.02 TRANSPORTATION AND HANDLING

- A. Deliver manufactured products in their original unbroken containers or bundles, clearly labeled with manufacturer's name, brand, and grade seal or model number.
- B. Handle materials and equipment in a manner to avoid damage to products and their finishes.
- C. Promptly remove damaged or defective products from the Project site and replace at no increase in Contract Sum.
- D. Schedule delivery to minimize long-term storage at the Project site and to prevent overcrowding of construction spaces.
- E. 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.
- F. Inspect products upon delivery to ensure compliance with the Contract Documents.

1.03 STORAGE AND PROTECTION

- A. Store manufactured products in accordance with manufacturers' instructions and with seals and labels intact and legible.
- B. Maintain temperature and humidity in accordance with manufacturers' recommendations.
- C. Store materials and equipment above ground on blocking or skids to prevent soiling, staining, and damage.
- D. Cover products which are subject to damage by the elements with impervious protective sheet coverings. Provide adequate ventilation to prevent condensation.
- E. Store sand, rock, or aggregate material in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- F. Arrange storage to allow adequate inspection.

- G. Periodically inspect stored products to assure that products are maintained under specified conditions and are free from damage and deterioration.
- H. Protection and Maintenance After Installation:
 - 1. Prevent damage to materials and equipment.
 - 2. Use whatever protective materials or methods are necessary to prevent damage to installed products from traffic, construction operations, and weather. Remove protection when no longer required.
 - 3. Maintain temperature and humidity conditions in interior spaces for the Work in accordance with manufacturers' instructions for the materials and equipment being protected.
 - 4. Maintain installed equipment in accordance with manufacturer's recommendations.
- I. Store heavy materials in a manner that will not endanger the supporting construction.

1.04 MANUFACTURERS' TRADE MARKS, NAMES, AND NAMEPLATES

- A. The University's Representative reserves the right to review and request the removal or redesign of manufacturers' trade marks and names on items of materials and equipment which will be exposed to view in the completed Work. Such removal or redesign shall be at no increase in Contract Sum.
- B. Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed Project.
 - 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
 - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-oriented or power-operated equipment. Locate the nameplate on an easily accessible surface which is inconspicuous in occupied spaces. In unoccupied or storage spaces, nameplates shall be readily visible. The nameplate shall contain the following information and other essential operating data:
 - a. Name of manufacturer.
 - b. Model number.
 - c. Serial number.
 - d. Capacity.
 - e. Speed.
 - f. Ratings.

1.05 UNIVERSITY FURNISHED ITEMS

- A. Provide the same handling, storage, and protection for University furnished items as is specified for Contractor furnished material and equipment.
- B. University furnished items (if any) are specified in Section 01010 "Summary of Work" and in applicable individual Specifications sections.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All material and equipment incorporated in the Work shall be:
 - 1. New.
 - 2. In condition acceptable to the University's Representative.
 - 3. Suitable for intended use.
 - 4. Kept clean, dry, and undamaged.
 - 5. Free of asbestos or other hazardous materials.
- B. It is the intent of the Contract Documents that there shall be no materials or products which contain asbestos, in any state, included in the Work. If during construction the Contractor discovers that a new material or product contains asbestos it shall be removed from the Work and University's Representative will select an alternate material or product. Contractor shall be responsible for all costs if it can be demonstrated that Contractor was aware of the asbestos prior to installation.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

- A. It is a general requirement of the Contract Documents that materials and products be installed in compliance with manufacturer's instructions and recommendations unless specifically indicated otherwise, and that each item be securely anchored, accurately located, and aligned with other Work.
 - 1. When Work is specified to comply with manufacturers' instructions, submit copies as specified in Section 01340, distribute copies to persons involved, and maintain one set in field office. Should a conflict exist between Specifications and instructions, consult with University's Representative.
 - 2. Anchor nonstructural building elements, fixtures, and equipment to prevent damage or hazard from seismic forces. Comply with Title 24.
- B. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- C. Perform Work by persons qualified to produce workmanship of specified quality.
- D. Contractor, Installers, and suppliers shall exchange Material Safety Data Sheets (MSDS) with each other and, if requested, shall submit them to the University's Representative.

END OF SECTION

SECTION 01620

ANCHORS AND FASTENERS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies requirements for anchors and fasteners, including power or powder-activated tools, for permanent and temporary fastening of materials and products.

1.02 REFERENCES

- A. California Code of Regulations, Title 8.
- B. California Occupational Safety and Health Administration (Cal/OSHA) requirements.
- C. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) requirements for low velocity shot pin installation.
- D. American National Standards Institute (ANSI) A10.3.

1.03 SUBMITTALS

- A. Submit manufacturer's Product Data for expansion anchors, drilled in fasteners, and powder-activated tools and fasteners.
 - 1. Submit load calculations and minimum spacing for each specific use to substantiate selection of each type of powder-activated fastener. Calculations shall be prepared and signed by a structural engineer currently registered in California.
- B. Submit certification indicating training of designated and certified operators using powder-activated tools.
- C. Submit ICBO evaluation reports when requested by University's Representative.

1.04 QUALITY ASSURANCE

- A. Operators of powder-activated tools shall be trained and certified in the use of the specific tool used.
- B. Comply with the applicable requirements of:
 - 1. California Code of Regulations, Title 8.
 - 2. Cal/OSHA.
 - 3. SMACNA.

1.05 APPROVAL REQUIRED

- A. Obtain approval from University's Representative prior to the use of powder-activated tools.

1.06 PROJECT CONDITIONS

- A. Post and continuously maintain warning signs and observe applicable safety regulations whenever powder-activated tools are in use.

PART 2 - PRODUCTS

2.01 NON-POWDER-ACTIVATED FASTENERS

- A. For concrete or masonry use only two piece expansion anchors or drilled in fasteners of the types and manufacturers indicated on Drawings or as specified in the Specifications.
 - 1. Concrete nails are not permitted.

2.02 LOW-VELOCITY POWDER-ACTIVATED FASTENERS (PAF)

- A. Only low velocity fasteners are permitted and only for the conditions specified in this Section.
- B. The use of medium and high velocity powder-activated fasteners as defined by ANSI A10.3 is prohibited.
- C. Fastener Requirements:
 - 1. Minimum Shank Size: 0.143" diameter.
 - 2. Minimum Penetration: 1.25".
 - 3. Minimum Rated Tensile Strength: 310 lbs.
 - 4. Minimum Rated Shear Strength: 420 lbs.
 - 5. Maximum Weight Suspended From Each Connection: 200 lbs.
 - 6. Minimum Concrete Strength Where Powder-Activated Fasteners May be Used: 3000 psi.
- D. Seismic bracing anchorage shall be accomplished using only two piece expansion anchors. PAF are not permitted for anchoring seismic bracing wires for suspended ceiling systems.

PART 3 - EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Verify conditions prior to use of tools. Correct deficiencies before proceeding. Verify that safety procedures are in place.
- B. Prepare surfaces to receive fasteners. Clean area and remove materials or equipment that will hinder the proper use of tools.

3.02 INSTALLATION OF NON-POWDER-ACTIVATED FASTENERS

- A. Install in strict compliance with manufacturer's recommendations and current ICBO evaluation reports where applicable.

- B. Door Frames: Fasten with two piece expansion anchors. Powder-activated fasteners are not permitted.

3.03 INSTALLATION OF POWDER-ACTIVATED FASTENERS (PAF)

- A. Install in strict compliance with manufacturer's recommendations and current ICBO evaluation reports where applicable.
- B. Powder-activated fasteners may be used only for the following applications, with limitations indicated, upon approval of the University's Representative:
1. Anchoring non-structural metal stud tracks to concrete slabs for interior non-structural walls.
 - a. Concrete slab depth for the above application shall be not less than 3 times the PAF penetration requirement. Steel washers, 7/8" minimum diameter (or square) by 5/64" thick, are required at each fastener.
 - b. PAF are not permitted on masonry or concrete curbs, nor within 6" of the edge of slabs or slab construction joints.
 2. Anchoring non-structural or non-load bearing 2x wood sills and 3/4" plywood to concrete slabs.
 - a. Concrete slab depth for the above application shall be not less than 3 times the PAF penetration requirement. Steel washers, 1-7/16" minimum diameter or 1-3/8" square, by 5/64" thick, are required at each fastener.
 - b. PAF are not permitted on masonry or concrete curbs, nor within 6" of the edge of slabs or slab construction joints.
 3. Anchoring 2x wood, or 3/4" plywood members to structural steel members:
 - a. Provide steel washers, 7/8" minimum diameter (or square) by 5/64" thick.
 - b. This type attachment is allowed only to flat surfaces. Applications to curved, angled, or sloped steel surfaces are not permitted, except at angled or sloped surfaces powder-activated fasteners may be used if the fastener is perpendicular to the steel surface.
 4. Fastening of wood or metal furring strips to concrete walls.
 5. Fastening to concrete of the following: plaster accessories, flashing, and similar items with negligible loading.
 6. Temporary fastening of concrete form supports to existing concrete.
 7. Installation of incidental straps and wires used to suspend the following:
 - a. Metal ductwork of 25 pounds per linear foot or less.
 - b. Piping of 1" diameter or less.
 - c. Electrical conduit of 2" diameter or less.
 8. Installation of suspended ceiling hanger wires, in compliance with the following:
 - a. Concrete slab thickness shall not be less than 3 times the required fastener penetration.

- b. Total ceiling dead load shall not exceed 4 lbs. per square foot.
- c. Testing by University's testing lab shall be performed as specified in this Section.
- 9. Fastening to hold temporary members in place while other permanent anchoring devices are installed; for example, lower and upper tracks for metal stud partitions between concrete slabs.
- 10. PAF applications not included in this Section shall require pre-approval from the University's Representative.

3.04 FIELD QUALITY CONTROL

- A. The University's testing laboratory will test powder driven fasteners as follows:
 - 1. One out of every ten installed hanger wire support assemblies will be tested to verify its capacity to resist two times the design load.
 - 2. Additional testing as required by University's Representative or University Inspector.
 - 3. Failure of the fastener, clip, or suspension may require testing of all installed assemblies.
 - 4. Items or assemblies that fail shall be replaced by Contractor at no cost to the University.

END OF SECTION

SECTION 01630

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1. GENERAL

1.01 GENERAL PROVISIONS REGARDING SPECIFICATION OF PRODUCTS, MATERIAL OR EQUIPMENT BY BRAND OR TRADE NAME.

- A. Products, material or equipment specified by both brand or trade name and model number are approved for use, provided that Contractor complies with all Contract requirements. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment can be used without modification, to meet the requirements of the plans and specifications; Contractor shall, at its sole cost, modify such products, material, or equipment so that they comply with all requirements of the plans and specifications.
- B. The first-named product, material or equipment specified by brand or trade name and model number is the basis for the Project design and the use of any item other than the first-named one may require modifications of that design. If Contractor uses any product, material or equipment other than the first-named one, Contractor shall, at its sole cost:
 - 1. Make all revisions and modifications to the design and construction of the Work necessitated by the use the product, material or equipment.
 - 2. Be responsible for all costs of any changes resulting from the use of the product, material or equipment including without limitation, costs or changes which affect other parts of the Work, the work of Separate Contractors, or any other property or operations of the University.
- C. When a product, material or equipment specified by brand or trade name is followed by the words "or equal," a substitution may be permitted if the substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and if the substitution complies with all other requirements of the plans and specifications.
- D. When catalog numbers and specific brands or trade names not followed by the designation "or equal" are used in conjunction with a product, material or equipment required by the specifications, substitutions will not be allowed and the named product, material or equipment must be used.
- E. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment is available; Contractor should confirm, prior to submitting its Bid, the availability of any product, material or equipment specified by brand or trade name and model number.

1.02 SPECIAL REQUIREMENTS FOR PRODUCTS, MATERIAL OR EQUIPMENT, OTHER THAN THE FIRST-NAMED PRODUCT, MATERIAL OR EQUIPMENT, SPECIFIED BY BOTH BRAND OR TRADE NAME AND MODEL NUMBER.

- A. In addition to complying with all other submittal requirements of the Contract, submit within 70 days after the date of commencement specified in the Notice to Proceed, for review and approval by the University's Representative, Contractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriate licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the product, material or equipment. If no revisions or modifications are necessary, submit within 70 days after the date of commencement specified in the Notice to Proceed, a written representation that no revisions or modifications to the design

or construction of the Work are necessitated by the use of the product, material or equipment. Contractor shall utilize the first-named product, material or equipment if Contractor fails to make the appropriate required submittal pursuant to this paragraph within the 70-day period.

- B. A product, material or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number may be used if no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. If such revisions or modifications are necessary, the product, material or equipment may be used only if the revisions or modifications are approved in writing by the University's Representative. Contractor has the burden of demonstrating, through the procedures specified herein, that any such revisions or modifications will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, Contractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility or appearance of the Project or any portion of the Project.

1.03 SPECIAL REQUIREMENTS FOR SUBSTITUTIONS.

- A. In addition to complying with all other submittal requirements of the Contract, submit written data demonstrating that the proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and otherwise complies with all requirements of the plans and specifications, including:
1. Complete technical data including drawings, performance specifications, samples, and test reports of the article proposed for substitution.
 2. Statement by Contractor that the proposed substitution is in full compliance with the requirements of the Contract Documents and Applicable Code Requirements.
 3. List of Subcontractors, if any, that may be affected by the substitution.
 4. Contractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriately licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the substitution. If no revisions or modifications are necessary, submit a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment.
- B. At the request of and within the timeframes specified by the University's Representative:
1. Submit samples as deemed necessary by the University's Representative to evaluate the proposed substitution.
 2. Submit proposed substitution to tests deemed necessary by the University's Representative to evaluate the proposed substitution. Such tests shall be made by an independent Testing Laboratory and at the sole expense of Contractor, after review and approval of the test procedures by University's Representative. If re-testing is deemed necessary by the University's Representative to evaluate the proposed substitution, such re-testing shall be made by an independent Testing Laboratory at the sole expense of the Contractor.
 3. Provide any additional information deemed necessary by the University's Representative to evaluate the proposed substitution.

- C. If University's Representative, in reviewing a proposed substitution, requires revisions or corrections to be made to previously accepted shop drawings and supplemental supporting data to be resubmitted, Contractor shall do so within the time period specified by the University's Representative. A proposed substitution may be rejected if Contractor fails to submit such revisions, corrections, or supplemental supporting data within the specified time period.
- D. Except for products, material or equipment designated in the Bidding Documents for evaluation of substitutions prior to award, requests for substitution, including the data required by Paragraph 1.03 A, must be submitted to the University's Representative not later than 35 days after the date of commencement specified in the Notice to Proceed. No requests for substitutions of products, material or equipment subject to the 35-day deadline shall be considered unless the request and supporting data is submitted on or before the deadline, except those deemed, in University's Representative's sole opinion, to be necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.
- E. If a product, material or equipment is designated in the Bidding Documents for evaluation of substitutions prior to award, then a request for substitution of the product, material or equipment, including the data required by Paragraph 1.3.A, must be submitted by the deadline specified in the Bidding Documents. Because of time constraints, only one submittal will be allowed for each such substitution request. Requests for substitutions of products, material or equipment designated for evaluation prior to award may not be made after the deadline specified in the Bidding Documents, and such requests shall not be considered unless the request and supporting data is submitted on or before the deadline specified in the Bidding Documents. Notwithstanding the foregoing, the University may consider, after award of the Contract, requests for substitution of a product, material or equipment designated for evaluation prior to award where, in University's Representative's sole opinion, a substitution is necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.
- F. 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 2 submissions of supporting data are required, the cost of reviewing the additional supporting data shall be at Contractor's expense.
- G. Contractor has the burden of demonstrating, through the procedures specified herein, that its proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and complies with all other requirements of the plans and specifications. If revisions or modifications to the design or construction of the work are necessitated by the use of the substitution, Contractor also has the burden of demonstrating, through the procedures specified herein, that the use of the substitution will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project.
- H. The University's Representative may refuse to approve any requested substitution where, in the reasonable opinion of the University's Representative, Contractor has failed to demonstrate, through the procedures specified herein, that the proposed substitution is equal to, or superior to, the first-named product, material or equipment, in quality, utility and appearance and that the proposed substitution complies with all other requirements of the plans and specifications.
- I. University's Representative may reject any substitution not proposed in the manner and within the time limits prescribed herein.

- J. Substitutions are not allowed unless approved in writing by the University's Representative. Any such approval shall not relieve Contractor from the requirements of the Contract Documents.
- K. The 10-day and 15-day submittal periods do not excuse Contractor from completing the Work within the Contract Time or excuse Contractor from paying liquidated damages if Final Completion is delayed.
- L. If revisions or modifications to the design or construction of the Work are necessitated by the use of a substitution, the substitution may be used only if the revisions and modifications are approved in writing by the University's Representative. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, Contractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility and appearance of the Project or any portion of the Project.
- M. If a substitution request is finally rejected by the University Representative, Contractor shall furnish and install:
 - 1. The first-named product, material, or equipment; or
 - 2. A product, material, or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number, provided Contractor complies with the submittal requirements (including deadlines) of specification section 01630-1.02

END OF SECTION

MATERIAL/PRODUCT
SUBSTITUTION REQUEST

To: _____

Project Name: _____

Project No. FM _____ L/ _____

We hereby submit for your consideration the following item instead of the specified item:

1. _____ Section No. _____ Paragraph No. _____

2. _____ Specified Item: _____

3. Proposed Substitution (Mfg., Type, Model, etc.): _____

4. Does substitution offer University a cost credit (including costs for changes by other trades? Yes___ No___ How much? _____

5. Does this substitution offer earlier delivery or less construction time?
Yes___ No___ How much, and why? _____

6. How does this substitution affect any dimensions, layout, or details of other trades as shown on the Drawings?__

7. What are the specific differences between this substitution and the specified item?

8. Attach the following items as applicable (Check if attached):

___ Manufacturer's technical data.

___ Laboratory test or performance results.

___ Drawings and wiring diagrams of the proposed product.

___ Drawings and description of changes required by other trades.

___ Samples.

___ Manufacturer's guaranty and maintenance instructions.

___ 1/4 inch scale layout drawings of equipment and equipment rooms.

Undersigned agrees to pay for all added reviews, design, tests, and changes in the Contract Documents or construction as a result of the acceptance of this substitution, at no cost to University.

