

Project No.: 660175 1B 19900



Construction Documents for ENVIRONMENTAL SITE WORK PROJECT

VOLUME 1

University of California Merced
Merced County
Merced, California

**Design & Construction
University of California
5200 N. Lake Road
Merced, California 95343**

November 12, 2015

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Division 1 Specifications

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REQUEST FOR BIDS

**UC MERCED ENVIRONMENTAL SITE WORK PROJECT
PROJECT NO.: 661075 1B 19900
UNIVERSITY OF CALIFORNIA, MERCED**

DESCRIPTION OF PROJECT:

The proposed UC Merced Environmental Site Work Project, California Tiger Salamander (CTS) Exclusion Barrier implements the University's environmental permit obligations and mitigation requirements. The environmental site work consists of constructing an environmental barrier that includes removing existing mammal borrows, removing an existing California Tiger Salamander (CTS) exclusion barrier and CTS exit funnels, repairing an existing fence, repairing existing gates, installing new gate, installing a new CTS exclusion barrier and CTS exit funnels, and installing new CTS gate crossings. This is a rebid with Addenda 1 & 2 included. The University did not receive any bid submissions.

Bidding Documents will be made available to **General Contractors** on **Thursday, November 12, 2015**. One complete set of bidding documents will be available free of charge. Contact BrightDart at www.ucmercedplanroom.com to order plans or call them at (209) 385-3800. Additional sets may be purchased at cost.

Project Budget \$200,000

Contractor License: B

A MANDATORY Pre-Bid Conference/Project Site Visit will be conducted on Thursday, November 19, 2015, beginning promptly at 9:00 A.M. Participants shall meet at 5200 Lake Rd, Merced, Campus Construction Office.

If you need accommodations related to disabilities, please call Fran Telechea (209) 228-4479 at least 3 working days prior to Pre-Bid Conference/Project Site Visit or Bid Opening.

Requests for clarification or interpretation of the Bidding Documents must be in writing and received by **Monday, November 30, 2015 at 4:00 P.M.** Questions received after the above-noted deadline may be answered at the discretion of the University's Representative. Questions may be emailed to:

Phillip Woods – University of California, Merced
email: pwoods@ucmerced.edu

Revisions, additions or deletions will be made by written addenda issued by Design & Construction.

Bids will be received only at:
(Hand & Overnight delivery only)

UNIVERSITY OF CALIFORNIA, MERCED
Design and Construction
767 E Yosemite Ave., Bldg. B, Ste C
Merced CA 95340

Or by US Mail at:

UNIVERSITY OF CALIFORNIA, MERCED
Design and Construction
5200 Lake Rd.
Merced CA 95343
2:00:00 P.M.
December 8, 2015

Bids must be received before:

Bid Results will be available on our website at <http://www.ucmerced.edu/community/rfprfq.asp> or by calling (209) 228-4479.

There will be bid security required for this project.

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 rates at the location of the Work.

No contractor or subcontractor, regardless of tier, may be listed on a Bid for, or engage in the performance of, any portion of this project, unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 and 1771.1.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

At the time of submission of the bid, Bidder and all subcontractors, regardless of tier, shall have the appropriate current licenses issued by the State of California Contractors State License Board for the work to be performed.

THE UNIVERSITY OF CALIFORNIA IS AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY EMPLOYER.

PROJECT DIRECTORY

Project Name:	UC MERCED ENVIRONMENTAL SITE WORK PROJECT
Project No:	661075 1B 19900
Location:	Design & Construction University of California Merced Campus
University:	The Regents of the University of California
University's Facility person acting on behalf of University:	Tobor Toth University of California 5200 North Lake Road Merced CA 95343 (209) 228-7659 Fran Telechea
University's Representative is:	University of California 5200 North Lake Road Merced CA 95343 209-228-4453
All inquiries shall be in writing and shall be directed only to:	Phil Woods University of California 5200 North Lake Road Merced CA 95343 (209) 228-4479 (209) 228-4468 Kristin Nurmela
Design Professional Consultants:	LSA Associates, Inc. 157 Park Place Pt. Richmond, CA 94801 (510) 236-6810 (510) 236-3480 Marianna Eastman
Address for Stop Notices:	University of California 5200 North Lake Road Merced CA 95343 And Design & Construction University of California 5200 North Lake Road Merced CA 95343 Western Case Management Center 6795 N. Palm Avenue, 2 nd Floor Fresno CA 93704
Address for Demand for Arbitration:	
A copy of the Demand for Arbitration must be sent to:	University of California Office of the General Counsel 1111 Franklin Street, 8 th 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 Request for Bids and which may be revised by Addenda.
- 1.5 The term "Bidder" means a person or firm that is invited to submit a Bid.
- 1.6 The term "Bidding Documents" means the construction documents prepared and issued for bidding purposes including all Addenda thereto.
- 1.7 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.
- 1.8 The term "Estimated Quantity" means the estimated quantity of an item of Unit Price Work.
- 1.9 As used in these Instructions to Bidders, the term "Facility" means the University's Facility office issuing the Bidding Documents.
- 1.10 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.
- 1.11 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.
- 1.12 The term "Qualified" means a Bidder who has met all the requirements of the University's standard system contained in the Base Qualification Questionnaire, plus any additional project specific requirements listed in the Bidding Documents.
- 1.13 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.

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 Contractors 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.

2.1.9 For construction value between \$300,000 and \$640,000, Bidder and its mechanical, electrical and plumbing subcontractor(s) (if using) shall be Qualified under the University's standards prior to award.

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 Request for Bids for the sum stated therein, if any. Documents are only available in full sets and shall not be returned.

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; (4) California contractor license number. An inadvertent error in listing the California contractor license number shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the corrected contractor's license number is submitted in writing by, and actually received from, the Bidder within 24 hours after the bid opening and provided the corrected contractor's license number corresponds to the submitted name and location for that subcontractor. The failure to list, on the Bid Form, any one of the items set forth above or using a non-Qualified Mechanical, Electrical or Plumbing subcontractor (if using) 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. A Mechanical, Electrical or Plumbing subcontractor (if using) may be Qualified through the University's standard system before award to the Bidder.

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; the policy may be reviewed at the Facility office. 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.

5.1.3 Bidder's failure to submit a price for any Alternate or Unit Price (as requested) 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.

5.2 NOT USED

5.3 SUBMISSION OF BIDS

5.3.1 The Bid Form, 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, electronic mail (e-mail), 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 Not used

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 NOT USED

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 any item(s) 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 (if used) in any order or combination, unless otherwise specifically provided in the Bidding Documents.

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 elected to be included in the Contract Sum as of the time of award.

6.3.4 The University will post the Bid results on its internet website.

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, California contractor license number, 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 Not used, unless modified by Supplementary Instructions to Bidders
- .8 Not used
- .9 Not used, unless modified by Supplementary Instructions to Bidders

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 in writing and received by the Facility not later than 5:00 pm on the 3rd business day of the announcement of the Bid results.

7.1.2 Not Used

7.1.3 For the purpose of computing any time period in this Article 7, the date of receipt of any notice shall be the date on which the intended recipient of such notice actually received it. Delivery of any notice may be by any means, with verbal or written confirmation of receipt by the intended recipient.

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 written 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. The decision by the Facility is not appealable within the University of California.

7.2.2 Not used

7.2.3 Not used

7.2.4 Not used

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

Revisions, additions or deletions will be made by written addenda issued by Design & Construction only.

1. Requests for clarification or interpretation of the Bidding Documents must be in **writing** and received by **Monday, November 30, 2015**. Questions received after the above-noted deadline may be answered at the discretion of the University's Representative. **Questions may be mailed, E-Mailed to:**

Phillip Woods – University of California, Merced
email: pwoods@ucmerced.edu

2. A **MANDATORY** Project Site Visit will be conducted on Thursday, November 19, 2015.

If you need accommodations related to disabilities, please call Phillip Woods at (209) 228-4479 at least 3 working days prior to Pre-Bid Conference/Project Site Visit or Bid Opening.