Submitted by (Firm) _____

Signature _____ Date _____

Typed Name _____

SECTION 01700

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Project closeout is the term used to describe certain collective Project requirements, indicating completion of the Work that are to be fulfilled near the end of the Contract time in preparation for final payment to the Contractor.
 - 1. Specific requirements for individual units of Work are included in the appropriate Sections in Divisions 2 through 16.
- B. Comply with additional requirements specified in other Division-1 Sections which also must be completed prior to Final Completion.
- C. Comply with requirements included in the General and Supplementary Conditions.

1.02 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Complete the following before requesting the University's Representative's inspection for Certification of Substantial Completion, either for the entire Work or for portions of the Work. List known exceptions in the request.
 - 1. Advise University of pending insurance change-over requirements.
 - 2. Assign guarantees, warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents to University.
 - 3. Submit and obtain acceptance of record documents, operating and maintenance manuals, and similar final record information.
 - 4. Deliver tools, spare parts, extra stock of material and similar physical items to University. Refer to individual Specifications Sections for required quantities of spare parts, extra stock, maintenance tools and devices, keys, and similar units.
 - 5. Arrange for the University to make the final change-over of permanent locks. Return keys assigned to the Contractor to University's Lock Shop. Advise University's personnel of the change-over in security provisions.
 - 6. Complete start-up testing of systems, and instruction of University's operating and maintenance personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.
 - 7. Discontinue or change over and remove temporary facilities and services from the Project site, along with construction tools and facilities and similar elements.
 - 8. Complete final cleaning requirements, including touch-up painting, repair and restoration of marred surfaces and finishes.

9. Fulfill the requirements for Substantial Completion in the Conditions of the Contract.

1.03 PREREQUISITES TO FINAL COMPLETION

- A. When Contractor considers Work has reached Final Completion, submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for University's Representative's inspection.
- B. Complete the following before requesting final inspection and final payment. List known exceptions, if any, in the request.
 1. Submit the final payment request with final unconditional releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit consent of surety.
 4. Submit a certified copy of University's Representative's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by University's Representative.
 5. Submit final meter readings for utilities, and similar data as of the date of Substantial Completion, or when University took possession of and responsibility for corresponding elements of the Work.
 6. Submit a final liquidated damages settlement statement.
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 8. Obtain and submit releases enabling the University the full, unrestricted use of the Work.
 9. Fulfill the requirements for Final Completion in the Conditions of the Contract.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 OPERATION AND MAINTENANCE INSTRUCTION PROCEDURES

- A. General Operating and Maintenance Instructions: Arrange for each installer of operating equipment and other Work that requires regular or continuing maintenance, to meet at the Project site with University's personnel to provide necessary basic instruction in the proper operation and maintenance of the entire Work as specified in Section 01730, "Operating and Maintenance Data".

3.02 FINAL CLEANING

- A. General: Special cleaning requirements for specific units of Work are included in the appropriate sections of Divisions 2 through 16. General cleaning during the regular progress of the Work is required by the General Conditions and is included under Section 01500 - "Construction Facilities and Temporary Controls".
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a normal, commercial building cleaning and maintenance program which shall permit immediate occupancy for intended use. Comply with the manufacturer's instructions for operations.
- C. Complete the following cleaning operations before requesting University's Representative's inspection for certification of Substantial Completion.
 - 1. Remove labels which are not required as permanent labels.
 - 2. Clean transparent materials, including mirrors and glass in doors and windows, to a polished condition. Remove glazing compound, paint, and other substances which are noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - 3. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of dust, grease, stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces, shampoo where required.
 - 4. Repair, patch, and touch up marred surfaces to specified finish or to match adjacent surfaces.
 - 5. Wipe clean surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps. Replace air conditioning filters.
 - 6. Clean the Project site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
 - 7. At existing pavements used during construction, clean up and remove vehicle oil and fluids.
- D. Maintain cleaning until Project, or portion thereof, is occupied by the University.
- E. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects and other pests.
 - 1. Provide written certification from exterminator that inspection has been conducted and that no evidence of rodents, insects, and pests are evident or have been removed.
- F. Removal of Protection: Except as otherwise indicated or requested by University's Representative, remove temporary protection devices and facilities which were installed during the course of the Work to protect previously completed Work during the remainder of the construction period.
- G. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on University's property. Do

not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 AS-BUILT DOCUMENTS

- A. As-Built Documents, as described in the Conditions of the Contract, shall comply with the requirements for Record Documents specified in this Section.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store Project record documents and samples in the Contractor's field office separate from documents used for construction.
- B. Maintain record documents in order and in a clean, dry, legible condition.
- C. Do not use record documents for construction.
- D. Record documents must be kept current. University's Representative will not approve applications for payment until Contractor can show that record documents are up to date.
- E. The Contractor is responsible for insuring that record documents of all entities, firms, and installers are accurate and current.

1.03 RECORD DOCUMENTS STATUS FORM

- A. University's Representative will supply a "Record Documents Status Form" for monitoring status of record documents. Contractor shall complete the form prior to submitting each month's Application for Payment.
- B. Each month, meet with University's inspector and review status of record documents. Inspector will sign form to recommend approval if documents are kept current.

PART 2 - PRODUCTS

2.01 RECORD DOCUMENTS

- A. Specific requirements for record documents may also be indicated in the individual technical sections of the Specifications. Where conflicts occur between the requirements of this Section and other sections, comply with the most stringent.
- B. Before Substantial Completion furnish the record documents, signed and dated by the Contractor, to University's Representative, and comply with the requirements for each type of record document specified herein.
- C. Record Drawings: Maintain a record set of blue or black line white-prints of Contract Drawings and shop drawings in a clean, undamaged condition. Record the following kinds of information on the record drawings:
 - 1. Locations of Work buried under or outside the building, such as plumbing and electrical lines and conduits. Provide horizontal and vertical dimensions from fixed points, accurate to centerline

within one inch. Clearly identify each item by accurate note such as "Cast Iron Drain", "Copper Water", etc. Indicate location by symbol or note, the vertical location of the item (under slab, in ceiling plenum, exposed, etc.). Include all piping sizes on plan view drawings.

2. Actual numbering of each electrical circuit.
3. Locations of significant Work concealed inside the building, the locations of which are changed by the Contractor from those shown on the Drawings.
4. Locations of items, not necessarily concealed, which vary from the locations shown on the Drawings.
5. Changes in the Project as a result of change orders, field orders, and letters of instruction during construction, with such changes annotated and cross referenced, and clouded or otherwise distinguished, and with the identification number of each change order, field order, or letter of instruction indicated.
6. The following requirements for record drawings are in addition to those previously specified:
 - a. They shall be prepared carefully and neatly in an accurate and legible manner by a competent drafter, familiar with the trade involved, using methods acceptable to University's Representative.
 - b. They shall be kept continually up to date during the entire progress of the Work and made available to University's Representative at any time.
 - c. Additional drawings shall be provided as required to properly describe changes.
 - d. Record changes in size, location, and other features of installation shown on the Contract Drawings.
 - e. Record all locations of underground Work, points of connection, valves, manholes, catch basins, capped stubouts, invert elevations, etc.
 - f. Record sufficient information such that Work concealed in the building may be located with reasonable ease and accuracy. This may be accomplished by dimensioning or by stating the relationship to the spaces in the building near which the Work was installed. University's Representative's decision on what constitutes sufficient information will be final.
 - g. Record the following survey data required by Section 01050 "Field Engineering": Benchmarks, control points, underground utilities, floor elevations, and deviations from requirements of the Contract Documents.
 - h. In addition, submit letter to University's Representative certifying that record drawings are accurate, comply with requirements specified, and have been completed.
 - i. Prior to Substantial Completion submit record drawings to University's Representative in one neat, properly organized set. University's Representative will have the Engineer transcribe the record drawing information to original tracings, which will then be printed on mylar film for University's permanent record. Contractor's record drawings will also be turned over to University.

- j. Prior to the above submission to University's Representative, photocopy record drawings of underground Work only, and keep on file at Project site until University has received final record drawings from Engineer.
- D. Shop Drawings: Provide reproducible record drawings, made from final Shop Drawings which have been updated to show actual conditions, for Work specified in the individual sections of the Specifications.
- E. Construction Documents Binder: Maintain one complete copy of the Construction Documents bound volume, including addenda, and the following items, neatly and permanently marked to show variations in the actual Work.
 - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed, indicating substitutions, selection of options, etc.
 - 2. Changes made by Addenda, Change Order, or Field Order, and clarifications and interpretations made by Letter of Instruction.
- F. Large-Scale Layout Drawings: Certain sections of the Specifications may require the preparation of large-scale, detailed layout drawings of a portion of the Work. These layout drawings are not shop drawings as defined by the GENERAL CONDITIONS, but, together with shop drawings or layout drawings of all other affected Specification sections, are used to check, coordinate, and integrate the Work of the various sections.
 - 1. Maintain and submit these layout drawings as part of the Project record documents.
 - 2. Requirements for layout drawings are specified in Section 01340, "Shop Drawings, Product Data, and Samples".
- G. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations.
- H. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with University's Representative and University's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted for record purposes. Comply with delivery to University's Sample storage area.
- I. Record documents are subject to the review and acceptance by University's Representative.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01730

OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 GENERAL

- A. Compile Product Data and related information appropriate for University's maintenance and operation of products provided under this Contract.
- B. Prepare operating and maintenance data as specified herein and as specified in individual Sections.
- C. Instruct the University's personnel in the maintenance and operation of equipment and systems.
- D. Acceptable Operating and Maintenance Data shall be delivered to the University's Representative prior to the Project being 90% complete. Progress payments for Work in excess of 90% completion will not be made by the University until the specified acceptable Operation and Maintenance Data has been delivered to the University's Representative.

1.02 FORM OF SUBMITTAL

- A. Prepare data in the form of an instructional manual for use by the University's personnel.
 - 1. Format:
 - a. Size: 8-1/2 inches by 11 inches.
 - b. Paper: 20-pound, minimum, white, for typed pages.
 - c. Test: Manufacturers' printed or neatly typewritten data.
 - 2. Drawings:
 - a. Provide reinforced punched binder tab which is bound with the text.
 - b. Fold larger drawings to the size of the text pages.
 - 3. Provide fly-leaf for each separate product or each piece of operating equipment.
 - a. Provide typed description of products and major component parts of equipment.
 - b. Provide indexed tabs.
 - 4. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS." List:
 - a. Title of Projects
 - b. Identity of general subject matter covered in the volume.
 - 5. Binder:
 - a. Commercial quality three-ring binders with durable and cleanable plastic covers.
 - b. When multiple binders are used, correlate the data into related groups.

6. Manufacturer's Information: Provide original copies of manufacturer's information manuals, drawings, and operating and maintenance instructions. Photo copied information is not acceptable.

1.03 CONTENT OF MANUAL

- A. Table of Contents: Include in each volume, neatly typewritten.
 1. Identify Contractor, name of responsible principal, address, and phone number.
 2. List each product included, indexed to the content of the volume.
 3. List, with each product, the name, address, and telephone number of:
 - a. Supplier and Installer.
 - b. Maintenance firm, as appropriate.
 - c. Identify area of responsibility of each of the previously mentioned parties.
 - d. Nearest source of supply for parts and replacement.
 4. Identify each product by product name and other identifying symbols as set forth in the Contract Documents.
- B. Product Data:
 1. Include only those sheets which are pertinent to the specific product.
 2. Annotate each sheet to:
 - a. Clearly identify the specific product or part installed.
 - b. Clearly identify the data applicable to the installation.
 - c. Delete references to inapplicable information.
- C. Drawings:
 1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
 2. Coordinate drawings with information in Project record documents to assure correct illustration of completed installation.
 3. Do not use Project record documents as maintenance drawings.
- D. Written Text: As required to supplement Product Data for the particular installation.
 1. Organize in a consistent format under separate headings for different procedures.
 2. Provide a logical sequence of instructions for each procedure.
- E. Copy of each warranty, bond, and service contract issued:
 1. Provide information sheet for the University's personnel, giving:
 - a. Proper procedures in the event of failure.
 - b. Circumstances which might affect the validity of warranties or bonds.

1.04 MANUAL FOR MATERIALS AND FINISHES

- A. Submit eight (8) copies of complete manual in final form.

- B. Content, for architectural products, applied materials and finishes:
 - 1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, composition.
 - b. Color and texture designations.
 - c. Information required for reordering special manufactured products.
 - 2. Instructions for care and maintenance.
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods which are detrimental to product.
 - c. Recommended schedule for cleaning and maintenance.
- C. Content, for moisture-protection and weather-exposed products:
 - 1. Manufacturer's data, giving full information on products.
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Details of installation.
 - 2. Instructions for inspection, maintenance, and repair.
- D. Additional requirements for maintenance data: Respective sections of Specifications.

1.05 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit eight (8) copies of the complete manual in its final form.
- B. Content, for each unit of mechanical equipment and each mechanical system, shall be as follows:
 - 1. Description of unit or system, and component parts:
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial numbers of replaceable parts.
 - 2. Operating Procedures:
 - a. Start-up, break-in, and normal operating instructions.
 - b. Regulation, control, stopping, shut-down, and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 - 3. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting."
 - c. Disassembly, repair, and reassembly.
 - d. Alignment, adjusting, and checking.
 - 4. Servicing and lubrication schedule, with list of lubricants required.
 - 5. Manufacturer's printed operating and maintenance instructions.
 - 6. Description of sequence of operation by control manufacturer.
 - 6. Original manufacturer's parts list, illustrations, current prices, recommended quantities to be maintained in storage, assembly drawings, and diagrams required for maintenance.
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.

8. As-installed control diagrams by controls manufacturer.
 9. Contractor's and Installers' coordination drawings and record document color coded piping diagrams.
 10. Charts of valve tag numbers, with the location and function of each valve.
 11. Other data as required in the various Specifications sections.
- C. Content, for each electrical and electronic system, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial numbers of replaceable parts.
 2. Circuit directories of panelboards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 3. Record document color-coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting."
 - c. Disassembly, repair, and reassembly.
 - d. Adjustment and checking.
 6. Manufacturer's printed operating and maintenance instructions.
 7. Original manufacturer's parts list, illustrations, current prices, recommended quantities to be maintained in storage, assembly drawings, and diagrams required for maintenance.
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
 8. Other data as required in the individual Specifications sections.
- D. Prepare and include additional data as may be required for instructions of the University's personnel.
- E. Include additional requirements for operating and maintenance data as specified in the individual Specifications sections.
- F. Provide complete information for products specified in the individual Specifications sections.

1.06 SUBMITTAL REQUIREMENTS

- A. Submit two (2) copies of the preliminary draft of proposed formats and outlines of contents prior to preparation of data. University's Representative will review the draft and return one (1) copy with comments.

- B. Submit two (2) copies of the completed data in final form prior to the Project being 90% complete or earlier where necessary to use them in training of the University's personnel. A copy will be returned with comments after review. No final inspection will be made until the required data have been submitted and found to be satisfactory.
- C. Submit three (3) copies of approved data in final form ten (10) days before inspection to establish Substantial Completion.

1.07 INSTRUCTION OF UNIVERSITY'S PERSONNEL

- A. Work requiring instruction of University's personnel is specified in the individual Specification sections.
- B. Schedule the instructional meeting or meetings within two (2) weeks after instructional manuals have been submitted, reviewed, and accepted by University's Representative.
- C. Before Owner takes Beneficial Occupancy or before Substantial Completion (whichever is earlier), fully qualified representatives of the manufacturers shall fully instruct University's designated operating and maintenance personnel in the operating, adjustment, and maintenance of all equipment and systems.
- D. Basis of Instruction: Operating and maintenance manual. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01740

GUARANTEES, BONDS, AND MAINTENANCE CONTRACTS

PART 1 - GENERAL

1.01 GENERAL

- A. Guarantees from installers and suppliers shall not limit the Contractor's warranties and guarantees to the University. Whenever possible, the Contractor shall cause warranties of installers and suppliers to be made directly to the University. If such warranties are made to the Contractor, the Contractor shall assign such warranties to the University prior to final payment.

1.02 FORM OF GUARANTEE

- A. Submit written guarantees in the form contained at the end of this Section.

1.03 BEGINNING DATE

- A. Unless specified otherwise in the Contract Documents, the date of beginning of a guarantee, bond, or service or maintenance contract shall be the same as the beginning date specified in Article 12 of the Conditions of the Contract for the "Guarantee to Repair Period".

1.04 SUBMITTAL REQUIREMENTS

- A. Assemble required guarantees, bonds, and service and maintenance contracts.
- B. Number of original signed copies required: Two (2) each. Provide eight (8) additional copies (original signature not necessary) where required for maintenance manuals.
- C. Table of Contents: Neatly typed and in orderly sequence. Provide complete information for each item as follows:
 - 1. Product or Work item.
 - 2. Firm name, address, and telephone number; and name of principal.
 - 3. Scope.
 - 4. Date of beginning of guarantee, bond, or service and maintenance contract.
 - 5. Duration of guarantee, bond, or service and maintenance contract.
 - 6. Provide information for University's personnel:
 - a. Proper procedure in case of failure.
 - b. Circumstances which might affect the validity of guarantee or bond.
 - 7. Contractor's name, address, and telephone number; and name of principal.

1.05 FORM OF SUBMITTALS

- A. Prepare in duplicate packets.
- B. Format:
 - 1. Size 8-1/2 inch x 11 inch sheets punched for 3 ring binder. Fold larger sheets to fit into binders.

2. Identify each packet on the cover with typed or printed title, "GUARANTEES AND BONDS", and the following:
 - a. Title of Project.
 - b. Name of Contractor.
 - C. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers. Verify color.
- 1.06 TIME OF SUBMITTALS
- A. Submit early enough that submittals may be approved by University's Representative prior to Substantial Completion. A minimum of thirty (30) days prior to Substantial Completion is required. Date of Substantial Completion will not be established by University's Representative until guarantees, bonds, and maintenance contracts have been approved.
 - B. For Work activities, where Final Completion is delayed materially beyond the date of Substantial Completion, provide updated and approved submittals within ten (10) days after Final Completion, listing the date of Final Completion as the start of the Guarantee to Repair Period.
- 1.07 SUBMITTALS REQUIRED
- A. Submit guarantees, bonds, and service and maintenance contracts specified in the individual Specifications sections.
- (Guarantee form is on following page.)

GUARANTEE

Project Name: _____

Project Location: University of California, Santa Barbara

Project Number: FM _____ L/ _____

GUARANTEE FOR _____
(Specification Section and Contract No.)

(the "Contract"), between The Regents of the University of California (The University) and _____ ("Contractor")

(Name of Installer or Supplier)

the portion of the Work described as follows:

which it has provided for the above referenced Project, is of good quality; free from defects; free from any liens, claims, and security interests; and has been completed in accordance with Specification Section _____ and the other requirements of the Contract.

The undersigned further agrees that, if at any time within ____ months after the date of the guarantee the undersigned receives notice from the 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 ten (10) calendar 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 will 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 ten (10) calendar days after such notice, or to diligently and continuously prosecute the same to completion, the undersigned, collectively and separately, do hereby authorize the University to undertake such correction, repair, or replacement at the expense of the undersigned; and the

Contractor will pay to the University promptly upon demand all costs and expenses incurred by the University in connection therewith.

INSTALLER OR SUPPLIER

Signed _____ Title: _____

Typed Name: _____

Name of Firm: _____

Contractor License Classification and License Number _____

Address: _____

Telephone Number: _____

CONTRACTOR

Signed: _____ Title: _____

Typed Name: _____

Name of Firm: _____

END OF SECTION

SECTION 31 05 13

SOILS FOR EARTHWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Subgrade materials.
- B. Materials for compacted fill.

1.02 RELATED SECTIONS

- A. Section 01400 - Quality Control.

1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01340.
 - 1. Materials Source: Submit names of imported materials suppliers. Provide materials from same source throughout the Work. Change of source requires University's Representative's approval.
 - 2. Submit material samples of each type of material required in sufficient quantities for material testing.

PART 2 PRODUCTS

2.01 SOIL MATERIALS

- A. Onsite Soil: Materials to be used as fill in structural or pavement areas shall consist of granular on-site soils having low potential for expansion and be free of organic and other deleterious materials. During grading operations, the fill and terrace deposits shall be evaluated by University's testing laboratory for organic content and expansion potential. Sisquoc Formation materials shall not be used as compacted fill in structural or pavement areas.

Any existing fill materials and terrace deposits excavated within the site not meeting the minimum requirements for low potential for expansion and granular soil free from organic and other deleterious noted herein, shall not be used in compacted fills.

- B. Imported Fill Material: Imported materials to be used for compacted fill shall be evaluated and approved by the University's Representative prior to being brought to the site. Imported fill shall consist of granular material with less than 30 percent passing the No. 200 sieve. Imported fill material to be placed within 24 inches of finished grade in pavement areas shall have an R-value of at least 20, as determined by California Test 301.
- C. Free-draining backfill: Free draining backfill shall consist of clean, coarse-grained material with no more than 5 percent passing the No. 200 sieve. Acceptable backfill would be:
 - 1. "Pervious Backfill" conforming to Section 300-3.5.2, Standard Specifications for Public Works Construction.
 - 2. "Permeable Material" conforming to Section 68-1.025, Caltrans Standard Specifications.

- 3. Crushed stone, sized between $\frac{1}{4}$ and 1 inch. If crushed stones are used, a filter fabric shall be used to separate the rock from the surrounding soil.
- D. Float Rock: Float rock shall consist of 4-inches minus crushed rock having 100 percent of the material passing the 4-inch sieve, 0 to 30 percent passing the 2-inch sieve, 0 to 10 percent passing the $\frac{3}{4}$ -inch sieve, and less than 5 percent passing the No. 4 sieve.
- E. Filter Fabric: Filter fabric used for underdrains or for separation of contrasting soil material types shall consist of Mirafi 180N or equal.
- F. Aggregate Base: Aggregate base shall be Class 2 conforming to Section 26-1.02A, "Class 2 Aggregate Base" of the Caltrans Standard Specifications.

2.02 SOURCE QUALITY CONTROL

- A. Inspection and testing shall be performed under the provisions of Section 01400.
- B. Inspection and testing will be performed by the University's Testing Laboratory.
- C. If tests indicate materials do not meet specified requirements, change material and retest at no cost to the Contract (cost for retesting will be deducted from amounts due to the Contractor in accordance with Division 1).

PART 3 EXECUTION

3.01 STOCKPILING

- A. Stockpile of materials on site will be subject to approval by the University's Representative and meeting the State Water Quality Control Board and County Air Pollution District requirements.
- B. Stockpile in sufficient quantities to meet Contract Schedule and requirements.
- C. Direct surface water away from approved stockpile site to prevent erosion or deterioration of materials. Cover stockpile at the end of working day and non-working days. Install straw bales or equal at the entire toe of the stockpile to prevent erosion to the adjacent properties and water.
- D. Contractor shall be responsible for constructing necessary erosion control device for stockpiling, excavation, backfilling and other construction activities to prevent silts from washing into the adjacent roadway, landscaping, coastal water and slough areas. Storm water pollution prevention / erosion control devices shall be on-site and installed prior to beginning work.

3.02 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent freestanding surface water.

END OF SECTION

SECTION 31 23 33

TRENCHING AND BACKFILLING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavating trenches for storm drain, and Seawater waste lines construction.
- B. Trench backfill materials.
- C. Backfilling and compacting requirements.

1.02 REFERENCES

- A. Standard Specifications for Public Works Construction (2012 Green Book).
- B. State of California Department of Transportation (Caltrans) Standard Specifications (2015 version).
- C. CAL/OSHA Construction Safety Orders Requirements.

1.03 RELATED SECTIONS

- A. Section 334000– Storm Drainage and Seawater Waste Utilities

1.04 SUBMITTALS

- A. Materials source.
- B. Sand equivalent test reports per ASTM D2419.
- C. Certificates.
- D. Drawings for shoring, bracing, sloping, or other provisions for worker protection for any excavation shall conform to the requirements of the CAL/OSHA Construction Safety Orders Requirements.

1.05 EXISTING UTILITIES

- A. Drawings show existing major underground utilities from the Campus ATLAS reference drawings. Prior to trenching, the Contractor shall notify the University's Representative to obtain any additional information, which may be applicable to the Work.
- B. Any incident of a utility being inadvertently damaged by the Contractor shall be immediately called in to Facilities Management for shutoff at (805-893-2661) and then immediately be repaired by the Contractor at no cost to the University.
- C. The Contractor shall pothole for all utilities prior to any site construction and installation of any work. The Contractor shall identify and mark all existing utilities prior to trenching or boring at no cost to the University, report any conflicts between existing and proposed utilities to the University's Representative. University may elect to alter / change pipe profiles to accommodate existing utilities.

- D. Existing Campus ATLAS drawings are guideline drawings for existing utilities, but there are other smaller utility systems; i.e., irrigation piping and wiring, street light conduits, 120 volt conduits, gas lines and other systems that are not shown on the Campus ATLAS drawings and have to be located prior to trenching. Existing irrigation systems, control wiring, conduits, etc. need to be repaired if damaged by the Contractor at no cost to the University.

PART 2 MATERIALS

2.01 APPROVALS

- A. Imported material shall be approved by the University's Representative prior to being brought to the site. Submit testing report for the imported materials to the University's Representative for review and approval. Provide a sample of the material in sufficient quantity for the University's Representative's use in evaluating the material in accordance with Division 1 – Shop Drawings, Product Data and Samples.

2.02 TRENCH BACKFILL MATERIAL

- A. Bedding material shall consist of imported or on-site free draining granular material (such as sand, gravel, or crushed aggregate) having a minimum Sand Equivalent (S.E.) value of 30. Where the Contractor elects to use gravel, a geotextile for separation shall be placed to encase the bedding materials and separate it from the pipe zone and native materials.
- B. Backfill material for the purpose of these Specifications and all utility work done for the University shall be defined as material used to fill trenches once pipe bedding is compacted in place.
- C. Bedding (Pipe Zone Materials)
1. Pipe Zone: Pipe Zone is defined as the area up to twelve (12) inches above the pipe, as well as minimum six (6) inches under the pipe, whichever is greater.
 2. Standard Bedding: Standard bedding shall include material for bedding, haunching and initial backfill. Bedding material shall be free of vegetable matter and other deleterious matter. Material shall have a minimum Sand Equivalent (S.E.) value of 30. Material shall be made up of sand and conform to the following grain size gradation:

SIEVE SIZES	PERCENTAGE PASSING
3/8"	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	5-30
No. 100	0-10

3. Alternate Bedding: Alternate bedding shall be used whenever ground water may present a problem for proper bedding and compaction or where trenching depth is greater than 8 feet. Bedding shall be ¾" crushed rock free from vegetable matter and other deleterious substances or as approved by the University's Representative. Material shall form a firm, stable base when consolidated. Material shall be crushed aggregate and conform to the following grain size gradation:

SIEVE SIZES	PERCENTAGE PASSING
1"	100
¾"	90-100
½"	30-60
3/8"	0-20
No. 4	0-5

- D. Native material may be used for backfill in areas where trenches are cut in non-paved areas unless the native material is unsuitable for trench backfill. Unsuitable material is defined as any material that falls under one of the following Unified Soils Classifications OL, MH, CH, OH, or Pt or soil which cannot be compacted to 95% relative compaction.
- E. Trench Backfill shall be native or import material and shall have a sand equivalent of 30 or greater and shall not contain rocks larger than 3-inches in greatest dimension. Rocks of maximum allowed size shall not total more than 30% of the Class 2 Backfill. No rocks larger than 2-1/2-inches will be permitted within 18-inches of the bottom of a pavement structural section. ¾" crushed rock backfill could be used for trench depths greater than 8 feet as approved by the University's Representative. Crushed rock backfill shall be free from vegetable matter and other deleterious substances.
- F. Cement Slurry Backfill shall conform to the requirements of the State of California Department of Transportation, Standard Specifications Section 19, Earthwork, Subsection 19-3.062 "Slurry Cement Backfill". Use slurry backfill for trenches within all the existing pavement areas.
- G. Aggregate base shall consist of Class 2 conforming to Section 26-1.02A, "Class 2 Aggregate Base", of the Caltrans Standard Specifications. Class 3 aggregate manufactured from reclaimed materials can be used in lieu of Class 2 material provided the Class 3 material meets the gradation and quality requirements for Class 2 aggregate base.
- H. Compacted fill material shall be free from organic material, oversized rocks (greater than 2-1/2 inches) and other deleterious material. On-site soil or imported materials to be used as compacted fill in building, slab-on-grade, retaining wall or roadway areas shall have an expansion index of no more than 20.
- I. Drainage material shall consist of Class 1 permeable material, Type A, conforming to Section 68-1.025 of the Caltrans Standard Specifications.
- J. Geocomposite drain shall consist of a manufactured plastic core not less than 0.25 inches thick with both sides covered with a layer of filter fabric that will provide a drainage void.
- K. Geotextile for separation shall consist of nonwoven geotextile that conforms to the requirements outlined in the Caltrans Standard Specifications for Filter Fabric-underdrains, Section 88-1.03.
- L. Imported borrow shall consist of non-expansive soil suitable for its intended use and area of placement at the site. Imported borrow shall be reviewed by the geotechnical engineer before being brought to the site. However, all imported materials must comply with all specified requirements as placed at the site. Imported soil to be used as compacted fill shall have an expansive index of no more than 20. Additional criteria will apply to select materials otherwise specified for this project.
- M. Trench backfill shall consist of imported or on-site material that is free of organics, debris, oversized material greater than 2-1/2 inches, and other deleterious materials. Trench backfill material shall have at least 85 percent of the material passing the U.S. Standard No. 4 sieve, and/or comply with the applicable requirements for the area where the trench backfill is being placed (such as the pavement

structural section, or sand placed below floor slabs).

2.03 BASE AND PAVEMENT REPLACEMENT

A. General: Road base and pavement material shall be in accordance with the requirements of the Caltrans Standard Specifications. Where no standard is specified for pavement and base replacement the following materials shall be used.

1. Aggregate Base: Aggregate base material specified herein shall be free of organic matter and other deleterious materials, and shall be of the nature that it can be compacted readily under watering and rolling. Aggregate base shall conform to the following gradation:

SIEVE SIZES	PERCENTAGE PASSING
1"	100
¾"	90-100
No. 4	30-60
No. 30	0-20
No. 200	2-7

	Testing Method	
Resistance (R-Value)	Calif. 301	70 min
Sand Equivalent	Calif. 217	20 min

2. Asphalt: Asphalt for resurfacing existing roads shall match type and class of existing road and shall be as required by the Caltrans Standard Specifications.

2.04 SOURCE QUALITY CONTROL

A. Inspection and testing shall be performed under the provisions of Division 1 – Quality Control.

PART 3 EXECUTION

3.01 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Locations of saw cut lines are schematic throughout the plans. Contractor shall verify the extent of removal area per trenching methods applied to construction at no additional cost to the University or project.

3.02 TRENCHING

- A. Before beginning any trenching five feet or more in depth, Contractor shall submit to University's Representative, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during excavation. The proposed plan shall comply with the standards established by the CAL/OSHA Construction Safety Orders. If the detailed plan varies from such shoring system standards, it shall be prepared by a registered civil or structural engineer whose name and registration number shall be indicated on the drawing. If a dispute arises as to whether the plan must be prepared by a registered civil or structural engineer, the University's Representative's determination of the matter shall be final and conclusive on Contractor. The cost of required engineering services shall be borne by Contractor and shall be deemed to have been included in the amount bid for the Work as stated in the Agreement.

- B. Neither the review nor approval of any plan showing the design of shoring, bracing, sloping, or other provisions for worker protection, shall relieve Contractor from its obligation to comply with CAL/OSHA Construction Safety Orders for design and construction of such protective Work, and Contractor shall indemnify University, University's Representative and its consultants from any and all claims, liability, costs, actions, and causes of action arising out of or related to, the failure of such protective systems. Contractor shall defend University's officers, employees, agents, consultants and University's Representative in any litigation or proceeding brought with respect to the failure of such protective systems.
- C. All trenches are to be backfilled to finish grade within 24 hours of opening or steel plated at the end of each workday.
- D. All trenches, holes, etc. are to be completely protected using solid barricades, and steel plates both during construction and during off hours, including night time.
- E. Flashing warning light barricades are required on bike paths, sidewalks, roads, and any other critical areas that require nighttime protection.
- F. Bike paths, sidewalks, and roads shall not be blocked at any time or in any way. Trenching or boring, if necessary, across bike paths, sidewalks, or roads involves special instructions and approval of the construction procedure by the University's Representative at least 3 days prior to the Work actually being started. Contractor shall provide temporary routing of pedestrians, bicycles, and vehicular traffic with professional grade signs.
- G. Pursuant to Labor Code 6707, the Contractor shall include in the Base Bid, all costs incidental to the provision of adequate sheeting, shoring, bracing or equivalent method for the protection of life or limb, which shall conform to applicable Federal and State Safety Orders.
- H. Contractor shall maintain trench and building excavation continually free from water. Contractor shall be responsible for performing dewatering to maintain trench continually free from water and as requested by the University's Representative during utility trench excavation at no extra cost.
- I. Trench under tree dripline shall be hand dug, unless approved in writing by University or Contractor-hired arborist.
- J. Unless otherwise recommended, utility trenches adjacent to foundations shall not be excavated within the zone of foundation influence.
- K. Utilities that must pass beneath a foundation but will be within 3 feet of the bottom of the foundation shall be sleeved and encased in structural concrete; the over-excavation and recompaction program discussed in the Earthwork specification section of the report shall be extended below the concrete encasement.
- L. Utilities that will pass beneath a foundation and will be deeper than 3 feet below the foundation shall be placed with properly compacted utility trench backfill and the foundation shall be designed to span the trench.
- M. Trench backfill shall be compacted to a minimum of 95 percent of compaction for paved areas. A minimum of 85 percent of compaction will be required for landscaped or other unimproved areas.
- N. Use 1-sack sand-cement slurry for backfill within the pipe zone between the bedding and 12 inches above the top of pipe in lieu of sand backfill, when encounter wet soil condition and not suitable for compaction. This condition shall be reviewed and approved by the University's Representative, and without additional cost to the Contractor.