3. Bids will be received on or before the Bid Deadline and only at:
**Hand or Overnight
Delivery Only** University of California, Merced
767 E. Yosemite Ave.
Merced California 95340

4. Bids will be opened at: **2:00 PM
December 8, 2015**
767 E. Yosemite Ave.
Merced California 95340

5. If Contractor fails to meet Substantial Completion milestones as described in the summary of work 01 11 00 part Contractor shall be assessed liquidated damages in the amount of \$250 per day for each calendar day following the specified date of Substantial Completion for that phase where the Work remains incomplete (Saturdays, Sundays, and holidays included).

6. Contract Time: Final completion by February 11, 2016.

7. Addenda will be issued only by University and only in writing. Addenda will be identified as such and will be emailed to all Planholders. who have provided an email address for receipt of Addenda.

8. Bid results will be posted at the following web address:
<http://www.ucmerced.edu/community/rfprfq.asp>

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. State of California, Department of Industrial Relations, Prevailing Wage Determinations for Statewide, Northern California, and Merced County may be found at http://www.dir.ca.gov/DLSR/statistics_research.html
 - A. No special determinations have been received from the Department of Industrial Relations for this project.
 - B. 1st publication date of the Advertisement for Bids.
2. Preliminary Project Schedule

BID FORM

FOR:

PROJECT NO. 660175 1B 19900
ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA MERCED
MERCED COUNTY
MERCED CALIFORNIA

BID TO:

UNIVERSITY OF CALIFORNIA MERCED
767 E. YOSEMITE AVE., SUITE C
MERCED CALIFORNIA 95340
TELEPHONE: (209) 228-0402

**FOR THE
FOLLOWING
WORK:**

ENVIRONMENTAL SITE WORK PROJECT

BID FROM:

(Name of Firm Submitting Bid)

(Address)

(City) (State) (Zip Code)

(Telephone Number) (Fax Number)

(Date Bid Submitted)

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 will 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 the Contract Time 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 have been issued for this Bid.

3.0 **NOT USED**

4.0 **LUMP SUM BASE BID**

\$

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 ,

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 ,

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 .

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(Place figures in appropriate boxes.)

Bidder includes in the Lump Sum Base Bid the following allowances:
ALLOWANCE No. 1 – \$20,000 Barbed Wire Fence Repair.

5.0 **SELECTION OF APPARENT LOW BIDDER**

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

6.0 **UNIT PRICES**

The quantities set forth in the Unit Prices are estimates. University does not represent that the actual quantity of any Unit Price item will equal the Estimated Quantity stated below. University will perform the extension of the Unit Price times the respective Estimated Quantity.

Unit Price for: Small Mammal Burrow Excavation as specified in Section 01 22 00.

Estimated Quantity of units: 10 Work Days.

\$

 ,

 ,

 .

(Place figures in appropriate boxes.)

7.0 **DAILY RATE OF COMPENSATION FOR COMPENSABLE DELAYS**

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 10 multiplier

(Place figures in appropriate boxes.)

Failure to fill in a dollar figure for the daily rate for Compensable Delay shall render the bid non-responsive. 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 **ALTERNATES NOT USED**

9.0 **LIST OF SUBCONTRACTORS**

Bidder will use Subcontractors for the Work:

Yes ____

If "yes", provide in the spaces below (a) the name, the location of the place of business, and the California contractor license number 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, specially 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 one-half 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.

Portion of the Work Activity (e.g. electrical, mechanical, concrete)	Subcontractor		
	Name of Business	Location of Business (City)	License No.

(Note: Add additional pages if required.)

10.0 **LIST OF CHANGES IN SUBCONTRACTORS DUE TO ALTERNATES**

The information below must be provided for all changes in first-tier Subcontractors if University selects Alternates. List changes in Subcontractors only for those portions of the Work valued in excess of one-half of 1 percent of prime contractor's total bid.

Alternate No.	Subcontractor			
	Portion of the Work Activity (e.g. electrical, mechanical, concrete)	Name	Location (City)	License No.

(Note: Add additional pages if required.)

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 _____.
(State)

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.)

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 or Certified Check)

13.0 **DECLARATION**

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

_____ 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 _____.
(State) (Date)

(Signature)

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

PROJECT NO.: 661075 1B 19900

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That we, _____,

as Principal, and _____, as Surety, are held and firmly bound unto THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter called THE REGENTS, in the sum of 10% of the Lump Sum Base 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:

ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA MERCED
MERCED, CALIFORNIA
PROJECT NO.: 661075 1B 19900

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 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 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.

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

PROJECT NO.: 661075 1B 19900

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

Principal: _____
(Name of Firm)

By: _____

Title: _____

Surety: _____
(Name of Firm)

By: _____

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 _____ between the University,
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,

whose facility is: University of California
Merced Campus

whose address for notices is: University of California
5200 n. Lake Rd.
Merced, California 95343

and Contractor:
whose address for notices is:

for the Project: Environmental Site Wrok Project
Project No. 661075 1B 19900
University of California Merced
Merced, California 95343

University's Responsible Administrator: Tobor Toth
University of California
5200 North Lake Road
Merced CA 95343
(209) 228-7659

University's Representative is: Fran Telechea
University of California
5200 N. Lake Rd
Merced, CA 95343
whose address for notices is: University of California
5200 N. Lake Rd.
Merced, California 95343

Contract Documents for the LSA Associates, Inc.
Work Prepared by: 157 Park Place
PT. Richmond, CA 94801

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 Allowances:

(TO BE COMPLETED AT TIME OF AWARD, IF APPLICABLE)

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 not later than November 23, 2015, 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 meet Substantial Completion milestones as described in the summary of work 01 11 00 part 1 Contractor shall be assessed liquidated damages in the amount of \$250.00 per day for each calendar day following the specified date of Substantial Completion for that phase where the Work remains incomplete (Saturdays, Sundays, and holidays included).

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.

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

CONTRACTOR:

(Name of Firm)

(Type of Organization)

By: _____

(Signature)

(Printed Name)

(Title)

California Contractor's License(s):

(Name of Licensee)

(Classification and License Number)

(Expiration Date)

Employer Identification Number

(EIN NUMBER)

UNIVERSITY:

The Regents of the University of California

(Facility)

By: _____

(Signature)

(Printed Name)

(Title)

Attach notary acknowledgment 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" shall have the meaning identified in Article 2 of the Agreement.

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 HAZARDOUS MATERIAL

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

1.1.26 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.

1.1.27 SEPARATE CONTRACTOR

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

1.1.28 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

See Article 3.12 of the General Conditions.

1.1.29 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.

1.1.30 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.

1.1.31 SUBSTANTIAL COMPLETION
See Article 9.7 of the General Conditions.

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

1.1.33 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.

1.1.34 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.

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

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

1.1.37 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.

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

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

1.1.40 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 and its Subcontractors shall review and compare each of the Contract Documents with the others and with information furnished or made available 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 or its Subcontractors.

3.1.2 Contractor and its Subcontractors 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 and its Subcontractors performs any construction activity involving an error, inconsistency, or omission referred to in Articles 3.1.1 and 3.1.2, without giving the notice required in those Articles 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, or, if no such time period is specified, within a reasonable period of time.

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, or if no such time period is specified, within a reasonable period of time. If University's Representative deems the Contract Schedule or updated Contract Schedule unacceptable, it shall specify in writing to Contractor the basis for its objection.

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. Schedules showing the Work completed in less than the Contract Time may be acceptable if judged by University's Representative to be practical. Schedules showing the Work completed beyond the Contract Time may be submitted under the following circumstances:

- .1 If accompanied by a Change Order Request seeking an adjustment of the Contract Time consistent the requirements of paragraph 8.4 for Adjustment of the Contract Time for Delay.; or
- .2 If the Contract Time has passed, or if it is a practical impossibility to complete the Work within the Contract Time, then the updated Contract Schedule or fragnet schedule shall show completion at the earliest practical date.