- O. All trench bedding and backfill shall be compacted to minimum 95 percent compaction.
- P. Material requirements for bedding material, pipe zone material and trench backfill at described in Section 2.02 of this specification. Utility trench bedding and backfill materials shall be compacted to at least 95 percent relative compaction. Utility trenches extending below the groundwater level shall be backfilled with 2-sack sand-cement slurry up to 1 foot above the groundwater level.
- Q. Utility pipes shall be placed on properly prepared bedding. Bedding is select fill material placed between the trench subgrade and the bottom of the pipe. Where the soils exposed at the bottom of the utility trenches are soft and yielding, the foundation shall be stabilized or be removed and replaced with properly compacted soil prior to placing the pipe. Gravel bedding can be used in lieu of sand bedding to assist in stabilizing the subgrade, if needed. At least 6 inches of bedding material shall be provided below the pipe.
- R. Pipe zone material is select fill material placed between the top of the bedding and at least 12 inches above the top of the pipe. Compaction within the pipe zone shall be performed such that the pipe is fully supported during compaction, and such that excessive deformation or damage to the pipe does not occur. Compaction above the springline or top of the pipe shall not be performed until the fill placed below that elevation has been compacted.
- S. Trench backfill is select fill material placed above the pipe zone and the finished grade or the base of other specified backfill materials (such as pavement structural sections). Trench backfill can consist of either on-site or imported fill material that complies with the recommendations of this report, and any other requirements for the area where the trench backfill is being placed.

3.03 STOCKPILING

- A. Stockpiling of imported materials on-site shall be in accordance with Division 1 – Material and Equipment of this specification.
- B. After stockpiles are removed, leave area in a clean and neat condition.
- C. Cover stockpiles at the end of workday. Implement erosion control devices to contain all stockpiled material.

3.04 FIELD QUALITY CONTROL

- A. Inspection and testing shall be performed under the provisions of Section 01400 – Quality Control of this specification.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Asphalt concrete paving for roadway and driveway areas.

1.02 RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 32 13 13 – Concrete Paving

1.03 REFERENCES

- A. Standard Specifications State of California Department of Transportation (2015 version).
- B. ASTM D3381 Standards

1.04 SUBMITTALS

- A. Submit asphalt concrete mix design(s) for approval of the University's Representative.

1.05 TESTING AND INSPECTION

- A. Testing and inspection of asphalt pavement mix(es) and testing of placed stabilizing base course and asphalt pavement will be performed by the University's Testing Laboratory and paid for by University in accordance with Division 1.
- B. Coordinate and allow the University's Testing Laboratory access to the mixing plant for verification of weights or proportions, character of materials used and determination of temperatures used in the preparation of asphalt concrete mix.

PART 2 PRODUCTS

2.01 GENERAL

- A. Provide the aggregate base, and bituminous surface conforming to the requirements of the Standard Specifications State of California Department of Transportation.

2.02 PAVING MATERIALS

- A. Asphalt Concrete: Asphalt concrete shall be Type B per Section 39 of the Standard Specifications of the State of California, Department of Transportation. The grading and proportioning of aggregates shall be such that the combined mineral aggregate conforms to the specified requirements.
- B. Aggregates for base course below asphalt concrete shall be Class 2 Aggregate Base and conform to Section 26 of the State of California Department of Transportation Standard Specifications, latest edition. Aggregate materials shall be free of organic materials and other deleterious substances. Aggregate shall

conform to 3/4 inch maximum grading requirements. Class 2 Aggregate Base shall have a minimum sand equivalence of 25. Recycled aggregate meeting the base course specifications will be acceptable.

- C. Aggregate for asphalt concrete shall be Type B, 1/2 inch maximum, medium grading in conformance with the requirements of Section 39 of Standard Specifications State of California Department of Transportation.
- D. Asphalt Binder: Conformance with the Section 92 of the Standard Specifications State of California Department of Transportation, Grade AR-8000.
- E. Asphalt Emulsion: Conformance with the Section 94 of the Standard Specifications State of California, Department of Transportation, Grade SS-1h.

2.03 ASPHALT PAVEMENT MIX

- A. Combine mineral constituents in proportions to produce a mixture conforming to requirements of the Standard Specifications State of California Department of Transportation, Section 39-3.
- B. Percentage by weight of asphalt cement in mixture shall be in accordance with Section 39 of the Standard Specifications State of California Department of Transportation.
- C. Maintain thorough and uniform mixture.
- D. Bring asphalt and mineral constituents to required temperatures before mixing. Ensure aggregates are sufficiently dry so as not to cause foaming in mixture.

PART 3 EXECUTION

3.01 GENERAL

- A. Execute Work in accordance with the Standard Specifications State of California Department of Transportation.

3.02 PREPARATION

- A. Compacted fill shall be placed to the proposed subgrade level as described below. Pavement materials shall conform to Section 26 and 39 of the Caltrans Standard Specifications (or equivalent) for aggregate base (AB) and asphalt concrete (AC), respectively. Subgrade and pavement materials placed in the pavement areas shall be compacted to at least 95 percent relative compaction.

3.03 FILL PLACEMENT

- A. Jetting or ponding shall not be permitted for the placement or compaction of fill materials for this project. Fill materials shall be moisture conditioned to within about 2 percent of optimum and spread in horizontal lifts no thicker than 8 inches prior to being compacted. Each layer shall be spread evenly and shall be thoroughly blade-mixed during the spreading to provide relative uniformity of material within each layer. Fill materials to be placed in structure areas shall be compacted to at least 95 percent relative compaction as determined from ASTM D 1557.
- B. Rocks larger than 2-1/2 inches in diameter, organics and other deleterious material shall not be permitted within the fill material being placed. Rocks shall not be nested, and voids shall be filled with compacted material. When the moisture content of the fill material is above or below that sufficient to achieve the recommended compaction, the material shall be dried or wetted, and bladed and mixed to provide for relatively uniform moisture content throughout the material. Soft or yielding materials shall be removed and replaced with properly compacted material prior to placing the next layer of fill.

- C. Ensure grading of subgrade to required elevation.
- D. Before final rolling, shape entire section, add additional sub-soil if necessary, and compact subgrade to provide grades, elevation and cross-section indicated. Points of finished subgrade surface shall be within 0.05 foot of elevations indicated on the Drawings.

3.04 BASE COURSE

- A. Place aggregate base course in accordance with requirements of Section 26 of the Standard Specifications State of California Department of Transportation and to the thickness shown on the Drawings. Grade and compact in 6-inch layers to at least 95 percent of compaction per ASTM D1557.
- B. Level surfaces to elevations and gradients indicated on the Drawings.
- C. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- D. Aggregate bases shall be watered after compaction per provisions of the Standard Specifications State of California Department of Transportation, Section 17, "Watering".
- E. Where the required aggregate base thickness is 4-inches or less, the aggregate base may be spread and compacted in one layer. Where the required thickness is more than 4-inches, the aggregate base material shall be spread and compacted in 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 4-inches.
- F. Apply weed killer on the aggregate base in accordance with manufacturer's recommendation and instructions prior to paving. Weed killer product shall be approved by the University's Representative.

3.05 MAINTENANCE

- A. Maintain the base course until the asphalt pavement is in place. Maintenance shall include drainage, rolling, shaping and water as necessary to maintain the course in proper condition. Maintain sufficient moisture at the surface to prevent a dusty condition. Areas of completed base course that are damaged shall be conditioned, reshaped and recompacted in accordance with the requirements of the Specifications without additional cost to the University.

3.06 FINISH SURFACE

- A. Surface tolerance shall comply with Section 26 of the Standard Specifications State of California Department of Transportation.

3.07 TACK COAT

- A. Prior to the application of the asphalt concrete, a paint binder (tack coat) shall be applied to all surfaces of walkway, curbs, gutters, manholes and drainage structures, which will be in contact with asphalt pavement per Section 92 of the Standard Specifications State of California Department of Transportation.
- B. Coat surfaces of catch basins, which are to remain free of asphalt with oil to prevent asphalt adhesion.
- C. After paving, apply six (6) inch wide layer of hot rubberized crack filler on construction joint and apply coat guard top sealer with 6 pounds sand per gallon at all paving joints to new and existing pavement.

3.08 ASPHALT CONCRETE

- A. Requirements: The bituminous concrete shall consist of mineral aggregate, uniformly mixed with bituminous material in a central plant in accordance with Section 39 of the Standard Specifications State of California Department of Transportation. The percentage of asphalt binder shall be in accordance with Section 39 of the Standard Specifications State of California Department of Transportation. The mixing plant and construction equipment shall conform to the requirements of Section 39 of the Standard Specifications State of California Department of Transportation.
- B. Placing: Deliver bituminous mixtures to the Work site temperatures specified in Section 39 of the Standard Specifications, State of California Department of Transportation. Spread and place in accordance with Section 39 of the Standard Specifications State of California Department of Transportation.
- C. Compaction: Initial or breakdown rolling and the final rolling of the uppermost layer of the asphalt concrete shall be in accordance with Section 39 of the Standard Specifications State of California Department of Transportation. Compaction by vehicular traffic shall not be permitted.

3.09 JOINING PAVEMENT

- A. Carefully make joints between old and new pavements or between successive days work in such manner as to insure a continuous bond between old and new sections of the course.
- B. Expose and clean edges of existing pavement. Cut edge to straight, vertical surfaces. Paint all joints with a uniform coat of tack coat before the fresh mixture is placed. Prepare joints in the new pavement in accordance with Section 39 of the Standard Specifications State of California Department of Transportation.

3.10 TOLERANCES

- A. Flatness: Maximum variation of 1/2 inch when measured with a 10-foot straight edge.
- B. Variation from True Elevation: Within 1/4 inch.
- C. Verify slope of pavement so no ponding will occur.

3.11 FIELD QUALITY CONTROL

- A. Inspection and testing shall be performed under provisions of Division 1 of this specification.
- B. Field inspection and testing will be performed by the University's Testing Laboratory. The Contractor shall cooperate with such testing and shall give the University's Representative advance notice of paving scheduling.
- C. If tests indicate materials do not meet specified requirement, change material and retest at no cost to University. Cost for retesting will be deducted from amount due the Contractor.
- D. Frequency of Test: As determined by the University's Representative.

3.12 PROTECTION

- A. After placement, protect pavement from mechanical injury.

END OF SECTION

SECTION 32 13 13

CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes all materials, labor, transportation, services, and equipment necessary for and reasonably incidental to performing to completion the Work shown on the Contract Drawings and as specified herein.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Cast-in-Place Concrete Pavement.
 - 2. Expansion joints with sealant.
 - 3. Crack control joints.
 - 4. Smooth steel dowels.
 - 5. Curing Compound.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.3 REFERENCES

- A. Standard Specifications State of California Department of Transportation (2015).

1.4 SUBMITTALS

- A. General: Submit as specified in Division 1.
- B. Recycled Content: Submit as specified in Division 1.
- C. Submit product data, samples, and manufacturing sources for materials and items, including: reinforcement and forming accessories, integral colored admixtures, colored bond-breaker/antiquing release agent, concrete topping and hardener, stamping mats, joint systems, curing compounds, pavement sealants, and other materials to the University's Representative. All product data shall also include source or manufacturer's name, address, and telephone numbers.

1. Submit a minimum of four (4) bound copies, with each material tabbed for quick reference.
 2. Submit a one-foot section of expansion joint material.
- D. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the requirements indicated, based on comprehensive testing of current materials:
- F. Material Certificates in lieu of material laboratory test reports when permitted by the University's Representative. Material certificates shall be signed by the manufacturer and Contractor certifying that each material item complies with or exceeds requirements. Provide certification from admixture manufacturers that chloride content complies with requirements.
- G. Minutes of Pre-Installation Conference, distributed and approved in writing as to the content of the conference by concerned parties in attendance.
- H. Submit data indicating compliance with qualifications specified in Article 1.04 herein this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed in the last three (3) years at least three (3) concrete installations similar in material, design, and extent to that indicated for this Project. Installer will assign mechanics from these earlier applications to this Project, of which one will serve as lead mechanic.
- B. Single-Source Responsibility: Obtain each color, type, and variety of concrete, aggregates, sand, and joint materials, from a single source with resources to provide products and materials of consistent quality in appearance and physical properties without delaying the Work.
- C. Concrete Standards: Comply with provisions of the following standards, except where More stringent requirements are indicated.
1. ACI 318, "Building Code Requirements for Reinforced Concrete."
 2. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."
- D. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- E. Concrete Testing Service: Inspection and testing shall be performed under the provisions of Division 1 – Quality Control. Testing Laboratory shall perform materials evaluation tests and to design concrete mixes.
- F. Pre-installation Conference: Conduct a Pre-installation Conference at the Project Site to comply with requirements of Division 1 and the following:
1. Before installing "Concrete Finishes", meet with the University's Representative to review requirements and design objectives, including a review of concrete textures, colors, finishes, layouts, and other design intents.

1.6 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular, bicycle, and pedestrian traffic as required for other construction activities. Submit construction traffic control and phasing plan to University's Representative for approval prior to construction.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, MDO plywood, wood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth non-exposed surfaces.
 - 1. Use flexible or curved forms for curves of a radius 100 feet or less.
- B. Form-Release Agent: Provide commercially formulated form-release agent with a maximum of 350g/L volatile organic compounds (VOC's) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

- A. Reinforcement Bars: ASTM A 615/A or A706 (weldable), Grade 60 deformed.
- B. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends squared and free of burrs.
- C. Hook Bolts: ASTM A 307, Grade A internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concrete operations, and to permit removal without damage to concrete or hook bolt.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
- E. Recycled Content: Steel reinforcement material shall be minimum 90% recycled content. Provide certification of recycled content in accordance with Division 1.

2.3 CONCRETE MATERIALS

- A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project.
- B. Portland Cement: ASTM C 150, Type II.
- C. Fly Ash: ASTM C 618, Class F. Fly ash shall be used to replace a minimum of 25% of Portland cement of typical mix design.
- D. Normal Weight Aggregate: ASTM C 33, Class 4, uniformly graded, from a single source, with coarse aggregate as follows:

1. Maximum Aggregate Size
1-1/2 inches nominal for concrete pavement
 2. Do not use fine or coarse aggregates containing substances that cause spalling. Aggregate shall be non-reactive aggregate.
- E. Water: ASTM C 94.

2.4 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures.
- B. Air-entrainment is not allowed.
- C. Water-Reducing Admixture: ASTM C 494, Type A, AASHTO M 194, and CRD C 87.
- D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.5 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Curing Compound: Curing Compound conforming to ASTM C309-11 shall be applied to the exposed surface of the concrete. The curing compound shall be class A non-yellowing, type 1D, clear or translucent with fugitive dye, or Type 2 white pigmented, unless noted otherwise. Contractor shall provide all compounds delivered ready-mixed in sealed containers and labeled with the date of manufacture. When not in use, containers of curing compound shall remain air-tight. Curing compound shall be Seal Cure/25 or 1600-White both by W.R. Meadows, or approved equal.

2.6 CONCRETE MIXES

- A. Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
- B. Use a qualified independent testing agency for preparing and proposed mix designs for the trial batch method.
- C. Proportion mixes to provide concrete with the following properties:
 - a. Compressive Strength (28 Days): 4,000 psi.
 - b. Slump Limit: 4- inches at point of discharge.
 - c. Water/cement ration: 0.45 maximum

- D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:

1. Fly Ash: Twenty-five (25%) percent content.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.

1. When air temperature is between 85 deg. F. and 90 deg F. reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F., reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Proof-roll prepared sub-base surface to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and sub-grade is ready to receive pavement.
- B. Remove loose material from compacted sub-base surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating reinforcement and with recommendations in CRSI's "Placing Reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Lap splice shall conform to the reinforcing bar lap splice schedule. Reinforcing shall be clean and free from loose rust and other coatings that would inhibit reinforcing bond. Reinforcing steel that has epoxy or other coating steel shall be clean and free from damage prior to placement of concrete.

REINFORCING BAR LAP SPLICE SCHEDULE (in)					
BAR SIZE (UNCOATED)	MASONRY*	CONCRETE**			
	fm' (psi)	f'c (psi)			
	1500	2500	3250	4000	5000
#4	26	32	28	25	23
#5	40	39	35	31	28
#6	54	47	42	37	34
#7	63	69	60	54	49
#8	72	78	69	62	56

* Bars #4-#6 Calculated per TMS402-11 2.1.7.7.1, Bars #7-#8 per CBC 2107.2.1

** Per ACI 318-11 Section 12.15 - Class B Splice

3.4 JOINTS

- A. General: Construct expansion joints and crack control joints per layout plan in construction documents.
- B. Expansion Joints:
 1. Concrete slabs shall have a 1/2-inch wide expansion joint to accommodate for temperature expansion. Expansion joint material shall be polyethylene closed-cell material with removable top strip, 1/2-inch square, for application of joint filler sealant (W.R. Meadows Deck-O-Foam or approved equivalent). Expansion joint spacing shall not exceed 24-feet unless noted otherwise on construction documents.
 2. Sealant – Once the concrete is adequately cured, provide sealant at all expansion joints and crack control joints. Utilizing the zip-off strip of W.R. Meadows Deck-O-Foam expansion joint material, remove top 1/2-inch after concrete placement is complete and concrete is cured. Fill joint up to 1/2-inch deep with sealant that meets ASTM C920, Non Sag, Traffic Rated, Class 25 (Sikaflex 2C NS EZ or approved equivalent) in accordance with the manufacturer's recommendations and requirements.
 3. Dowels - Slab reinforcing shall terminate 2-inches away from an expansion joint. Smooth #5 dowels, 24-inch long, shall be placed at 12-inches on center into adjoining slabs. Dowels shall be centered in the slab and perpendicular to the expansion joint and be secured in a concrete pour on one side and then greased on the remaining 12-inches to allow for horizontal movement after all concrete is placed.
- C. Crack control joints: Concrete shall have crack control joints at 12-feet (maximum spacing) on center unless noted otherwise on construction documents. Depth of the crack control joint shall be the thickness of the slab divided by 3, or minimum 2-inches. Sawcut shall maintain a minimum of 3/4-inch from all reinforcing steel. Crack control shall consist of a tooled joint during placement of the concrete or shall be sawcut into place after concrete has set and not longer than 12 hours from concrete placement. Once the concrete is adequately cured, the crack control joint shall be filled with sealant that meets ASTM C920, Non Sag, Traffic Rated, Class 25 (Sikaflex 2C NS EZ or approved equivalent) in accordance with the manufacturer's recommendations and requirements.

3.5 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete form-work installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Moisten sub-base to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.

- C. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing of concrete.
- D. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- E. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- F. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using magnesium bull floats or derbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading dry-shake surface treatments.
- G. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg. F., and not more than 80 deg. F. at point of placement.
 - 2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
- J. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg. F. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, reinforcement steel, and sub-grade just before placing concrete. Keep sub-grade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING

- A. General: All finished surfaces shall meet the Caltrans Standard Specifications Section 40-1.03H(3) Final Finishing requirements. Color(s) and finish(es) specified herein shall match reference samples as approved by the University's Representative. Wetting of concrete surfaces during screeding, initial floating, or finishing operations is strictly prohibited.
 - 1. Concrete Paving: Apply a broom finish on all surfaces accepted by the University's Representative. Match approved reference sample to compare for color, texture, finish,

and other characteristics relating to aesthetic effects. Color shall be “Natural Grey”, or otherwise noted in landscape or architectural plans.

- a. All work shall conform to CAL OSHA/MSDS for application and clean up procedures.
- b. After concrete is fully hydrated (approx. 30 days), seal concrete with two (2) coats of concrete sealer in accordance with manufacture’s recommendations.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and follow recommendations in ACI 305R for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb./sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete not treated with concrete topping and hardener and texture mats by moisture curing, moisture-retaining cover curing, curing compound or a combination of these as follows:
 1. Moisture Curing: Keep surfaces continuously moist for not less than seven (7) days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Re-coat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 3. Cure concrete treated with concrete topping and hardener and texture mats according to manufacturer’s instructions.
 4. Apply curing compound according to manufacturer’s instructions.
 5. Do not cure concrete treated with concrete topping and hardener and texture mats using methods harmful to concrete surface treatments including low pressure or high pressure

steam, burlap, plastic sheeting, membrane paper, water misting, or sodium-silicone type hardeners.

- E. Pedestrian and vehicular loads maybe placed upon the finished concrete prior to the 56 days curing provided the concrete attains the minimum compressive strength as noted below:

1. Pedestrian loading – 2,500 psi
2. Light vehicular loading (10,000 lb. vehicle maximum) – 3,250 psi
3. H-20 loading – 4,000 psi

If it is desired to place loads on the concrete prior to the 56 days cure period, it is recommended additional concrete cylinders be taken to provide proof that the concrete has achieved adequate strength. Contractor shall consider samples to break at 3-4 days, 7 days, 14 days or 28 days.

3.8 PAVEMENT TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed 1/4 inch.
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
8. Joint Spacing: 1- inch.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: University will perform testing during concrete placement according to requirements specified in Division 1 and in this Section.
- B. Testing Services: Testing shall be performed according to the following requirements, and as directed by the University's Representative:
1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94.
 2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test, but not less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.

3. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each set of compressive-strength specimens.
 5. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
 1. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. One specimen shall be tested at 7 days and two specimens at 56 days; one (1) specimen shall be retained in reserve for later testing if required.
 7. When frequency of testing will provide fewer than five compressive-strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five (5) are used.
 8. When total quantity of a given class of concrete is less than 50 cu. Yd. University's Representative may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.
 9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, current operations shall be evaluated and corrective procedures shall be provided for protecting and curing in-place concrete.
 10. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive compressive-strength test results equal or exceed specified compressive strength and no individual compressive-strength test result falls below specified compressive strength by more than 500 psi.
- C. Reports of compressive-strength tests shall contain the following:
1. Project identification name and number.
 2. Date of concrete placement.
 3. Name of concrete testing agency.
 4. Concrete type and class.
 5. Location of concrete batch in pavement.
 6. Design compressive strength at 28 days.
 7. Concrete mix proportions and materials.
 8. Compressive breaking strength.
 9. Type of break for 3-4, 7, 14, 28 and 56-day tests.

- D. Additional Tests: Additional tests of the concrete will be required when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by the University's Representative. Contractor shall pay for all retests, and be responsible for any delay and of contract time. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

3.10 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this Section. Remove damaged and unacceptable concrete pavement to nearest score line or expansion joint.
- B. Drill test cores where directed by the University's Representative when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from pavement unless minimum strength has been achieved in accordance with section 3.7E.
- D. Maintain concrete free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 32 17 23

PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:

1. Section Includes: Replacement of all pavement markings on finished pavement, and related traffic control accessories Work, complete. Typical paint replacement shall be the entire length of gapped lines and ten (10) feet on solid lines.

B. Work installed but furnished in other Sections:

1. None.

1.02 SUBMITTALS

- A. Product Data: Submit certification, test results, source, and sample of each material to be used, in original container.

1.03 QUALITY ASSURANCE

- A. Standards: Comply with U.S.D.O.T. Federal Highway Administration "Standard Specifications for Construction of Roads and Bridges", Section 634: Traffic Markings for Wet-Applied traffic paints. Also, comply with State of California Department of Transportation "Standard Specifications and Plans" 2015 version, Applicable Sections – Section 84 – Markings. California Building Code (CBC, 2013 version).

1.04 HANDLING

- A. N/A

PART 2 PRODUCTS

2.01 MATERIALS

- A. Paint: Traffic paint or compound suitable for paved surfaces conforming to the requirements of Federal Specification TT-P-115, Type III, or TT-P-87. Reflective media will not be required. Colors shall be as follows, unless otherwise noted on the Drawings.
1. White: Crosswalks, signs, lane markings where shown.
 2. White: Parking stall stripes, directional arrows, lane markings where shown.
 3. Red: Fire Lanes.
 4. Blue: Accessible symbols.
 5. Black: Borders around directional arrows where indicated.
 6. Painted lines and markings on pavement shall be 3" minimum wide; and blue in color equal to Color No. 15090 per Federal Standard 595B.

- 7. Parking spaces for the disabled shall be marked according to figure CBC 11B-18A, 11B-18B, and 11B-18C.
- 8. Tactile warning lines (detectable warning surface) shall be per Section 02585 of these specifications.
- B. Reflective Pavement Markers: Bi-directional pavement markers, 4" x 4" x 3/4" high, single-color, conforming to State of California and Federal specifications; Stimsonite 88 Reflective Pavement Markers, Model V16C-88AY Yellow, distributed by Hawkins Traffic Safety Supply Division of Hawkins-Hawkins Company, Inc. or equal.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Preparation: Furnish an experienced technician to supervise the location, alignment, layout, dimensions, and application of pavement markings.
- B. The area to be painted shall be free of loose particles, grease, laitance, or other foreign matter that would reduce the bond between the coat of paint and the pavement. Apply the markings by machine methods acceptable to the University's Representative.
- C. Thoroughly mix paint prior to application.
- D. Apply paint uniformly in accordance with the manufacturer's recommendations. Protect markings from traffic until paint is thoroughly dry. All markings shall present a clean-cut, uniform and workmanlike appearance. Correct markings that fail to have a uniform, satisfactory appearance.
- E. Pavement Markers: Secure in accordance with manufacturer's recommendations.

END OF SECTION

SECTION 32 80 00

IRRIGATION

PART I - GENERAL

1.01 DESCRIPTION OF WORK

A. General

1. This Section specifies requirements for irrigation system put-back and related items as shown on drawings and as specified herein. All irrigation lines and control wires or other equipment disturbed during utility installation shall be repaired in good working order as specified herein.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related Sections

1. Section 32 90 00: PLANTING
2. Section 32 93 43: TREES

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 1. Seamless Copper Water Tube
 2. Polyvinyl Chloride (PVC) Plastic Pipe Fittings - Schedule 40
 3. Polyvinyl Chloride (PVC) violet colored pipe marked continuously with the wording **CAUTION RECLAIMED WATER**, schedule 40 for sizes 3" and smaller.

1.04 QUALITY ASSURANCES

- A. Installer Qualifications: Provide at least one person who shall be present at all times during installation of Work, familiar with type of materials specified herein and material manufacturer's recommended method of installation and direct Work performed in this Section.
- B. Fees, Codes and Standards: Comply with State, County and Municipal codes and regulations.
- C. Plastic Pipe: Provide manufacturer's guarantee that plastic pipe has passed or is capable of passing the Acetone Immersion Test and is free from manufacturing defects.
- D. Drawings: Due to scale of drawings, it is not always possible to indicate all offsets, fittings and sleeves which may be required. Investigate structural and finished conditions affecting Work. Install Work to avoid conflicts between plantings, other site utilities and architectural features.

1.05 SUBMITTALS

- A. Materials List
 1. Within thirty-five (35) days from date of Notice to Proceed and before materials are delivered to job site, submit two (2) complete lists of materials.

- a. Furnish manufacturer's name, catalog number, complete catalog cut, technical data and manufacturer's recommendations for installation and operation.
 2. Do not permit materials to be installed until reviewed by University's Representative.
 - B. Manuals: Furnish two (2) sets of service manuals to University's Representative. Include manufacturer's catalogue cuts, catalogue numbers, price lists, local source, address and phone number, manufacturer's address and operating instructions for equipment installed.
 - C. Tools and Equipment
 - D. Furnish:
 1. Two (2) sets of special tools required for removing, disassembling and adjusting sprinklers and valves installed.
 2. One (1) quick coupler key and matching hose swivel for every five (or fraction) of quick coupler valves installed.
- 1.06 DELIVERY, STORAGE AND REPLACEMENT
- A. Deliver to job site and provide safe storage. Coordinate with General Contractor.
 - B. Protect materials from vandalism and other trades.
 - C. In event of damage, make repairs and replacements within seven (7) days at no cost to University or project. Review damage and method of repair with University's Representative.
- 1.07 GUARANTEE
- A. Guarantee for One Year from Final Acceptance
 1. Materials are new and free from defects.
 2. Against defects of materials and workmanship and damage caused by defects.
 3. To make required replacements with new materials and correct damage caused by defects at no cost to University or project.
 4. Complete coverage of areas indicated to be irrigated on drawings including minor adjustments required by field conditions.
 - B. Guarantee: Refer to section 01740, GUARANTEES, WARRANTIES, BONDS, SERVICE & MAINTENANCE CONTRACTS, for submittal form.

PART II - PRODUCTS

2.01 MANUFACTURERS

- A. Provide products of manufacturers indicated on drawings or equivalent. Replace in-kind any products removed for utility installation that are damaged and cannot be re-installed.

2.02 PIPE AND TUBING

A. Copper: ASTM B88, Type L, hard-drawn copper tube and wrought solder type.

B. Potable Water Plastic Pipe

1. Polyvinyl chloride (PVC), new and unused; no more than 15 percent less than full manufactured length.
2. Continuously and permanently marked plastic pipe with following information:
 - a. Manufacturer's name
 - b. Pipe size
 - c. IPS size (schedule number)
 - d. Type of material
 - e. Code number
3. Non-pressure lateral lines, Class 200, bearing National Sanitation Foundation (NSF) seal, except as otherwise indicated on drawings.
4. Pressure lines, 1/2" through 1-1/2", Schedule 40, bearing NSF seal.
5. Pressure lines, 2" and larger, Class 315.
6. Nipples: Schedule 80
7. Sleeves for lines under paving as shown on drawings, Class 160.
8. Fittings for pipe, Schedule 40 polyvinyl chloride, Type I-II, bearing NSF seal and complying with requirements of ASTM D2466.
9. For joining, use solvent complying with requirements of ASTM D2466 and recommended by manufacturer of plastic pipe used.

C. Reclaimed Water Plastic Pipe

1. Polyvinyl chloride (PVC) violet colored pipe, new and unused; no more than 15 percent less than full manufactured length.
2. Continuously and permanently marked plastic pipe with following information:
 - a. Manufacturer's name
 - b. Pipe size
 - c. IPS size (schedule number)
 - d. Type of material
 - e. Code number
 - f. "CAUTION RECLAIMED WATER"

3. Non-pressure lateral lines, Class 200, bearing National Sanitation Foundation (NSF) seal, except as otherwise indicated on drawings.
4. Pressure lines, 3" and smaller, Schedule 40, bearing NSF seal.
5. Pressure lines, 4" and larger, Class 315.
6. Sleeves for lines under paving as shown on drawings, Class 160.
7. Fittings for pipe, Schedule 40 polyvinyl chloride, Type I, bearing NSF seal and complying with requirements of ASTM D1785-74 and CS-207-60.
8. For joining, use solvent complying with requirements of ASTM D2466 and recommended by manufacturer of plastic pipe.
9. Violet pipe is available from Coastal Pipco, Oxnard (805) 642-4119 or Smith Pipe and Supply, Oxnard (805) 485-5460.

2.03 BURIED LINE WARNING AND DETECTABLE TAPE

- A. Minimum 5.5 mil composition film containing metalized layer laminated between two layers of inert plastic. Tape to contain the continuous message "Caution Reclaimed Water Line Buried Below." 3" minimum width. Use with all buried pipe and place 6" above piping.

2.04 BRASS PIPE FITTINGS

- A. Furnish as indicated on drawings.

2.05 SPRINKLER HEADS

- A. Replace like in kind, models as indicated herein.
 1. Fixed arc sprinklers: Rainbird 1800 Series SAM pop-up with factory installed check valve and purple collar for reclaimed systems, to match existing campus standard.
 2. Rotor gear driven sprinklers: Hunter PGP, Hunter I-20, Hunter I-25, Hunter I-40, with stainless steel shaft if available, purple collar for reclaimed systems, to match existing campus standard.

2.06 VALVES

- A. Ball valves: manufactured by Wilkins, or equivalent, brass, of size required for line indicated on the drawings. Install as detailed.
- B. Quick couplers: Rainbird, Champion, or approved equal as detailed on drawings. ¾" for potable systems, 1" with purple locking cap for reclaimed.
- C. Automatic control valves: Weathermatic 11000CR-XS24 Plastic Remote Control Valve, 4-volt electric, normally closed-type with flow control and manual override, with Non-potable Alert Solenoid for reclaimed systems as detailed on drawings, to match existing campus standard.

2.07 VALVE BOXES

- A. Purple plastic, Carson, Ametek, Roby or equal, with lockable lid. Install as detailed. One valve per box.

2.08 CONTROL WIRES

- A. Twenty-four volt (24-volt) direct burial type. Size wire according to valve manufacturer; no wire smaller than No. 14 gauge. Provide different colored pilot wires for valves. Provide white common wires.

2.09 OTHER MATERIALS

- A. Provide other materials, not described but required to complete installation, which are new and unused. Review these materials with University's Representative.

PART III - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection

1. Prior to work of this Section, carefully inspect installed work of other trades and verify that such work is complete to point where this installation may properly commence.
2. Verify that irrigation system is installed in strict accordance with pertinent codes and regulations, the original design, the referenced standards, and manufacturer's recommendations.
3. It is the contractor's responsibility to ensure that all irrigation systems surrounding utility installation operations function properly during construction. Inspect routinely and notify University's Representative immediately of problems.
4. Contractor to ensure minimal interruption in irrigation to landscape areas. Inspect plantings regularly and manually water to keep plantings vigorous during construction related interruption of normal irrigation cycles.
5. Inspect planting areas daily during utility trenching operations to determine repairs needed to damaged systems. Replace pipe, valves, valve boxes, heads, control wires, and other equipment, as soon as possible.
6. Contact and coordinate with Ginger Kaufman, Recycled Water/Cross Connect Specialist at Goleta Water District, (805) 879-4652, prior to installation for pre-installation meeting on site to confirm compliance with District standards and specifications.

B. Discrepancies

1. In event of discrepancy between drawings and actual conditions, immediately notify University's Representative.
2. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.

3.02 PREPARATION

- A. Field Measurements: Scaled dimensions are approximate; verify. Make necessary measurements in field to ensure precise fit of items in accordance with original design.
- B. Preparation: Locate underground utilities and protect. Remove rock or other such obstructions or avoid. Repair existing utilities if damaged at no additional cost to University or project.
- C. Review plans and site regularly to anticipate repairs needed to irrigation systems during construction. Contact Rai Calderon, Grounds Superintendent Irrigation Specialist, (805) 451-0263, for As-Built

record drawings of installed systems. Coordinate timing of automated sprinkler systems with grounds maintenance staff during construction.

3.03 TRENCHING

- A. Trench with mechanical trencher or by hand. Notify University's Representative if rock is encountered that cannot be removed in the aforementioned manners.
- B. No wider than necessary to lay pipe (see 3.04 B for depth).
- C. Straight with vertical sides and level bottoms.
- D. Remove rocks, debris, and sharp objects.