University's Representative will timely review the updated Contract Schedule or Fragnet Schedule submitted by Contractor. If University's Representative determines that additional supporting data are necessary to fully evaluate the updated Contract Schedule or Fragnet Schedule, University's Representative will request such additional supporting data in writing. Such data shall be furnished no later than 10 days after the date

of such request. University's Representative will render a decision promptly and in any case within 30 days after the later of the receipt of the updated Contract Schedule or Fragnet Schedule or the deadline for furnishing such additional supporting data. Failure of University's Representative to render a decision by the applicable deadline will be deemed a decision denying approval of the updated Contract Schedule or Fragnet Schedule.

Acceptance of any schedule showing completion beyond the Contract Time by University's Representative shall not change the Contract Time and is without prejudice to any right of the University. The Contract Time, not the Contract Schedule, shall control in the determination of liquidated damages payable by 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 reasonable 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 will permit its completion within the Contract Time, any Contract milestones and any Contract phases.

3.9.9 In preparing the Preliminary Contract Schedule, the Contract Schedule, and updated Contract Schedules, Contractor shall obtain such information and data from Subcontractors as may be required to develop a reasonable and appropriate schedule for performance of the work and shall provide such information and data to the University's Representative upon request. 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, as appropriate, 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.

3.10 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 (including Hazardous Materials) 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 HAZARDOUS MATERIALS

3.19.1 The University shall not be responsible for any Hazardous Material brought to the site by the Contractor.

3.19.2 If the Contractor: (i) introduces and/or discharges a Hazardous Material onto the site in a manner not specified by the Contract Documents; and/or (ii) disturbs a Hazardous Material identified in the Contract Documents, the Contractor shall hire a qualified remediation contractor at Contractor's sole cost to eliminate the condition as soon as possible. Under no circumstance shall the Contractor perform Work for which it is

not qualified. University, in its sole discretion, may require the Contractor to retain at Contractor's cost an independent testing laboratory.

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

3.19.4 Subject to Contractor's compliance with Article 3.19.3, the University shall verify the presence or absence of the Hazardous Material reported by the Contractor, except as qualified under Section 3.19.1 and 3.19.3, and, in the event such material or substance is found to be present, verify that the levels of the hazardous material are below OSHA Permissible Exposure Levels and below levels which would classify the material as a state of California or federal hazardous waste. When the material falls below such levels, Work in the affected area shall resume upon direction by the University. The Contract Time and Sum shall be extended appropriately as provided in Articles 7 and 8.

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

- .1 Claims, damages, losses or expenses arising from the breach of contract, negligence or willful misconduct of Contractor, its suppliers, its Subcontractors of all tiers and/or any persons or entities working under Contractor; and
- .2 Claims, damages, losses or expenses arising from a Hazardous Material subject to Article 3.19.2.

3.19.6 In addition to the requirements in Article 3.22, Contractor shall indemnify and hold harmless the University from and against claims, damages, losses and expenses, arising from a Hazardous Material on the Project site, if such Hazardous Material: (i) was shown on the Contract Documents or Information Available to Bidders; (ii) was brought to the site by Contractor; and (iii) exceeded OSHA Permissible Exposure Levels or levels which would classify the material as a state of California or federal hazardous waste. Nothing in this paragraph shall obligate the Contractor to indemnify University in the event of the sole negligence of the University, its officers, agents, or employees.

3.20 INFORMATION AVAILABLE TO BIDDERS

3.20.1 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.

3.21 LIABILITY FOR AND REPAIR OF DAMAGED WORK

3.21.1 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 damages and losses to the Project caused by earthquake in excess of magnitude 3.5 on the Richter Scale, tidal wave, or flood, provided that the damages or losses were not caused in whole or in part by the negligent acts or omissions of 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.

3.21.2 Contractor shall promptly repair and replace any Work or materials damaged or destroyed for which the Contractor is liable under Article 3.21.1.

3.22 INDEMNIFICATION

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

- .1 The failure of 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.
- .4 Any claim of damage or loss resulting from Hazardous Materials introduced, discharged, or disturbed by Contractor as required per Article 3.19.6.

3.22.2 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 as provided in paragraph 3.22.1 above. 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 (i) in the event of the sole negligence of University, its officers, agents, or employees; or (ii) to the extent that the University shall indemnify and hold harmless the Contractor for Hazardous Materials pursuant to Article 3.19.5 .

3.22.3 In claims against any person or entity indemnified under this Article 3.22 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 3.22 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.

3.22.4 The indemnification obligations under this Article 3.22 shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

3.22.5 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.

3.22.6 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, provided that if :

- .1 the Change Order Request includes compensation sought by a Subcontractor; AND
- .2 the Contractor requests in writing to the University's Representative, within the 7-day time period, additional time to permit Contractor to conduct an appropriate review of the Subcontractor Change Order Request,

the time period for submission of the actual Change Order Request shall be extended by the number of days specified in writing by the University's Representative.

4.2.3.2 A Change Order Request must state that it is a Change Order Request, state and justify the reason for the request, and specify the amount of any requested adjustment of the Contract Sum, Contract Time, and/or other monetary relief. If the 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. If requested, Contractor may submit a fragnet in support of its request for a time extension. The University may, but is not obligated to, grant a time extension on the basis of a fragnet alone which,

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

- .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. In the event the Change Order Request is submitted pursuant to Article 8.4.1, the University's Representative shall promptly review and accept or reject it within thirty (30) days. A final decision is any decision on a Change Order Request which states that it is final. If University's Representative issues a final decision denying a Change Order Request in whole or in part, 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.

- .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. An estimate of the costs must be provided even if the costs claimed have not been incurred when the Claim is submitted. To the extent costs have been incurred when the Claim is submitted, the Claim must include actual cost records (including without limitation, payroll records, material and rental invoices and the like) demonstrating that costs claimed have actually been incurred. To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records must be submitted on a current basis not less than once a month during any periods costs are incurred. A cost record will be considered current if submitted within 30 days of the date the cost reflected in the record is incurred. At the request of the University's Representative, claimed extra costs may be subject to further verification procedures (such as having an inspector verify the performance of alleged Extra Work on a daily basis). The cost breakdown must include an itemization of costs for i) labor including names, classifications, regular hours and overtime hours worked, dates worked, and other pertinent information; ii) materials stored or incorporated in the work including invoices, purchase orders, location of materials either stored or incorporated into the work, dates materials were transported to the project or incorporated into the work, and other pertinent information; and iii) itemization of machinery and equipment including make, model, hours of use, dates of use and equipment rental rates of any rented equipment.
 - .2 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.
 - .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, provided that after written notification to the University's Representative within such time period, the time period for submission of the Claim shall be extended by the number of days specified in writing by the University's Representative where the Claim includes compensation sought by a Subcontractor and the Contractor requests an extension of time to permit it to discharge its responsibilities

to conduct an appropriate review of the Subcontractor claim.

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, to the extent not otherwise disallowed under Article 7.3.3, 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 fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .2 Fringe Benefits and Payroll Taxes for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .3 Overtime wages or salaries, specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .4 Fringe Benefits and Payroll Taxes for overtime Work specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the 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, used directly in the performance of the Extra Work. Such rental charges shall not exceed the current Equipment Rental Rates published by the California Department of Transportation for the area in which the work is performed. Such rental rates are found at <http://www.dot.ca.gov/hq/construc/equipmnt.html>. Contractor shall attach a copy of said schedule to the Cost Proposal. The charges for any machinery and equipment shall cease when the use thereof is no longer necessary for the Extra Work.
- .8 Additional costs of royalties and permits due to the performance of the Extra Work.
- .9 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 Supervision
- .2 Superintendent(s).
- .3 Assistant Superintendent(s).
- .4 Project Engineer(s).
- .5 Project Manager(s).
- .6 Scheduler(s).
- .7 Estimator(s).
- .8 Small tools (Replacement value does not exceed \$300).
- .9 Office expenses including staff, materials and supplies.
- .10 On-site or off-site trailer and storage rental and expenses.
- .11 Site fencing.
- .12 Utilities including gas, electric, sewer, water, telephone, facsimile, copier equipment.
- .13 Data processing personnel and equipment.
- .14 Federal, state, or local business income and franchise taxes.
- .15 Overhead and Profit.
- .16 Costs and expenses of any kind or item not specifically and expressly included in Article 7.3.2.

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 three 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 (including the University acting through its consultants, Design Professionals, Separate Contractors or the University's Representative) to perform any Contract obligation where the failure to so perform is not the result of any default or misconduct of the Contractor.
 - .5 A materially differing site condition pursuant to Article 3.17.
- .3 Condition Number Three: The delay is not concurrent with a delay caused by an event other than those listed in Article 7.3.9.2.

7.3.10 For each day of delay that meets all three 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 prior written notification to the 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 four 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 four conditions:

- .1 Condition Number One: The delay is critical. A delay is critical if and only to the extent it delays a work activity that cannot be delayed without delaying Final Completion of the Work 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.
- .2 Condition Number Two: 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 is likely to have an impact on the critical path of the Project, (even if the Contractor has not yet been delayed when the Contractor discovers or reasonably should discover the critical path impact of 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.
- .3 Condition Number Three: The delay is not caused by:
 - .1 A concealed, unforeseen or unknown condition or event except for a materially differing site condition pursuant to Article 3.17; or
 - .2 The financial inability, misconduct or default of the Contractor, a Subcontractor or supplier; or
 - .3 The unavailability of materials or parts.

- .4 Condition Number Four: The delay is caused by:
- .1 Fire; or
 - .2 Strikes, boycotts, or like obstructive actions by labor organizations; or
 - .3 Acts of God (As used herein, "Acts of God" shall include only earthquakes in excess of a magnitude of 3.5 on the Richter Scale and tidal waves); or
 - .4 A materially differing site condition pursuant to Article 3.17; 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 (including the University acting through its consultants, Design Professionals, Separate Contractors or the University's representative) to perform any Contract obligation unless such failure is due to Contractor's default or misconduct.
 - .9 "Adverse weather," but only for such days of adverse weather, or on-site conditions caused by adverse weather, that are in excess of the number of days specified in the Supplementary Conditions. In order for a day to be considered a day of adverse weather for the purpose of determining whether 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 adverse weather, less than one half day of critical path work is performed by Contractor; and
 - .2 the day must be identified in the Contract Schedule as a scheduled work day.

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

- .1 When two or more delays (each of which meet all four conditions prescribed in Article 8.4.1) 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 four requirements of Article 8.4.1 if the delay is concurrent with a delay that does not meet all four conditions of Article 8.4.1.

8.4.3 If for any reason one or more of the four 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 has 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.
- .14 Any other failure of Contractor to perform its obligations under the Contract Documents.

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

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

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

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

9.5.1 At the request and expense of 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 retention is due in accordance with Article 9.8. Securities shall be valued as often as conditions of the securities market warrant, but in no case less than once per month. 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. Contractor and its surety shall bear the risk of failure of the Escrow Agent selected.

9.5.3 A prerequisite to the substitution of securities in lieu of retention or the deposit of retention into escrow shall be the execution by 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 occupancy date stated in the Certificate of Beneficial Occupancy except that the Guarantee to Repair Periods for that part of equipment or systems that serve portions of the Work for which University has not taken Beneficial Occupancy or issued a Certificate of Substantial Completion shall not commence until the University has taken Beneficial Occupancy for that portion of the Work or has issued a Certificate of Substantial Completion with respect to the entire Project.
- .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. If the

University's Representative determines that the Work is not substantially completed the University's Representative will 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. Upon notification that the items on the list are completed or corrected, as applicable, the University's Representative will make an inspection to determine whether the Work is substantially complete. 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. The University's Representative will prepare and furnish to the Contractor a comprehensive "punch list" of items to be completed or corrected prior to Final Completion.

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

- .1 Are not operational (equipment or systems shall not be considered operational if they cannot be used to provide the intended service; or
- .2 Are not accepted by the University.

The Guarantee To Repair Period for equipment or systems which become 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, FINAL PAYMENT, AND RELEASE OF RETENTION

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

- .1 Contractor submits the final Application For Payment and all submittals required in accordance with Article 9.3;
- .2 Contractor submits 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 Contractor submits the Final Distribution of Contract Dollars in the form contained in the Exhibits; and
- .4 University's Representative issues the final Certificate For Payment.

At its sole discretion, after Final Completion, University may waive the requirement that Contractor submit a

final Application For Payment before making final payment and/or release of retention to Contractor.

9.8.3 Final payment shall be paid not more than 10 days after University's Representative issues the final Certificate For Payment. Retention shall be released to Contractor 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 claims for retention and claims 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 3.21 regarding the scope and extent of Contractor's liability for and 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 prior written notice to University, in accordance with policy provisions.

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 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.
- .2 A Severability of Interest Clause that shall be primary insurance as respects The Regents of the University of California, its officers, agents and employees. Any insurance or self-insurance maintained by The Regents of the University of California shall be excess of and non-contributory with this insurance. The provision shall state that, "The term 'insured' is hereby used severally and not

collectively, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurers' liability."

- .3 A Cross Liability Clause stating that, "In the event of claims being made under any of the coverages of the policies referred to herein by one or more insureds hereunder for which another insured hereunder may be liable, then the policies shall cover such insureds against whom a claim is made or may be made in the same manner as if separate policies had been issued to each insured hereunder. Nothing contained herein, however, shall operate to increase the insurers' limits of liability as set forth in the insuring agreements."
- .4 University, University's consultants, University's Representative, and University's Representative's consultants will not by reason of their inclusion as insureds incur liability to the insurance carriers for payment of premiums for such insurance.
- .5 Coverage provided is primary and is not in excess of or contributing with any insurance or self-insurance maintained by University, University's consultants, University's Representative, and University's Representative's consultants. This provision, however, shall only apply as per the stipulations of Article 11.1.6.1.

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 Subcontractors, its agents, and employees.

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

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 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 on the critical path is more than 30 days behind the date set forth in the Contract Schedule for such Work activity, as a result of an Unexcusable Delay. For a Contract with a Contract Time of less than 300 days, the 30-day period shall be reduced to the number of days commensurate with 10% of the Contract Time.
- .5 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 PATIENT HEALTH INFORMATION

Contractor acknowledges that its employees, agents, subcontractors, consultants and others acting on its behalf may come into contact with Patient Health Information ("PHI") while performing work at the Project Site. This contact is most likely rare and brief (e.g. walking through a clinic where patient files may be visible, overhearing conversations between physicians while working or touring a hospital, noticing a relative or acquaintance receiving treatment in a University facility, etc.). Contractor shall immediately notify University Representative of any such contact. Any and all forms of PHI should not be examined closer, copied, photographed, recorded in any manner, distributed or shared. Contractor will adopt procedures to ensure that its employees, agents and subcontractors refrain from such activity. If Contractor, its employees, agents or subcontractors do further examine, copy, photograph, record in any manner, distribute or share this information, Contractor will report such actions immediately to the University Representative. Contractor will immediately take all steps necessary to stop any such actions and will ensure that no further violations of this contractual responsibility will occur. Contractor will report to University Representative within five (5) days after Contractor gives University Representative notice of the event/action of the steps taken to prevent future occurrences.

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, 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 prevailing wage law pursuant to the State of California Labor Code, including but not limited to Sections 1770, 1771, 1771.1, 1772, 1773, 1773.1, 1774, 1775, 1776, 1777.5, and 1777.6 of the State of California Labor Code. Compliance with these sections is required by this Contract. The Work under this Contract is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations.

14.3.3 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 as well as job site notices as prescribed by regulation at the job site. By this reference, such schedule is made part of the Contract Documents. 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 1742 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, \$100 for each day, or portion thereof, for each worker, until strict compliance is accomplished. Such forfeiture amounts may be deducted from the Contract Sum.