3.04 INSTALLATION OF PIPING

A. General

- 1. Lay out piping system in accordance with the Irrigation Plan, while recognizing diagrammatic nature of drawings.
- 2. Where piping is shown on drawings to be under paved areas by running parallel and adjacent to planted areas, intention is to install the piping in planted areas.
- 3. Do not install a line parallel to and directly over another line. Minimum 6" horizontal clearance between irrigation pipes.
- 4. Allow minimum horizontal clearance of 12" from lines of other trades and as required by code.
- 5. Separation: There shall be at least a 10 foot horizontal and 1 foot vertical separation between all pipelines transporting reclaimed water and those transporting potable water, with the potable water pipeline above the reclaimed water pipeline (reference Goleta Water District specifications for exceptions, code requirements, and for separation required between reclaimed and other utilities such as sanitary sewer and storm drain).
- 6. Mark headers on ground prior to layout of lawn heads.

B. Piping Depth: Install piping with at least the following depth:

- 1. Pressure Lines: 18 inches of cover
- 2. Sprinkler Laterals: 12 inches of cover for potable water
- 3. Sprinkler Laterals: 15 inches of cover for reclaimed water
- 4. Pressure lines and sprinkler
- 5. laterals under roadways
- 6. walks or other paving: 24 inches of cover

C. Piping under Paving

- 1. Pipe under new walks and paving shall be laid prior to installation of paving or walks in sleeves. Contractor coordinate with other trades.
- 2. Pipe under existing concrete walks shall be installed by jetting.
- 3. Where cutting or breaking of existing pavement is necessary, secure permission from University's Representative before cutting or breaking pavement and then make necessary repairs and

replacements to approval of the University's Representative at no additional cost to University or project.

- D. Inspection of Pipe and Fittings: Carefully inspect pipe and fittings before installation, removing dirt, scale, and burrs and reaming as required; install pipe with markings up for visual inspection and verification.

E. Plastic Pipe

1. Exercise care in handling, loading, unloading, and storing plastic pipe and fittings.
2. Store plastic pipe and fittings under cover until ready to install.
3. Transport plastic pipe only on a vehicle with a bed long enough to allow pipe to lay flat to avoid undue bending and concentrated external load.
4. Cut accurately in padded vise. Square ends.
5. Repair dented and damaged pipe by cutting out damaged section and rejoining with a coupling.
6. In jointing, use only the specified solvent and make joints in strict accordance with manufacturer's recommended methods; give solvent welds at least 15 minutes set-up time before moving or handling and 24 hours curing time before filling with water.
7. Centerload plastic pipe with a small amount of backfill to prevent arching and whipping under pressure.
8. Install approved dielectric couplings, unions, or fittings wherever two dissimilar metals are connected.
9. CAUTION label facing up.

- F. Detectable Tape: Install 6" above mainline pipe where control wires are not in mainline trenches.

3.05 INSTALLATION OF EQUIPMENT

- A. Quick Couplers: Furnish and install as detailed.

- B. Hose Bibbs: Furnish and install as detailed.

C. Sprinkler Heads

1. Install sprinkler heads removed or damaged during utility installation and in strict accordance with manufacturer's recommendations and details.
2. Align part-circle heads so that no spray hits building wall or windows, and that spray be in proper relation to adjacent paving, headers, or curbs as detailed.
3. Adjust spray nozzles so that there will be a minimum amount of overspray, and so that entire set will be as evenly balanced as possible.

- D. Valves: Furnish and install in locations where valves are removed or damaged during utility construction according to details on plan.

- E. Valve Boxes: Furnish and install as detailed valve boxes impacted during construction. Contractor may re-use un-damaged boxes.

F. Automatic controllers: Verify location of Automatic controllers and coordinate irrigation schedules during construction. Coordinate with General Contractor, University's Representative, and University Grounds Maintenance Staff. Provide and install new wiring to controllers if damaged during construction.

G. Control Wires

1. Install according to manufacturer's directions.
2. Tape wire together minimum 12'-0" O.C. Do not tape to side of pressure pipe. In PVC sleeve under walks or paving, wires may be in same sleeve as pipe; do not tape to pipe in sleeve.
3. Encase in plastic conduit wire passing under future or existing paving, construction, etc., extending conduit at least 12" beyond edges of the paving or construction.
4. Install control wires in common trench under pressure line wherever possible.
5. Provide looped slack at valves and snake wires in trench to allow for contraction.
6. Control wire splices as a result of damaged wire in utility trenches shall be spliced with Scotch-Lok. Install splices in 6" minimum diameter valve box.

3.06 BACKFILLING

A. Backfill only after review by University's Representative for all systems, and University's Representative and Goleta Water District Reclaimed Water Inspector for reclaimed irrigation systems. Backfill in the cool of the day; backfill with fine materials free of rocks or sharp objects tamped to 85% compaction; 90% under paving. Leave grade flush and smooth.

3.07 MAINTENANCE

A. Continuously maintain involved areas of contract during progress of work and during Maintenance Period of contract. Work includes: raising and lowering of heads to compensate for lawn growth, cleaning and adjustment of heads and checking screens for clogging and cleaning, insuring that any leaks are fixed immediately, watering landscape by hand with hose attached to quick couplers in areas temporarily without irrigation due to construction activities, and hand watering under critical root zone of trees impacted by utility trenching.

3.08 TESTING AND OBSERVATION

A. Forty Eight (48) hour notice required by University's Representative for observations.

B. Comply with all specifications required by the Goleta Water District.

C. Closing in Work

1. Do not allow or cause work of this Section to be covered up or enclosed until it has been reviewed by University's Representative.

D. Flushing

1. Before backfilling main line, and with all control valves in place, but before lateral pipes are connected, completely flush and test main line and repair leaks.
2. Flush out each section of lateral pipe and drip tubing before sprinkler heads are attached.

E. Testing

1. Make necessary provisions for thoroughly bleeding line of air and debris.
2. Before testing, fill line with water for a period of at least 5 hours.
3. After valves have been installed, test pressure lines with fittings exposed for 5 hours at 125 pounds pressure with gauge on pump, in presence of University's Representative.
4. Coverage Test in presence of University's Representative: adjust valves and align sprinkler heads. Should it be determined by University's Representative that adjustments of irrigation equipment would provide more adequate coverage, make necessary arrangements to have adjustments accomplished prior to planting. This includes changes of nozzles and addition or deletion of sprinklers. Do not commence planting operations until entire irrigation system operates properly.

F. Testing for Reclaimed Water Lines

1. Hydrostatic Test: flush and test water piping and valves, before backfilling trenches, to a hydrostatic pressure of not less than 125 psi. Repair all leaks when welded joints have cured at least 5 hours. Piping may be tested in sections to expedite work. Remove and repair piping, connections, valves which do not pass hydrostatic testing. Pressure loss not to exceed 5 psi in two hours. Repair all leaks.
2. Cross-Connection Testing: Test the potable water system and reclaimed water irrigation system to verify that no cross-connections exist. Testing shall be performed as follows in the presence of the University's Representative and Goleta Water District Cross Connection Specialist with assistance from the site maintenance supervisor:
 - a. Turn off all reclaimed water service at the meters serving the site.
 - b. Manually actuate all zone valves.
 - c. Operation of any sprinklers is an indication an unallowable cross-connection exists.
 - d. In the event a cross-connection does exist, the cross-connection shall be disconnected and the lines capped. It shall be verified that the potable water system and reclaimed water system operate independently. The Water Reclamation Inspector and/or the Cross-Connection Inspector will decide when all cross-connection testing is complete.

G. Final Review

1. Thoroughly clean, adjust, and balance all systems.
2. Demonstrate entire system to University's Representative proving that remote control valves properly operate from controller, that heads are properly adjusted for radius and area of coverage, and that the installed system is workable, clean, and efficient.
3. Final Acceptance will be given as per Section 014000 only when the plantings and irrigation system are acceptable, and when signed Guarantee and valve keys have been delivered to University's Representative.
4. 72 hours notice required for Final Review.

END OF SECTION

SECTION 32 90 00

PLANTING

PART I - GENERAL

1.01 DESCRIPTION OF WORK

- A. This section specifies requirements for landscaping put-back as shown on drawings and as specified herein.

1.02 RELATED DOCUMENTS

A. General

- 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections

- 1. Section 32 80 00: IRRIGATION
- 2. Section 32 93 43: TREES

1.03 QUALITY ASSURANCE

A. Source Quality

- 1. Provide plant materials conforming to State of California grading code of Nursery Stock, No. 1 grade, for quality and size. Use only nursery-grown stock.
- 2. Plants: subject to review by University's Representative at place of growth or storage yard and upon delivery for conformity to specifications. Such review shall not preclude right to review and of rejection during progress of work.
- 3. Nomenclature: per Sunset Western Garden Book, 2007 or current nursery practice.

B. Requirements of Regulatory Agencies

- 1. Perform work in accordance with all laws, codes and regulations required by authorities in furnishing, transporting and installing materials.
- 2. Certificates of inspection required by law for transportation shall accompany invoice for each shipment of plants. File copies of certificate with University's Representative after review of material.

C. Continuous Superintendence

- 1. Have one person responsible for work specified in this section continuously on job site throughout installation.

1.04 SUBMITTALS

A. Samples

1. Soil amendments with analysis prior to materials being brought on job site.
2. Submit photos of plants, 15 gallons and larger, from other than local nurseries, with person standing next to trees for scale. Label photo with following information:
 - a. Botanical and Common Name
 - b. Name, Location and Phone Number of Nursery
 - c. Size of Container
 - d. Trunk Height to Lowest Branching
 - e. Caliper at 3'-0" from ground

B. Invoices

1. Copies of invoices for soil amendments, fertilizers and materials specified herein. Invoice shall contain job site name, job site address, contractor's name, materials delivered, quantities delivered and date.

C. Soil Testing

1. Imported fill: provide soil analysis from composites of borrow area prior to delivery on job site.
2. Imported topsoil: provide soil analysis performed by a certified testing laboratory prior to delivery to job site. Identify source location, percentages of silt, clay, sand, organic matter, pH, mineral and plant nutrient content of soil. Soils unsuitable for planting will be rejected.
3. Provide soil analysis expressed in parts per million including the following:

a. Organic Content	i. Zinc
b. Nitrogen	j. Manganese
c. Phosphorous	k. Copper
d. Potassium	l. Iron
e. Magnesium	m. Boron
f. Calcium	n. pH
g. Sodium	o. ECe
h. Sulfur	
4. Analysis: performed by certified testing laboratory. Soils deemed unsuitable for planting will be rejected.

5. Suitability of soil and chemical deficiencies will be determined by University's Representative. Deliver test results to University's Representative.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Furnish standard products in manufacturer's containers bearing original labels showing quantity, analysis and name of manufacturer.
- B. Deliver plants in closed trucks or wrap specimens to prevent windburn. Windburned plants will be rejected.
- C. Provide protection for plants and products from weather conditions or other adverse conditions.
- D. Deliver plants with legible identification labels. Label trees, bundles of containers of like shrubs, and groundcover plants. Use durable waterproof labels with water-resistant ink which will remain legible for at least sixty (60) days.
- E. Lift plants by container only. Plants with broken limbs, loose root balls, or loose trunks will be rejected.
- F. Provide 24-hour advance notification of delivery schedule so material may be reviewed upon arrival at job site. Remove unacceptable material from the job site immediately.
- G. Deliver pesticides and soil fumigants to job site in original unopened containers. Containers that do not have legible label that identifies Environmental Protection Agency and State registration number, and manufacturer's registered uses will be rejected. Poison may be used only with University's Representative's approval.
- H. Do not store soil sterilant and pesticides with other landscape materials. Store in locked separate structure or vehicle.

1.06 JOB CONDITIONS

- A. Existing conditions: base bids on following conditions:
 1. That no pipes or artificial obstructions, other than those indicated will be encountered. Notify University's Representative if unforeseen obstructions are encountered.
 2. That all utility trenches will be thoroughly watered after initial backfill and compaction by utility contractor and that additional top soil will be placed by landscape contractor in trench locations to replace settled soil. Reference Section 312333 Trenching, Backfilling & Compacting for Utilities.
- B. Coordination
 1. Coordinate and cooperate with other Contractors to enable work to proceed as rapidly and efficiently as possible.
- C. Cleanup
 1. Keep areas clean, neat and orderly.
 2. Clean paved surfaces at the end of each day.

3. Remove deleterious materials and debris prior to Maintenance Period.

1.07 SUBSTITUTIONS

- A. Locate plants as soon as job is awarded.
 1. Inform University's Representative of unavailable plants at least two weeks prior to anticipated planting.
 2. Be prepared with suggested available alternates and price difference.
- B. University's Representative will select substitutes.
- C. Refer to Division 1, Section 01630 for substitutions of materials other than plants.

1.08 GUARANTEE

- A. Guarantee plants 15 gallons and larger for one (1) year after Final Acceptance. Replace dead plants and plants not in vigorous, thriving condition as soon as weather permits and on notification by University's Representative. Replace plants which have partially died, thereby damaging shape, size or symmetry.
- B. Replace with same kind and sizes as originally planted, at no cost to University or project. Provide one (1) year guarantee on replacement. Protect irrigation system and other piping, conduit or other work during replacement. Repair damage immediately at no cost to University or project.
- C. Guarantee: Refer to section 01740, GUARANTEES, WARRANTIES, BONDS, SERVICE & MAINTENANCE CONTRACTS, for submittal form.

PART II - PRODUCTS

2.01 PLANTS

- A. Provide healthy and vigorous, well-branched and densely foliated plants when in leaf; free of disease, insect pests, eggs or larvae; with healthy, well-developed root systems; and free from physical damage or adverse conditions that would prevent thriving growth.
- B. Provide plants true to species and variety and conforming to measurements specified. Provide standard sized plants.
- C. Provide container stock grown for at least six (6) months, but not over two (2) years in containers in which they are delivered. Cracked or broken root balls shall not be planted.
- D. If a plant species is not available, University's Representative will select substitute. (Refer to 1.07 Substitutions.)
- E. Do not prune prior to delivery.
- F. Match in size plants of same species in rows.
- G. Do not use root-bound, sunburned, or wind-tattered plants. Several plants of each species shall be uncanned and checked for root growth. In event that sample plants reviewed are found to be defective, entire lot or lots of plants represented by defective samples may be rejected. Such plants shall be replaced with new plants conforming to the requirements of this section at no cost to University or project.

- H. In event of disagreement as to condition of root system, root conditions of furnished plants will be determined by removal of earth from roots on not less than two plants or more than 2 percent of total number of plants of each species or variety. Where plants are from several sources, roots of not less than two plants of each species or variety from each source will be reviewed. If sample plants are defective, entire lot or lots of plants may be rejected. Plants rendered unsuitable for planting due to this inspection will be considered samples and provided at no cost to University or project.
- I. Guarantee that plants are species called out on plan. Should it be determined by University's Representative within one year of Final Acceptance that incorrect species was installed, replace with correct species at no additional cost to University or project. Install replacement plants one container size larger than called out on plans, to compensate for lost growing time.

2.02 LAWN

- A. Marathon II Fescue Sod- Or equal.

2.03 TOPSOIL

- A. Natural, fertile, friable, sandy loam, characteristic of productive soils in the vicinity, 6.5 to 8.0 pH.
- B. Free of weeds, seeds, bermuda and kikuyu grass stolons, subsoil, clay lumps, stones, roots, sticks, substances 1-1/2" or more in diameter and debris.
- C. Do not deliver or spread while in muddy condition.

2.04 FERTILIZER AND SUPPLEMENTS

- A. Gro-Power Plus, 5-3-1, or equal manufactured by Southern California Organic Fertilizer Company.
- B. Pre-sod Fertilizer: 16-20-8 commercial fertilizer.
- C. "Liquinox-start" or equal Vitamin B-1 supplement for all trees and shrubs 5-gallon and larger.

2.05 SOIL AMENDMENT

- A. Pre-emergents: may not be used without University's Representative's approval.
- B. Bone meal: standard horticultural brand.
- C. Gypsum: Agricultural grade; minimum 98 percent calcium sulphate.
- D. Nitrogen-fortified shavings: redwood, fir or cedar with minimum 0.40 percent nitrogen based on dry weight. Provide one of following or equivalent:

<u>Product Name</u>	<u>Source</u>
"Fir-Humus-Deck Bark" or	Agri-Chip
Nitrogen-fortified Redwood Shavings	(805) 962-7005
"Forest Humus" or	Agri-Chip
Nitrogen-fortified Redwood Shavings	(805) 962-7005

2.06 PREPARED BACKFILL MIX

A. Prepare as follows for trees and shrubs:

1. parts topsoil
2. part nitrogen-fortified shavings
3. 5 lbs Gro-Power Plus per cubic yard of backfill

2.07 PESTICIDES

- A. Do not use pesticides containing chlorinated hydrocarbons (DDT, Chlordane, Lindane) or organic phosphates (Parathion) or paraquat.

2.08 MULCH

- A. Wood chippings: 2" clean chips, with no trash, debris, or weed seeds. Submit sample to University's Representative for approval.

2.09 HEADERBOARD

- A. Replace in kind, treated wood or recycled plastic to match abutting, or as indicated on plan.
1. Wood preservative shall not contain chromated copper arsenate or other carcinogenic or toxic materials. Acceptable treatments include 'Wolmanized' treated wood, honey brown in color, sodium silicate, or copper azole. Submit MSDS to University's Representative prior to delivery of wood to project site.
 2. Reference details and plans.