14.5 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 and in accordance with prevailing wage law pursuant to the Labor Code, including but not limited to Section 1777.5. The Contractor bears responsibility for compliance with this section for all apprenticeable occupations.

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 journeyman 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 journeyman trainees who may receive on-the-job training to enable them to achieve journeyman 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 METHODS OF DELIVERY FOR SPECIFIED DOCUMENTS

15.8.1 The following documents must be delivered in a manner specified in Article 15.8.2:

- .1 Contractor Notices of election to litigate or arbitrate;

- .2 Written demand for a final decision by University's Representative pursuant to Article 4.2.5;
- .3 Contractor claims pursuant to Article 4.3;
- .4 Contractor notices of conditions pursuant to Articles 3.17, 3.18, or 3.19;
- .5 University's notices of Contractor's failure to perform and/or correct defective work pursuant to Articles 4.1.6, 12.2 and 13.2.3;
- .6 University's notice to stop work pursuant to Article 2.3.1;
- .7 Notices of termination or suspension pursuant to Article 13.

15.8.2 Delivery methods for documents specified in Article 15.8.1:

- .1 By personal delivery.
- .2 Sent by facsimile copy where receipt is confirmed.
- .3 Sent by Express Mail, or another method of delivery providing for overnight delivery where receipt is confirmed.
- .4 Sent by registered or certified mail, postage prepaid, return receipt requested.

15.8.3 The documents identified in Article 15.8.1 shall only be effective if delivered in the manner specified in Article 15.8.2. Subject to the forgoing, such documents shall be deemed given and received upon actual receipt in the case of all except registered or certified mail; and in the case of registered or certified mail, on the date shown on the return receipt or the date delivery during normal business hours was attempted. Delivery of the specified documents shall be made at the respective street addresses set forth in the Agreement. Such street addresses may be changed by notice given in accordance with this Article 15.8.

15.9 TIME OF THE ESSENCE

15.9.1 Time limits stated in the Contract Documents are of the essence of the Contract.

15.10 MUTUAL DUTY TO MITIGATE

15.10.1 University and Contractor shall use all reasonable and economically practicable efforts to mitigate delays and damages to the Project and to one another with respect to the Project, regardless of the cause of such delay or damage.

SUPPLEMENTARY CONDITIONS

1. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 3 – CONTRACTOR

Article 3.13.2 is replaced as follows:

3.13.2 Contractor shall, on a daily basis during performance of the Work, keep the Project site and surrounding area free from the accumulation of dirt, waste materials, and rubbish caused by Contractor. If cleanup is not performed on a daily basis, University may perform cleanup as necessary, and allocate the cost for such cleanup between those firms responsible. Contractor shall remove all dirt, waste material, and rubbish caused by Contractor, along with any tools, equipment, machinery, and surplus materials from the Project site and surrounding area at the completion of the Work. Cleanup of unclean jobsite conditions must be within 24 hours after such notice has been given to Contractor by University's Representative.

The following article is added to Article 3 of the General Conditions:

3.22 DAILY REPORTS

3.22.1 Contractor shall submit daily reports, on the form contained in the Exhibits, to the University's Representative not later than 2:00 p.m. each work day.

2. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 3 – CONTRACTOR

Article 3.8.4 is replaced as follows:

3.8. SUPERINTENDENT

3.8.4 The Superintendent may perform the Work of any trade, pickup 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. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 7 - CHANGES IN THE WORK

The following article is added to Article 7 of the General Conditions:

7.7. LETTER OF INSTRUCTION

7.7.1 The University's Representative may issue Letter of Instruction (as shown in Exhibit 26) which make interpretations or clarifications of the Contract Documents that do not change the scope of Work or involve an adjustment of the Contract Sum or the Contract Time and that are consistent with the intent of the Contract Documents. Letter of Instruction shall be binding upon Contractor. Contractor shall promptly carry out the requirements of such Letter of Instruction.

4. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 8 - CONTRACT TIME

8.4.1.6.11 "Rainy weather", but only for such days of rain that are in excess of the number of days specified:

October – 1 day
November – 2 days
December -3 days
January – 5 days
February - 6 days
March – 5 days
April – 3 days
May – September – 0 days

In order for a day to be considered a "day of rainy weather" for the purpose of determining whether Contractor is entitled to a time extension, all of the following conditions must be met:

.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.

When the total number of rainy weather days within a month does not exceed the number of days specified; the remaining days shall carry forward to the next month of the project. Remaining rain days for the calendar year shall carry forward to the next calendar year through final completion of the project.

4. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 9 – PAYMENTS AND COMPLETION

Article 9.4.1 is replaced as follows:

9.4 CERTIFICATE FOR PAYMENT

9.4.1 If Contractor has submitted an Application For Payment in accordance with Article 9.3, University's Representative shall, not later than 10 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.

MODIFICATION OF GENERAL CONDITIONS, ARTICLE 11 - INSURANCE AND BONDS

Insurance required by Paragraphs 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 following:

	<u>Minimum Requirement</u>
11.1.2.1 Commercial Form General Liability Insurance-Limits of Liability	
Each Occurrence-Combined Single Limit for Bodily Injury and Property	\$1,000,000
Products-Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
General Aggregate	\$2,000,000
11.1.2.2 Business Automobile Liability Insurance-Limits of Liability	
Each Accident-Combined Single Limit for Bodily Injury and Property Damage	\$2,000,000

Insurance required by Paragraph 11.1.2.3 shall be issued by companies (i) that have a Best rating of ~~B+~~ A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's); or (ii) that are acceptable to the University. Such insurance shall be written for not less than the following:

11.1.2.3 WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY – (as required by

Insurance required by Paragraphs 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 following:

Minimum Requirement

Federal and State of California law).

1.1 COUNTY OF MERCED INSURANCE REQUIREMENTS

1. CONTRACTOR shall provide a certificate of insurance and endorsements on each policy, and name COUNTY OF MERCED, its officers, employees and agents as Additional Insured's on the Auto Liability and Commercial General Liability policies using ISO form CG2026 or an alternate form that is at least as broad as form CG2026, as to any liability arising from the performance of this Agreement.
2. Worker's Compensation Insurance: The Worker's Compensation policy shall be endorsed to waive the insurer's subrogation rights against the COUNTY OF MERCED.

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EXHIBIT 1 – CERTIFICATE OF INSURANCE

DATE ISSUED:

BROKER/AGENT		COMPANIES AFFORDING COVERAGE					
		COMPANY A					
		COMPANY B					
NAMED INSURED		COMPANY C					
		COMPANY D					
COVERAGES							
This is to certify that policies of insurance listed below have been issued to the insured named above for the policy period indicated. This certificate or verification of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate or verification of insurance 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.							
CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFF. DATE (M/D/Y)	POLICY EXP. DATE (M/D/Y)		LIMITS	DEDUCTIBLE
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL FORM <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCURRENCE <input type="checkbox"/> SEVERABILITY OF INTEREST CLAUSE <input type="checkbox"/> CROSS LIABILITY CLAUSE				GENERAL AGGREGATE PRODUCTS/COMPLETED OPERATIONS AGGREGATE PERSONAL & ADVERTISING INJURY EACH OCCURRENCE FIRE DAMAGE (ANY ONE FIRE) MEDICAL EXPENSE (ANY ONE PERSON)	\$ \$ \$ \$ \$	\$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO (CODE 1) <input type="checkbox"/> ALL OWNED AUTOS (CODE 2) <input type="checkbox"/> SCHEDULED AUTOS (CODE 7) <input type="checkbox"/> HIRED AUTOS (CODE 8) <input type="checkbox"/> NON-OWNED AUTOS (CODE 9) <input type="checkbox"/> OTHER				CSL BODILY INJURY (PER PERSON) BODILY INJURY (PER ACCIDENT) PROPERTY DAMAGE	\$ \$ \$ \$	\$
	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER <input type="checkbox"/> CLAIMS MADE OCCURRENCE				EACH OCCURRENCE \$	AGGREGATE \$	
	PROFESSIONAL LIABILITY* <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCURRENCE				EACH OCCURRENCE \$	AGGREGATE \$	
	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY*				AS REQUIRED BY FEDERAL AND CALIFORNIA LAW		

SPECIAL PROVISIONS:

*Special Provision #1 and #2 below do not apply to this coverage.

- THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, ITS OFFICERS, AGENTS, EMPLOYEES, CONSULTANTS, REPRESENTATIVES, AND REPRESENTATIVE'S CONSULTANTS ARE INCLUDED AS ADDITIONAL INSURERS BUT ONLY IN CONNECTION WITH **Environmental Site Work Project**
- THIS INSURANCE 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 NONCONTRIBUTORY WITH THIS INSURANCE.
- THE PROVISIONS UNDER PARAGRAPHS (1&2) OF THIS SECTION, "SPECIAL PROVISIONS", 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 THE NAMED INSURED.
- SHOULD ANY OF THE INSURANCE PROGRAMS DESCRIBED HEREIN BE MATERIALLY MODIFIED OR CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL THIRTY (30) DAYS (TEN [10] DAYS FOR NON-PAYMENT OF PREMIUM) WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED BELOW.

CERTIFICATE HOLDER: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA.

FORWARD TO:

Design & Construction
UNIVERSITY OF CALIFORNIA, MERCED
5200 N. Lake Rd
Merced, CA 95343

THE UNDERSIGNED CERTIFIES THAT HE/SHE IS AUTHORIZED TO SIGN THIS CERTIFICATE AND THAT THE SPECIAL PROVISIONS DESCRIBED HEREIN HAVE BEEN MADE A PART OF THE POLICY(IES) SHOWN ABOVE.

AUTHORIZED REPRESENTATIVE

Bond No.: _____

PAYMENT 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") for the work described as follows:

**ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA MERCED CAMPUS
MERCED COUNTY, MERCED CALIFORNIA**

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 \$ _____ 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 3181, 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 3181 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, deletion, 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, deletion, 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 others.

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)

By:

Title:

Surety:

(Name of Firm)

By:

Title:

Address for Notices:

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

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:

**ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA MERCED CAMPUS
MERCED COUNTY, MERCED CALIFORNIA**

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 \$ _____, 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:

By:

Title:

Title:

Address for Notices:

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

APPLICATION FOR PAYMENT

Number: _____ Period to: _____

TO UNIVERSITY: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, MERCED, UNIVERSITY OF CALIFORNIA, 5200 N. LAKE ROAD, MERCED, CA 95344 AND UNIVERSITY'S REPRESENTATIVE:

FROM CONTRACTOR: _____
ADDRESS: _____
PROJECT NAME: ENVIRONMENTAL SITE WORK PROJECT
PROJECT NUMBER: 661075 1B 19900
FACILITY: University of California, Merced
CONTRACT DATE: _____
APPLICATION DATE: _____

<u>CHANGE ORDER SUMMARY:</u>	<u>Additions</u>	<u>Deductions</u>
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 ± 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 Value (a + b + c)	\$ _____
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)	\$ _____

*Pursuant to Article 9.2.2 of the General Conditions.

The undersigned Contractor hereby represents and warrants to University that all Work, for which Certificates For Payment have previously been issued and payment received from University, is free and clear of all claims, stop notices, security interests, and encumbrances in favor of Contractor, any Subcontractor, and any other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment related to the Work.

The following Schedules are attached and incorporated herein, and made a part of this Application For Payment:

- Schedule 1 Cost Breakdown Schedule
- Schedule 2 Certification of Current Market Value of Securities in Escrow in Lieu of Retention
- Schedule 3 List of Subcontractors
- Schedule 4 Declaration of Releases of Claims

(Contractor)

By: _____
(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)

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

PROJECT NO.: 661075 1B 19900

PROJECT NAME: _____

APPLICATION NUMBER: _____

PROJECT NUMBER: _____

APPLICATION DATE: _____

FACILITY: University of California, Merced

PERIOD TO: _____

CONTRACT DATE: _____

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>
ITEM NO.	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 (5% x E)
001	Bonds/Insurance						
002	Mobilization						
003	Submittals						
004	Shop Drawings						
005							
006	As-built Update						
007	Closeout Documents						
008	Punchlist						
009	Warranty						
010	Commissioning/ Start Up						

PROJECT NAME: _____

CONTRACTOR: _____

PROJECT NUMBER: _____

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. _____ with _____
(Escrow Agent)

is _____ Dollars (\$_____).

(Escrow Agent)

(Contractor)

By: _____
(Name)

(Name)

(Title)

(Title)

Date: _____

Date: _____

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

PROJECT NAME: _____
CONTRACTOR: _____
PROJECT NUMBER: _____
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: _____

PROJECT NAME: _____

CONTRACTOR: _____

PROJECT NUMBER: _____

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:

(Contractor)

By: _____
(Name)

(Title)

Date: _____

SELECTION OF RETENTION OPTIONS

I (we): _____
(Contractor)

SELECTION OPTION 1

Check here for Option 1

University will withhold retention

OR SELECTION OPTION 2

Check here for Option 2

herewith elect to substitute securities in the form of:

(Type of security)

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

OR 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

(Signature)

(Signature)

(Printed Name)

(Printed Name)

(Title)

(Title)

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

**** Note: Contractor and its surety bear the risk of failure of the bank selected.**

Note: If a completed and signed Escrow Agreement is not submitted with this form, University will not allow deposit of securities in lieu of retention.

RETURN THIS AGREEMENT SIGNED BY CONTRACTOR AND ESCROW AGENT TO: DESIGN
AND CONSTRUCTION, UNIVERSITY OF CALIFORNIA, MERCED, 5200 N. LAKE RD, MERCED
CA 95343.

Escrow Account No.: _____

**ESCROW AGREEMENT FOR
DEPOSIT OF SECURITIES IN LIEU OF RETENTION
AND
DEPOSIT OF RETENTION**

This Escrow Agreement is made as of _____, _____, and entered into by and between
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, whose address is University of California,
Office of the President, 1111 Franklin Street, 6th Floor, Oakland, CA 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 **ENVIRONMENTAL SITE WORK PROJECT** 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, Merced Campus (Facility); and Contractor shall be designated as the beneficial owner.

(2) Escrow Agent shall review the market value of securities deposited in escrow under this Escrow Agreement as often as conditions of the securities market warrant, but in no case less than once per month. Escrow Agent shall promptly notify University and Contractor of the market value of the deposited securities if such market value is less than the total amount of retention required to be withheld under the terms of the Contract. Contractor shall promptly deposit additional securities so that the current market value of the total of all deposited securities shall be at least equal to the total required amount of retention. Escrow Agent shall, within 5 days after University's request, provide a statement to University of the current market value of all securities deposited under this Escrow Agreement as of a date not earlier than 5 days prior to such request. The provisions of this Paragraph 2 shall not apply to securities consisting of monetary deposits as allowed by Paragraph 7 held by a bank as Escrow Agent, provided the bank provides monthly statements reflecting the status of the monetary deposits held by the bank to University and Contractor.

(3) Contractor shall not use any or all of the securities deposited in lieu of retention under this Escrow Agreement for any other obligations, including deposits in lieu of retention for other contracts. Contractor represents, covenants and warrants that all deposited securities shall be lien free when tendered to the Escrow Agents and shall remain lien free during their retention by the Escrow Agent.

(4) University shall make progress payments to Contractor for those funds which otherwise would

be withheld from progress payments pursuant to the Contract provision, provided that Escrow Agent holds securities in the form and amount specified herein.

(5) Prior to Contractor's submission of each Application For Payment, Escrow Agent shall issue a current statement of (a) the value of the securities currently being deposited in lieu of retention and (b) the current value of all securities being held in escrow pursuant to this Escrow Agreement. Such statement shall be no more than 5 days old at the time of submission, shall be notarized or have a guarantee of signature, and shall be submitted to Contractor with a copy to University under separate cover. Contractor shall attach such original statement to each Application For Payment. The provisions of this Paragraph 5 shall not apply to securities consisting of monetary deposits as allowed by Paragraph 7 held by a bank as Escrow Agent, provided the bank provides monthly statements reflecting the status of the monetary deposits held by the bank to University and Contractor.

(6) If, at the request of Contractor, University deposits retention directly with Escrow Agent, Escrow Agent shall hold such retention for the benefit of Contractor until such time as the escrow created under the Contract is terminated. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when University deposits retention directly with Escrow Agent.

(7) University will allow Contractor to deposit the following securities in lieu of retention and direct the investment of the retention deposits into any of the following which at the time of payment are legal investments under the laws of the State of California:

- a. Direct obligations of the United States of America (including obligations issued or held in book-entry form on the books of the Department of the Treasury of the United States of America or any Federal Reserve Bank), or obligations the timely payment of the principal of and interest on which are fully guaranteed by the United States of America, or tax-exempt obligations which are rated in the highest rating category of a nationally recognized bond rating agency.
- b. Obligations, debentures, notes or other evidence of indebtedness issued or guaranteed by any of the following: Banks for Cooperatives, Federal Intermediate Credit Banks, Federal Home Loan Bank System, Export-Import Bank of the United States, Federal Financing Bank, Federal Land Banks, Federal Farm Credits, Government National Mortgage Association, Farmer's Home Administration, Federal Home Loan Mortgage Corporation, or Federal Housing Administration.
- c. Bonds of the State of California or those for which the faith and credit of the State of California are pledged for the payment of principal and interest.
- d. Interest-bearing bankers acceptances and demand or time deposits (including certificates of deposit) in banks, provided such deposits are either (1) secured at all times, in the manner and to the extent provided by law, by collateral security described in clauses a or b of this Paragraph 7 continuously having a market value at least equal to the amount so invested so long as such underlying obligations or securities are in the possession of the Securities Investors Protection Corporation, (2) in banks having a combined capital and surplus of at least One Hundred Million Dollars, or (3) fully insured by the Federal Deposit Insurance Corporation.
- e. Taxable government money market portfolios restricted to obligations with maturities of one (1) year or less, issued or guaranteed as to payment of principal and interest by the full faith and credit of the United States of America.
- f. Commercial paper rated in the highest rating category of a nationally recognized rating agency, and issued by corporations organized and operating within the United States of America and having total assets in excess of Five Hundred Million Dollars.

(8) Contractor shall be responsible for paying all fees, costs, and expenses incurred by Escrow Agent in administering the escrow account. These expenses and payment terms shall be determined by

Contractor and Escrow Agent. All fees, costs, and expenses of this Escrow Agreement and any transactions carried out hereunder shall be billed by Escrow Agent to Contractor. In the event that any fees, costs, or expenses shall remain unpaid in excess of 30 days from the date due, Escrow Agent may withhold such unpaid amount from any income distributable to Contractor, but shall not withhold such unpaid amount from any income distributable to University.

(9) Interest earned on the securities or the money market accounts held in escrow and all interest earned on the interest shall be for the sole account of Contractor and shall be held in escrow. Interest may be withdrawn by Contractor from time to time, without notice to University, only to the extent that the total amount held in escrow meets or exceeds the required amount of retention.

(10) Except as provided in Paragraph 9, Contractor shall have the right to withdraw all or any part of the escrow account only by written notice to Escrow Agent accompanied by written authorization from University to Escrow Agent stating that University consents to the withdrawal of the amount sought to be withdrawn by Contractor. University shall not be obligated to consent to any withdrawal to the extent of stop notice claims which cannot be satisfied from other funds then due and payable to Contractor.

(11) University shall have the right to draw upon the securities, any interest earned on the securities, and any interest earned on the interest in the event of default by Contractor. Upon 7 days written notice to Escrow Agent from University, with a copy to Contractor, Escrow Agent shall immediately convert the securities, any interest earned on the securities, and all interest earned on the interest to cash and shall distribute the cash as instructed by University. Escrow Agent shall have no duty to determine whether a default has occurred and may rely solely upon the written notice of such default from University.

(12) Upon receipt of written notification from University certifying that final payment is due under the Contract, Escrow Agent shall release to Contractor the amount, if any, by which the value of all securities and interest on deposit less escrow fees and charges of the escrow account exceeds 125% of all stop notice claims on file. Escrow Agent shall pay the remaining amount to University or as directed by University. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payment of fees and charges.

(13) Escrow Agent shall rely upon the written notifications from University and Contractor pursuant to this Escrow Agreement; and University and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion, and disbursement of the securities and interest as set forth herein.

(14) Escrow Agent shall have the right to terminate this Escrow Agreement upon 30 days notice to all parties hereunder. Upon receipt of such notice, University and Contractor shall appoint a successor Escrow Agent in writing and deliver written notice of such appointment to Escrow Agent. Thereupon, Escrow Agent shall deliver all assets in its custody to such successor Escrow Agent and all responsibility of Escrow Agent under this Escrow Agreement shall terminate; provided, however, if Contractor and University fail to appoint a successor Escrow Agent on or before the end of the 30 day notice period, then Escrow Agent is authorized and instructed to return all assets, documents, and other items in its custody to University and this Escrow Agreement shall be terminated without further instruction.

(15) The duties and responsibilities of Escrow Agent shall be limited to those expressly set forth in this Escrow Agreement; provided, however, that, with Escrow Agent's written consent, the duties and responsibilities in this Escrow Agreement may be amended at any time or times by an instrument in writing signed by all parties.

(16) Whenever Contractor tenders securities to be deposited in lieu of retention, an authorized representative of the Contractor shall declare under penalty of perjury that the securities are lien free and shall remain lien free during their retention by the Escrow Agent. The declaration shall be in the following form:

“The undersigned, on behalf of _____ (Name of Contractor) whose address is _____ (Street Address, City, State, Zip Code) represents, covenants and warrants that the securities tendered herewith are lien free and shall remain lien free during their retention by the Escrow Agent.

I, _____ (Name), hereby declare that I am the _____ (Title) of _____ (Name of Contractor), that I am duly authorized to make this representation, and that I declare under perjury under the laws of the State of California that the foregoing is true and correct.”

(Signature)

(Date)

(17) The names of the persons authorized to give written notice or to receive written notice on behalf of University and on behalf of Contractor in connection with this Escrow Agreement, and exemplars of their respective signatures, are as set forth below. Such names may be changed by written notice to the other parties.

On behalf of University:

1. Michael Reese, Vice Chancellor for
Business & Administration

(Name)

(Signature)

(209) 228-4430

(Telephone Number)

2. Dan Feitelberg, Vice Chancellor for
Planning & Budget

(Name)

(Signature)

(209) 228-4070

(Telephone Number)

On behalf of Contractor:

- 1.

(Name)

(Signature)

(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:

Contractor:

By

By

(Signature)
Michael Reese

(Printed Name)
Vice Chancellor for Business &
Administration Services

(Title)
(209) 228-4430

(Telephone Number)

(Signature)

(Printed Name)

(Title)

(Telephone Number)

By

By

(Signature)
Dan Feitelberg

(Printed Name)
Vice Chancellor for Planning & Budget

(Title)
(209) 228-4070

(Telephone Number)

(Signature)

(Printed Name)

(Title)

(Telephone Number)

Escrow Agent:

By:

(Signature)

(Printed Name)

(Title)

(Telephone Number)

COST PROPOSAL

Date: _____ Change Request No.: _____

Project Name: UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

Project No: 660175 1B 19900-1

Facility: DESGIN & CONSTRUCTION
UNIVERSITY OF CALIFORNIA MERCED
MERCED CALIFORNIA

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 Article 7.3 of the General Conditions for the method of computing the Contractor Fee.

Adjustment of the Contract Time (Include justification based upon the Contract Schedule):

Refer to Article 8 of the General Conditions.

(Days)

Adjustment of the Contract Sum (Total Additional Cost from Cost Proposal Summary):

\$

Refer to Article 7 of the General Conditions.