2.10 STAKING MATERIALS

- A. Rough sawn redwood, 2x2x8, construction grade or Lodge Pole pine, fully treated with Copper naphthenate Wood Preservative, 2-inch (minimal nominal size) diameter by 8 feet long, no split stakes.
- B. Staking Materials: Wire-pliable, 12-gauge galvanized; hose 1/2-inch rubber or nylon reinforced plastic straps in figure 8 super tree tie or submit sample.

2.11 WEED BARRIERS

- A. 'Weed Stop' or equal, 6' x 200' roll.

2.12 GRAVEL

- A. 3/8" washed pea gravel to match existing. Submit sample to University's Representative.

2.13 DECOMPOSED GRANITE

- A. Stabilized D.G., 'Gail's Gold' in color with clay consistency to form firm surface when rolled, 1/4", medium duty, 12 lb. Available from Gail Materials, (909) 279-1095. Submit sample to University's Representative.
1. Decomposed Granite: Material- derived from the crushing and screening of naturally friable granite. Material shall conform to the grading requirements in section 200-2.7.2, Disintegrated Granite, of the Standard Specifications for Public Works Construction , "Green Book", 2006 edition or most current. The sand equivalent shall be a minimum of 30 and the R-Value shall be a minimum of 70.

2. Stabilizer: Natracil Organic Polymer binder/solidifying emulsion pre-blended prior to delivering to the site. Rate of blending shall be 14 lbs polymer binder per ton of decomposed granite as provided by Gail Materials or equally qualified distributor.

PART III - EXECUTION

3.01 SCHEDULING

- A. Commence lawn and plant material put-back work upon completion of utility installation and trench backfill by Utility contractors. Coordinate work closely with General Contractor and University's Representative.
- B. Continuously observe and maintain all put-back planting areas per section 3.14 during installation phase of entire project scope of work. Start of 90 day maintenance will begin per section 3.13 after all replacement plant material has been installed for the entire project scope.

3.02 MEASUREMENT

- A. Scaled dimensions are approximate: verify.
- B. Inform University's Representative of discrepancies between drawings and field conditions.
- C. Using a transit, verify that landscape areas can be graded to drain per code and the following. If this cannot be accomplished, notify the University's Representative in writing.

3.03 FINISH GRADING

- A. Thoroughly water utility trench after initial backfill and compaction by utility contractor. Place additional top soil as needed if settlement occurs to bring trench grade flush with surrounding grade.
- B. Provide positive surface drainage of planted areas. Inform University's Representative of discrepancies between drawings, specifications and field conditions which preclude establishing positive drainage.
- C. Prior to soil preparation, remove all rocks over 1-1/2" in diameter, sticks, plaster, concrete, debris and foreign growth from planting areas.
- D. Review trenched areas again after plant installation for settlement, and add soil and raise plants as necessary. Establish finish grade in planting areas after soil preparation, utility trench settlement review and planting as shown on drawings. Drain planting areas away from buildings at a minimum of 2% for the first 5 feet. Grade against building shall be a minimum of 6" below the bottom of woodsiding or sills.
- E. Establish finish grade at planter areas bordering curbs, headers, and walks 1" to 1-1/2" below finished grade of bordering curbs, headers and walks. Remove or add topsoil as necessary to establish finish grade.

3.04 SOIL PREPARATION

- A. Step 1 - After review of rough grading with University's Representative.
 1. Cultivate to depth of 9".
 2. Apply gypsum at rate of 150 lbs per 1000 square feet. Do not cultivate.
 3. Water to leach gypsum through top 9" of soil.

B. Step 2 –

1. Apply the following materials and cultivate to a depth of 4" for lawn and 6" for planters.

<u>Material</u>	Rate per 1000 Sq. Ft.	Rate per 1000 Sq. Ft.
	<u>Lawn</u>	<u>All Other Areas</u>
Nitrogen-fortified wood shaving	4 cubic yards	3 cubic yards
Gro-Power Plus	75 lbs	25 lbs

2. Add soil to bring grade to one inch below walks, curbs and headers or to bring grade of utility trenches flush with adjacent finish grade.

3.05 HEADERBOARDS

- A. Replace full sections of headerboard in locations where headers are disturbed by utility trenching. Review layout with University's Representative prior to installation. Install straight to line and grade, and flush to existing headers. Backfill on both sides and compact to density of undisturbed soil.

3.06 TREE AND SHRUB PLANTING

- A. Contractor shall prune dead wood from adjacent shrubs as necessary, and remove any additional plants killed or severely damaged by utility installation. Determine the quantity of plants to replace plants removed or damaged because of utility trenching activities based on species and plant spacing listed in plant legend on the drawings.

- B. Prior to excavating pits, place trees and shrubs in planting area. Request review by University's Representative.

- C. Excavate pits twice diameter of container and 6" greater in depth. Dispose of unsuitable material encountered.

- D. Broadcast bone meal over bottom of pit and scratch into soil at following rates:

1. Boxed Plants	1 cup/foot of box
2. 15-gallon Plant	1 cup
3. 5-gallon Plant	1/2 cup
4. 1-gallon Plant	1/4 cup

- E. Add backfill mix to pit and tamp to compact.

- F. Center plants in pits and fill pits with backfill mix. Set plants so top of root ball is level with finish grade when settled.

- G. Add "Liquinox-Start" to 5-gallon and larger shrubs and trees after planting at the rate of 1 tablespoon per gallon of water. Apply at following rates:

1. Boxed Plants	2 gallons per foot of box
2. 15-gallon Plants	3 gallons
3. 5-gallon Plants	1 gallon

- H. Stake trees immediately after planting. Windblown or broken trees not properly staked will be rejected. Details are general, adjust to fit individual trees.
- I. Pruning of new plant material: remove dead branches and weak crotches. Thin excessively dense trees as determined by University's Representative.
- J. Cleanup: rake shrub areas smooth and remove debris.

3.07 GROUND COVER

- A. Space as indicated on drawings in triangular pattern in parallel rows. Plant 1/2 required spacing from edge of bed, 24" from trees, 36" from shrubs.
- B. Pull from flats gently, retaining soil around roots. Plant within one hour after removal from flat.
- C. After planting 100 plants, water to root depth

3.08 SOD PLACEMENT

- A. Prepare soil as per 3.03.
- B. Apply pre-sod fertilizer at a rate of 3 lbs per 1000 square feet.
- C. Rake, drag, float and roll area to be sodded to produce true, uniform bed. Remove deleterious materials.
- D. Prior to sodding, verify positive drainage for planted areas with instrument. Demonstrate drainage to University's Representative.
- E. Lay sod by hand so that edges of blocks touch, top dress with sandy loam, rake in to fill joints, and roll to eliminate undulations. Do not deliver more sod than can be placed during the same day,
- F. Water to full depth of roots.
- G. Protect lawn from damage by erosion and trespass. Erect barriers where necessary.

3.09 MULCH AND WEED BARRIER

- A. Install weed barrier in all planting areas except lawn or as noted after soil amendments have been added and final grading has been completed. Install weed barrier to fully cover mulched areas.
- B. Install weed barrier per manufacturer's instructions. Overlap edges 12" minimum for water drainage in the direction of water flow. Pull fabric tight and staple with 12g galvanized wire landscape staples at 24" o.c. Fold fabric over 12"-18" at planter edges and staple tight with 12g galvanized wire landscape staples at 24" o.c.
- C. Set out plants in designated locations and review with University's Representative and Grounds Superintendent for final placement.
- D. Cut weed barrier in an "X" at planting location and peel back four corners.
- E. Excavate planting area to appropriate depth
- F. Place plant material in pit as per specifications.

G. After completion of irrigation system repairs (if necessary), operate and inspect entire system as per specification. If inspection is satisfactory, install 3" mulch depth throughout shrub bed so the final mulch grade is flush with top of concrete mow strip, header, or walks

H. Keep all mulches away from plant stems. If soil stays too wet, uncover root balls.

3.10 GRAVEL AND WEED BARRIER.

A. Install weed barrier per section 3.09.

B. Place gravel neatly to a 2" depth and match grade of surrounding headers or concrete and to cover all weed fabric.

3.11 DECOMPOSED GRANITE

A. Compact Class II Base to 95% relative compaction with small non-riding drum roller.

B. Decomposed granite (D.G.) material shall be installed to a final depth of 4" in 2" lifts upon an even layer of class II roadbase as specified on details.

C. Spread and thoroughly moisten decomposed granite to optimum moisture content for compaction.

D. Grade and smooth.

E. Compact decomposed granite to 90% relative compaction using a small non-riding drum roller per manufacturer's specifications.

F. Provide traffic barriers as required to protect newly installed decomposed granite.

3.12 PROTECTION AND CLEANUP

A. Dispose of empty containers off site at end of each day.

B. Clean paved areas.

C. Clean walks, walls, and windows muddied by planting operations.

D. Provide traffic barriers as required to protect newly planted areas.

3.13 REVIEW/OBSERVATION

A. Request review at least 2 days prior to anticipated review date.

B. Required review observations by University's Representative:

1. Fine grading of all areas prior to planting.
2. Prior to planting with plants arranged per drawings.
3. At each review, a punch list will be generated by the University's Representative. Prior to the next review date, punch list items shall be completed. Failure to comply with the execution of the punch list may result in re-doing of areas to correct problems.

C. Final Review prior to starting Maintenance Period.

D. When installation and punch list items are complete for the entire utility installation project scope.

E. Maintenance Period Reviews

1. Thirty (30) days into Maintenance Period.
2. Sixty (60) days into Maintenance Period.
3. Ninety (90) days into Maintenance Period.
4. Other times as may be required.
5. At each review, a punch list will be generated by the University's Representative. Items on the punch list shall be completed before the next review. Failure to comply, may result in extension of the 90-day Maintenance Period. Example: if punch list from Final Review is not completed for 30-day walkthrough, Maintenance Period will be extended 30 days.

F. Review for FINAL ACCEPTANCE

1. At the 90 day review if the job is acceptable to University's Representative and University.
2. If unacceptable at the 90 day review, another time will be scheduled

3.14 MAINTENANCE PERIOD

A. Continuously maintain plants after installation until Final Acceptance.

B. Maintenance Period: 90 days from completion of all punch list items from the Final Review.

C. Maintenance Schedules

1. Groundcover and Shrub Beds
 - a. Weeding: remove weeds and foreign grasses at least once a week.
 - b. Cultivating: as required to keep soil surface loose.
 - c. Replenish mulches to full depth after cultivation.
2. Trees
 - a. Raise trees that settle below grade to established elevation.
 - b. Adjust stakes and guys to keep trees upright, erect and compensate for growth.
 - c. Remove weeds and foreign grasses from basins.
3. General
 - a. Pruning: prune dead or broken branches from trees and shrubs.
 - b. Grade Adjustments: fill to original grade areas that have settled or eroded around trees and shrubs, and at lawn or planters in utility trench areas.

- c. Poison Bermuda and/or Kikuya grass in accordance with manufacturer's instructions.
- d. Notify University's Representative of each maintenance trip.
- D. Poison or trap gophers or ground squirrels and repair damage within seven (7) days of notification.
- E. Replace dead, stolen, vandalized, damaged, or dying plants within seven (7) days of notice. Assume a 10% replacement of plants 5 gallons and smaller due to theft and vandalism. 15 gallon and larger are guaranteed for 1 year, regardless of cause.
- F. Adjust sprinkler heads in each area and zone of exposure so that optimum amount of water is applied according to capabilities of equipment and system.
- G. Replenish mulch to original depth in shrub and groundcover areas prior to end of maintenance.

3.15 REPAIR AND REPLACEMENT

- A. Repair and/or replace damaged property and improvements.
- B. Replace unacceptable plants with same species, size and guarantee as specified in this Section.

3.16 FINAL ACCEPTANCE

- A. Final acceptance of project will be given by University's Representative upon completion of work, punch list items and Maintenance Period excluding replacement of plants under Guarantee Period. Upon Final Acceptance, University will assume maintenance of work.
- B. If the installation is phased, Final Acceptance may be given on an area basis at different times.
- C. If the Contractor waits until the end of maintenance to re-plant bare lawn, groundcover, etc., the Final Acceptance for a portion or the entire project may be continued until the newly planted areas are as established as originally planted areas.

END OF SECTION

SECTION 32 93 43

TREES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Tree removal.
- B. Tree and root pruning and other related arboricultural work.

1.02 RELATED SECTIONS

- A. General
- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- C. Related Sections
 - 1. Section 32 80 00: IRRIGATION
 - 2. Section 32 90 00: PLANTING

1.03 QUALIFICATIONS

- A. Certified Arborist: As a minimum, the tree work crew supervisor(s) must be a current International Society of Arboriculture (ISA) Certified Arborist. Their names and certification number(s) must be included in the bid document to be considered for this project. Any change in the status of the "Certified" individual(s) during the life of this contract must be reported to the University's Representative at the time of occurrence. All Certification numbers will be verified through the ISA's office.

PART 2 - PRODUCTS

2.01 QUALITY CONTROL

- A. Inspection and testing shall be performed under the provisions of Division 1.

PART 3 - EXECUTION

3.01 PRUNING AND REMOVAL

- A. General Conditions
 - 1. No tree shall be pruned in such a manner that its health will be irreparably impaired.
 - 2. Tree work conducted by certified tree workers shall be according to the requirements of the latest revision of the American National Standards Institute, Inc. (ANSI) A-300 Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices”
 - 3. No severed or partially cut branches shall be left in the upper portion of any tree being worked on after the tree workers have left the work site.

4. All areas where tree work is performed shall be barricaded or otherwise kept safe for the public while pruning or removing trees. Orange warning cones, caution tape, and physical barricades shall surround work site and prevent entry to work site by non-workers. At least one responsible tree worker shall serve to coordinate safe operations on the ground when work operations are in progress.
5. All branches or other debris resulting from any tree pruning or removing shall be removed from the work area promptly. Work area shall be kept safe and clean at all times.
6. All tree-based waste material shall be chipped and delivered to UCSB Green Waste Facility. Tree chipping pieces shall not exceed 3”.

B. Tree Pruning

1. All pruning as applicable to project shall follow National Arborist Association Class II Pruning Standards for Shade Trees and the ANSI A-300 For Tree Care Operations – Tree Shrub and Other Woody Plant Maintenance, Standard Practices, Pruning Standards, an overview of which includes the following:
 - a. Remove all dead, dying, diseased, interfering, objectionable, and weak branches.
 - b. Remove all interior interfering branches, and one of all crossed or rubbing branches where practicable so the removal thereof will not have large holes in the general form of the tree.
 - c. Remove one branch of all structurally weak "V" crotches occurring along the main trunk or developing within the tree crown, particularly in smaller trees. Special attention shall be given to the effect removal of such branches will have on the ultimate form of the tree.
 - d. Remove trunk suckers and water sprouts, especially where they are present above the upper one half (1/2) of the tree.
 - e. Crown Cleaning: Remove dead, dying, diseased, crowded, weakly attached, low vigor branches and water sprouts from the tree crown. Remove deadwood greater than one inch in diameter.
 - f. Crown Thinning: Selectively remove branches to increase light penetration and air movement, and to reduce weight. Thinning shall be limited to 15% or as indicated on plans.
 - g. Topping: the reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit is not an acceptable pruning practice and shall not be performed.
 - h. Lion's Tailing: the removal of an excessive number of inner, lateral branches from parent branches is not an acceptable pruning practice and shall not be performed.
2. Attention is to be given to the eventual symmetrical appearance of the trees. Appropriate pruning shall be done in order to maintain a tree-like form typical of the species of the tree being trimmed.
3. All final cuts shall be made sufficiently close to the trunk or parent limb, without cutting into the branch collar or leaving a protruding stub. Excessively deep flush cuts which produce large wounds or weaken the tree at the cut shall not be made. Pruning tools and saws shall be kept sharpened to result in final cuts with smooth wood surface and secure bark remaining intact. All trees six inches or less in diameter shall be pruned with hand and/or hydraulic pruning tool only.

4. It is necessary to precut branches that are too heavy to handle to prevent splitting or peeling the bark. Where necessary to prevent tree, bystander, or property damage, branches shall be lowered to the ground by proper ropes or equipment.
5. On trees known to be diseased, tools are to be disinfected with methyl alcohol at 70% (denatured wood alcohol diluted appropriately with water) or bleach solution after each cut and between trees where there is known to be a danger of transmitting the disease from tools.
6. Equipment that will damage the bark and cambium layer should not be used on or in the tree. For example, the use of climbing spurs is not an acceptable work practice for tree pruning operations on live trees.

C. Root Pruning

1. Definitions:
 - a. Critical Root Zone: a circle scribed about the center of the tree having a radius of one foot for every inch of trunk diameter at breast height (DBH).
 - b. Root Crown: The point at which the root and stem of the tree meet and the primary vascular anatomy changes from that of a stem to that of a root.
2. Root pruning shall occur concurrent with site clearing or trench excavation in all areas where new utility installation occurring near trees requires pruning or removal of roots.
3. All root removal shall be limited to the extent possible. No surface roots over 2" in diameter shall be cut within the tree critical root zone.
4. Installation of utility lines shall be performed by boring or tunneling below the surface tree roots within the critical root zone in order to preserve the main woody anchorage and feeding roots.
5. Roots shall be cut cleanly with a mechanical trenching device similar to a root saw, followed immediately by a clean-cut hand pruning of all roots greater than ½" and less than 2" in diameter. All pruned/cut roots shall be covered as soon as possible with topsoil, mulch, or other organic medium or covered to the extent possible with 6 mil plastic or wet burlap to retard soil and root dehydration. Maintain adequate moisture to surface feeder roots.
6. Beginning two weeks prior to root pruning and through substantial completion of the project, all impacted trees shall be watered by mechanical irrigation or manually at a rate equivalent to one inch of water per week, adjusted as required for local weather conditions.

D. Tree Removal

1. The Contractor shall refrain from the practice of "free falling" the trees. All trees shall be limbed out prior to the final cutting of the trunk. Concrete walks, lights, streets, planter walls, site furnishings, and other manmade structures and plant materials shall always be protected from the impact of falling wood by use of tree or limb ground supports. Ropes or other mechanical devices shall be used to lower all limbs of sufficient size that may cause damage to other trees or surrounding property.
2. Limbs and trunks temporarily placed in the construction site on Campus shall be placed in such a manner as to eliminate any obstruction to motor vehicles and pedestrians. Contractor shall store deleterious material within construction cone boundary and remove it at the end of each day. Brush and limbs overhanging a curb or pavement shall not be acceptable and under no circumstances shall these materials be allowed to remain on Campus overnight.

3. All infectious diseased or parts of dead trees possibly harboring vector of infectious diseases shall be removed from the Campus grounds and shall become the Contactor's responsibility to ensure destruction of the diseased or dead wood in accordance with the State statutes and local ordinances.
4. Trees in the line of utility trenches called out for removal shall be removed by mechanical means. Contractor shall either pull out or stump grind trees adjacent to trenches called out to be removed on the plans. Stump grinding shall be performed at least 6" below finish surface grade. Fill in excavation pits or grind area with soil and install plant material as directed per plans.

3.02 SITE CLEAN-UP AND REPAIR

- A. Site Clean-up: The Contractor shall clean up the site and remove and dispose of all debris at the end of each day's operation. Site cleanup shall include removal of sawdust, small twigs, chips, leaves, trunks and limbs from all lawns, walks, roads, or other areas with appropriate tools for the job.
- B. Repair: The Contractor shall take all necessary precautions to eliminate damage to adjacent trees, shrubs, lawns, or other property. Holes made in the lawn, regardless of size, shall be filled with sandy loam soil and sodded per planting specifications. Vegetation surrounding a tree called out for removal/pruning shall be disturbed as little as possible. Any damaged or killed plants shall be replaced in kind.

END OF SECTION

SECTION 33 40 00

STORM DRAINAGE AND SEAWATER WASTE UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Site storm drainage and seawater waste piping, fittings, accessories, and bedding.
- B. Manholes and catch basins.

1.02 REFERENCES

- A. Standard Specifications for Public Works Construction (Green Book), 2012 edition.
- B. ASTM Standards.

1.03 RELATED SECTIONS

- A. Section 31 23 33– Trenching and Backfilling.
- B. Section 33 44 19 – Catch Basin Insert Utility Storm Drain Filters

1.04 SUBMITTALS

- A. Submit the following in accordance with Division 1.
 - 1. Product Data: Provide data indicating pipe, pipe accessories, and manhole and catch basin.
 - 2. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
 - 3. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 PROJECT RECORD DOCUMENTS

- A. Submit Record Drawings. Accurately record locations of pipe runs, connections, catch basins, fossil filter, manholes and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.06 FIELD MEASUREMENTS

- A. Verify that field measurements and elevations are as indicated on Drawings.

1.07 COORDINATION

- A. Coordinate the Work with connection to existing storm drain system and seawater waste lines.

PART 2 PRODUCTS

2.01 PIPE MATERIALS

- A. High Density Polyethylene Pipe (HDPE): ADS product high-density polyethylene pipe, sure-lok watertight product, or equal. HDPE pipe shall conform to ASTM D3212 when tested according to the method described in ASTM D3212. Pipe and fitting shall conform to AASHTO M294 types, and materials meet ASTM D3350 minimum cell classification 335420C. Pipe shall be able to sustain H25 loading and strict water tight.

2.02 PIPE ACCESSORIES

- A. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required. Fittings shall be watertight.
- B. Trace Wire: Magnetic detectable conductor, plastic covering, imprinted with "Storm Drain Service" and "Seawater Waste Pipe" respectively in large letters.
- C. Warning Tape: Install 3-inch wide continuous warning tape over top of pipe and 18-inches below top of grade. Tape shall be printed colored plastic strip style which cannot be scraped off or erased with aluminum foil-backed double-laminate polypropylene film, non-adhesive.

2.03 CATCH BASINS AND MANHOLES

- A. Grates and Frames: Galvanized grates and frames manufactured by Brooks Company, or Alhambra Foundry Co., or equal. Use traffic grate for all traffic path and paved areas. Use heel proof grate with maximum 1/4" openings in both directions for all grates located in walkway areas. If grates have elongated openings, the grates shall be oriented so the long dimension is perpendicular to the dominant direction of travel.
- B. Concrete Catch Basins: Manufactured by Brooks Company, or equal. Contractor may submit an equivalent cast-in-place concrete catch basin to University for approval in accordance with Division 1. The University's Representative shall have the final decision as to the acceptance of such cast-in-place catch basin.
- C. Manholes: Manufactured by Brooks Company, Midstate Concrete, Precon, or equal.
 - 1. Frame and Cover: Shall be ductile iron and conform to ASTM A536-72 material requirements and shall have pry hole on edge and lift hole off center.
 - 2. Cover shall be marked with letter D in the center of the cover for storm drain; and marked with letters SWW for seawater waste line. Bearing surface on frame and cover shall be machined and cover shall seat firmly into frame without rocking.
 - 3. Barrel and Cone: Manhole barrel and cone sections shall be constructed of precast reinforced concrete in accordance with the requirements of ASTM 478 and shall be designed for H-25 loads. Dimension and details shall be as shown on Plans and Details. Barrel and cone shall be free of cracks, chips or excessive voids.
 - 4. Base: Manhole bases, unless otherwise specified, shall be constructed of poured in place SSPWC class 560-C-3250 concrete with a 3,250 psi twenty-eight (28) day compressive strength. Base shall be cured a minimum of twenty-four (24) hours before placement of first barrel section. When specified and approved precast manhole bases may be used. Precast bases shall be constructed of concrete with twenty-eight (28) day compressive strength of 3,250 psi. Precast bases shall be free of chips, cracks and excessive voids.
 - 5. Steps: No steps shall be constructed for manholes.

6. Sealant: Sealant for section joints on manholes shall be butyl rubber preformed for manhole joint application and shall be placed only after surface has been thoroughly cleaned.

2.04 CONCRETE

- A. All concrete shall be Class 560-C-3250 per Standard Specifications for Public Works Construction, unless indicated otherwise on the Drawings.

2.05 BEDDING MATERIALS

- A. Bedding material shall be sand with a minimum Sand Equivalent S.E. of 30.

2.06 PRECAST CONCRETE STRUCTURE

- A. Concrete: Portland Cement Type 2; 28-day concrete compressive strength $f'_c=4500$ psi.
- B. Reinforcement: Grade 60 ($f_y=60,000$ psi) per ASTM A615 and A706.
- C. This structure shall be designed for Full Vehicular Traffic per AASHTO HS20 loading, and in compliance with these design specifications:

American Concrete Institute ACE 318

American Society of Testing and Materials ASTM C857

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that trench cut is ready to receive Work, and excavations, dimensions, and elevations are as indicated on Drawings.

3.02 PREPARATION

- A. Hand trim excavations to required elevations. Correct overexcavation with compacted bedding material.
- B. Remove large stones or other hard materials, which could damage piping or impede consistent backfilling or compaction.
- C. Contractor shall provide de-watering system to lower the perched water level to an adequate depth below the construction to stabilize the bottom of the over-excavation prior to fill placement, if required per construction site condition. De-watering can be accomplished by means of intersecting peripheral and interior trenches, coffer dams, sumps, or selectively placed well points, or a combination thereof. The trenches shall drain into sumps for pumping. The well point and sump pumps shall transport the collected waters well outside of the construction area. The perched water shall not be allowed to pond upon the bottom of the excavation. The number of well points, trenches, sumps and pumps shall be determined by the Contractor at the time of construction. It is the responsibility of the contractor to provide an adequate de-water program.

3.03 BEDDING

- A. Place bedding material in trench bottom, level materials in continuous layer. Bedding shall be minimum 6-inch thickness, compact to minimum 95 percent relative compaction.
- B. Maintain optimum moisture content of bedding material to attain required compaction density.

3.04 INSTALLATION - PIPE

- A. Pothole existing utilities along alignment of proposed pipe to verify profile and utility crossings prior to construction.
- B. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal joints watertight.
- C. Lay pipe to slope gradients noted on Drawings; with maximum variation from true slope of 1/8 inch in 10 feet.
- D. Install sand backfill along sides and minimum 12 inches over top of pipe, compact to minimum 95 percent relative compaction.
- E. Do not displace or damage pipe when compacting.
- F. Install 3-inch wide continuous warning tape for storm drains and seawater waster line respectively over top of pipe and maximum of 18- inches below finish grade.
- G. The compaction of the backfill material along the sides and one foot above the pipe shall be done with hand tampers to protect the pipe.

3.05 INSTALLATION – MANHOLES, CATCH BASINS AND DRAINAGE INLETS

- A. Form bottom of excavation clean and smooth to correct elevation.
- B. Form and place cast-in-place concrete base with provisions for storm drainage pipe end sections.
- C. Level top surface of concrete base to receive shaft sections.
- D. Establish elevations and pipe inverts for inlets and outlets as indicated on Drawings.
- E. Compact top 12-inches of native materials below the bottom of catch basins, and manholes to minimum 95 percent relative compaction.
- F. Provide for no ponding of water in new manholes.

3.06 FIELD QUALITY CONTROL

- A. Inspection and testing shall be performed under the provision of Section 014000.
- B. Request inspection prior to and immediately after placing backfill cover over pipe.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to the University.

3.07 PROTECTION

- A. Protect pipe and backfill cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 33 40 00

SECTION 33 44 19

CATCH BASIN INSERT UTILITY STORM WATER FILTERS

PART 1 – GENERAL

1.01 DESCRIPTION

A. Scope

The Contractor shall furnish all labor, equipment and materials necessary to install the storm water treatment device(s) (SWTD) and appurtenances specified in the Drawings and these specifications.

B. Related Sections

1. Section 31 23 33: Trenching and Backfilling
2. Section 33 40 00: Storm Drainage and Seawater Waste Utilities

1.02 QUALITY ASSURANCES

A. Inspection

1. All components shall be subject to inspection by the engineer at the place of manufacture and/or installation. All components are subject to rejected or identified for repair if the quality of materials and manufacturing do not comply with the requirements of this specification. Components which have been identified as defective may be subject for repair where final acceptance of the component is contingent on the discretion of the University's Representative.

B. Warranty

1. The manufacturer shall guarantee the SWTD components against all manufacturer originated defects in materials or workmanship for a period of twelve (12) months from the date the components are delivered to the University for installation. The manufacturer shall upon its determination repair, correct or replace any manufacturer originated defect advised in writing to the manufacturer within the referenced warranty period. The use of SWTD components shall be limited to the application for which it was specifically designed.

C. Manufacturer's Performance Certificate

1. The SWTD manufacturer shall submit to the University's Representative a "Manufacturer's Performance Certification" certifying that each SWTD is capable of achieving the specified removal efficiencies listed in these specifications. The certification shall be supported by independent third-party research.

1.03 SUBMITTALS

A. Shop Drawings

1. The contractor shall prepare and submit shop drawings in accordance with Section 01340 of the contract documents. The shop drawings shall detail horizontal and vertical dimensioning, reinforcement and joint type and locations.

PART 2 – PRODUCTS

2.01 MATERIALS AND DESIGN

A. Concrete components shall conform to applicable sections of ASTM C478, ASTM C 857 and ASTM C 858 and the following:

1. Concrete shall achieve a minimum 28-day compressive strength of 3,250 pounds per square-inch (psi);
2. Unless otherwise noted, the precast concrete sections shall be designed to withstand lateral earth and AASHTO H-25. traffic loads;
3. Cement shall be Type III Portland Cement conforming to ASTM C 150;
4. Aggregates shall conform to ASTM C 33;
5. Reinforcing steel shall be deformed billet-steel bars, welded steel wire or deformed welded steel wire conforming to ASTM A 615, A 185, or A 497.
6. Joints shall be sealed with preformed joint sealing compound conforming to ASTM C 990.
7. Shipping of components shall not be initiated until a minimum compressive strength of 4,000 psi is attained or five (5) calendar days after fabrication has expired, whichever occurs first.

B. Internal Components and appurtenances shall conform to the following:

1. Screen and support structure shall be manufactured of Type 316 and 316L stainless steel conforming to ASTM F 1267-01;
2. Hardware shall be manufactured of Type 316 stainless steel conforming to ASTM A 320;
3. Fiberglass components shall conform to the National Bureau of Standards PS-15 and coated with an isophalic polyester gelcoat and Access system(s) conform to the following:
 - a. Manhole castings shall be designed to withstand AASHTO H-20 loadings and manufactured of cast-iron conforming to ASTM A 48 Class 30.

C. Plastic components shall be high-density polyethylene (HDPE).

2.02 PERFORMANCE

A. REMOVAL EFFICIENCIES

1. The SWTD shall be capable of achieving an 80 percent average annual reduction in the total suspended solid load.
2. The SWTD shall be outfitted with a 2400 micron screen.
3. The SWTD shall be capable of capturing and retaining 100 percent of pollutants greater than or equal to 3/16 of an inch regardless of the pollutant's specific gravity (i.e.: floatable and neutrally buoyant materials) for flows up to the device's rated-treatment capacity. The SWTD shall be designed to retain all previously captured pollutants addressed by this subsection under all flow conditions.

4. The SWTD shall be capable of capturing and retaining total petroleum hydrocarbons. The SWTD shall be capable of achieving a removal efficiency of 92 and 78 percent when the device is operating at 25 and 50 percent of its rated-treatment capacity. These removal efficiencies shall be based on independent third-party research for influent oil concentrations representative of storm water runoff (20 ± 5 mg/L). The SWTD shall be greater than 99 percent effective in controlling dry-weather accidental oil spills.

2.03 HYDRAULIC CAPACITY

- A. The SWTD shall provide a rated-treatment capacity of (12) cubic-feet per second. At this rated-treatment capacity, the device shall be capable of achieving 80 percent removal efficiency for particle distribution having a mean particle size (d50) of 125 microns. This removal efficiency shall be supported by independent third-party research.
- B. The SWTD shall maintain the peak conveyance capacity of the drainage network as defined by the Engineer.

2.04 STORAGE CAPACITY

- A. The SWTD shall be designed with a sump chamber for the storage of captured sediments and other negatively buoyant pollutants in between maintenance cycles. The minimum storage capacity provided by the sump chamber shall be in accordance with the volume listed in Table 1. The boundaries of the sump chamber shall be limited to that which do not degrade the SWTD's treatment efficiency as captured pollutants accumulate. The sump chamber shall be separate from the treatment processing portion(s) of the SWTD to minimize the probability of fine particle resuspension. In order to not restrict the University's ability to maintain the SWTD, the minimum dimension providing access from the ground surface to the sump chamber shall be 20 inches in diameter.

2.05 MANUFACTURER

- A. The manufacturer of the SWTD shall be one that is regularly engaged in the engineering design and production of systems deployed for the treatment of storm water runoff for at least five (5) years and which have a history of successful production, acceptable to the University's Representative. In accordance with the Drawings, the SWTD(s) shall be a CDS® device manufactured by:

1. CONTECH Stormwater Solutions, Inc.
200 Enterprise Drive
Scarborough, ME 04074
(877) 907-8676

2. Advanced Drainage Systems
4640 Trueman Boulevard
Hilliard, OH 43026
(800) 821-6710

3. KriStar Enterprises, Inc.
360 Sutton Place
Santa Rosa, CA 95407
(800) 579-8819

4. Or equal.

PART 3 – EXECUTION

3.01 HANDLING AND STORAGE

- A. The contractor shall exercise care in the storage and handling of the SWTD components prior to and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced shall be borne by the contractor.

3.02 INSTALLATION

- A. The SWTD shall be installed in accordance with the manufacturer's recommendations and related sections of the contract documents. The manufacturer shall provide the contractor installation instructions and offer onsite guidance during the important stages of the installation as identified by the manufacturer at no additional expense. A minimum of 72 hours notice shall be provided to the manufacturer prior to their performance of the services included under this subsection.
- B. The contractor shall fill all voids associated with lifting provisions provided by the manufacturer. These voids shall be filled with non-shrinking grout providing a finished surface consistent with adjacent surfaces. The contractor shall trim all protruding lifting provisions flush with the adjacent concrete surface in a manner, which leaves no sharp points or edges.
- C. The contractor shall removal all loose material and pooling water from the SWTD prior to the transfer of operational responsibility to the University.

TABLE 1
Storm Water Treatment Device
Hydraulic and Storage Capacities

Treatment Capacity (cfs)	Minimum Sump Storage Capacity (yd3)	Minimum Oil Storage Capacity (gal)
0.7	0.5	70
0.7	0.5	47
0.7	1.45	92
1.1	1.45	131
1.7	1.45	143
2.2	1.6	146
3.0	1.6	205
4.5	4.25	407
6.0	4.25	492
1.1	1.45	131
2.2	1.6	146
3.0	1.6	205
4.5	4.25	328
6.0	4.25	396
9.0	5.6	490
14.0	5.6	599
19.0	5.6	733
25.0	5.6	814
3.0	1.6	205
9.0	1.9	294
11.0	1.9	367
26.0	3.3	914
30.0	11.6	792
50.0	11.6	1057
64.0	11.6	1320

END OF SECTION

LIST OF DRAWINGS

[illegible]