Submitted: _____
(Contractor)

Received: _____
(University's Representative)

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

COST PROPOSAL SUMMARY

Project Name: ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA MERCED
MERCED, CALIFORNIA

Project No.: 900165

Facility: University of California, Merced

Change Request No.:

Contractor Name:

		(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)				
	11. Insurance & Bonds (up to 2% of line 10)				
CONTRACTOR FEE	12. Sub-Sub (15% of line 10; col. 3)				
	13. Subcontractor (5% of line 10; col. 3)				
	14. Subcontractor (15% of line 10; col. 2)				
	15. Contractor (5% of line 10; col. 2 & 3)				
	16. Contractor (15% of line 10; col. 1)				
	17. Contractor Fee (Sum of lines 12-16)				
	18. Sum of lines 10, 11, & 17				

Actual Costs are taken from line 12 of the attached forms titled, "Supporting Documentation For the Cost Proposal Summary" for Contractor and each Subcontractor involved in the Extra Work.

SUPPORTING DOCUMENTATION FOR THE COST PROPOSAL SUMMARY

Contractor/Subcontractor Name: _____
Work Activity _____
Facility _____
University of California, Merced

Change Order Request No.: _____
Project No.: 907265

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	
	11. Insurance and Bonds: ____ % of line 10 (up to 2% of line 10)	
TOTAL	12. Sum of lines 10 and 11	

(Company Name)

(Signature) ⁽²⁾

(Title)

(Date)

(Company Name)

(Signature) ⁽³⁾

(Title)

(Date)

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.

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

PROJECT NO.: 661075 1B 19900

FIELD ORDER No.: 001

Project Name: UC Merced Environmental Site Work Project
Project Number: 661075 1B 19900
To CM/Contractor:
Address:

DESCRIPTION OF CHANGE:

Date:
PCO #:

Please provide a Cost Proposal within 7 days of receipt of this Field Order.

In accordance with the General Conditions, Article 7, Paragraph 7.3.6; As a condition to General Contractor's right to an adjustment of the Contract Sum, pursuant to Article 7.3.5.3; General Contractor must keep detailed and accurate records itemizing each element of cost and shall provide substantiating records and documentation, including time cards and invoices. Such records and documentation shall be submitted to and approved University's Representative on a daily basis.

The PTC must follow all procedures set forth and submit per Article 4 of the General Conditions.

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

PROJECT NO.: 661075 1B 19900

Estimated Adjustment
of Contract Sum:

\$0

Estimated Adjustment
of Contract Time:

By:

(Signature)

(Title)

Date:

Sara Mitchell
(University Representative)

(Signature)

Director of Construction Services
(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. Field Order shall only be used for Work currently under contract; and shall not be used to modify Option Sum or Option Time.

CHANGE ORDER

University of California Facility: Merced Campus

Change Order No. _____

Reference Field Order No. _____

PROJECT NAME:	ENVIRONMENTAL SITE WORK PROJECT		
PROJECT LOCATION:	UNIVERSITY OF CALIFORNIA MERCED, MERCED CALIFORNIA		
PROJECT NO:	660175 1B 19900	CONTRACT 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)
Contract Time Prior to this Change:		(Days)
Adjustment for this Change:		(Days)
Revised Contract Time:		(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:

By: _____
(Signature of University's Representative)

(Printed Name)

Date: _____

REVIEWED AND RECOMMENDED:

By: _____
(Signature of University's Designated Administrator)

(Printed Name)

Date: _____

FUNDS SUFFICIENT:

By: _____
(Signature from University's Accounting Office)

(Printed Name)

Date: _____

APPROVED:

UNIVERSITY: THE REGENTS OF THE
UNIVERSITY OF CALIFORNIA

(Printed or Typed Name)

By: _____
(Signature)

(Title)

Date: _____

ACCEPTED:

By: _____
(Contractor Signature)

(Printed Contractor Name)

Date: _____

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Exhibit 10

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information:

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: \$ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): \$ _____

- (4) Contract rights, including
 - (A) a right based on rescission, abandonment, or breach of contract, and
 - (B) the right to recover compensation for work not compensated by the payment.

Signature:

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

CONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

(CA Civil Code § 8136)

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information:

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: \$ _____

Check Payable to: _____

Exceptions:

This document does not affect any of the following:

Disputed claims for extras in the amount of \$ _____.

Signature:

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

UNCONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

(CA Civil Code § 8134)

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 Location: _____

Owner: _____

Through Date: _____

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below.

The claimant has received the following progress payment:

\$ _____

Exceptions:

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Signature:

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

UNCONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

(CA Civil Code § 8138)

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 Location: _____

Owner: _____

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions:

This document does not affect any of the following:

Disputed claims for extras in the amount of \$ _____.

Signature:

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

EXHIBIT 13A
 EXHIBIT
 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	2A	2B	3	4	5	6	7		8				
Full Name of Business	Portion of the Work	Dollar Amt	Street Address City, State & ZIP	Tel No / FAX No	Contact Name	Type of Owner- ship	License Info**		Business categories* (Check <u>all</u> categories that apply)				
							License Classification**	License No.**	SBE*	DBE*	WBE*	DVBE*	N/A
(GC)													
(Sub 1)													
(Sub 2)													
(Sub 3)													
						Column 6 – Type of Ownership SP = Sole Proprietorship P = Partnership C = Corporation JV = Joint Venture O = Other			Column 8 - Business Categories SBE = Small Business Enterprise DBE = Disadvantaged Business Enterprise WBE = Woman Business Enterprise DVBE = Disabled Veteran Business Enterprise				

* Regardless of tier, a completed Self-Certification must be submitted for the General Contractor and each Subcontractor shown on this Exhibit.

** List only those License Classification and Numbers relevant to this project.

PROJECT NO.: 661075 1B 19900

1 1

Sheet No. _____ of _____

[illegible]

Exhibit 13B
Final Distribution of Contract Dollars

EXHIBIT 14
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 (Initial, if certified, or certifiable, as small business by the Federal Small Business Administration applicable) (SBA). (Size standards by Standard Industrial Classification codes required by the Federal Acquisition Regulations, Section 19.102, may be found at www.sba.gov/size. The University may rely on written representation by the vendors regarding their status.) Annual average receipts, computed from the gross receipts for the last 3 fiscal years, do not exceed the amount listed in the MAXIMUM RECEIPTS TABLE below. The average annual receipt is computed by taking the sum of the gross receipts of the prior 3 fiscal years and dividing by 3.

MAXIMUM RECEIPTS TABLE	
Construction Services (by Contractor's License Classification):	AVERAGE ANNUAL RECEIPTS (Preceding 3 Years)
Class "A" - General Engineering	\$31,000,000
Class "B" - General Building	\$31,000,000
Class "C" - Specialty	\$13,000,000
Architectural & Engineering Services	\$4,500,000 (except landscape architectural services)
Landscape Architectural Services	\$6,500,000
Other services	For appropriate amount, see www.sba.gov/size

 Disadvantaged Business Enterprise (DBE) - a business concern which is at least 51% (Initial, if owned by one or more socially and economically disadvantaged individuals or, in the case applicable) 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 (Initial, if a woman or women who also control and operate it. "Control" in this context means applicable) exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

 Disabled Veteran Business Enterprise (DVBE) - a business that is at least 51% owned (Initial, if by one or more disabled veterans or, in the case of any publicly owned business, at least applicable) 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.

 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, Merced, is requesting the information contained in this form and the accompanying Report of Subcontractor Information.
- The Small Business Outreach Program Manager at the University of California, Merced, is responsible for maintaining the requested information. The contact information for the Small Business Outreach Program Manager may be found at:
<http://www.ucop.edu/purchserv/documents/sbdrmgr.pdf>
- The maintenance of information is authorized in part by Public Contract Code section 10500.5.
- Furnishing the information requested on this form is mandatory. If SBE, DBE, WBE and/or DVBE status is applicable, furnishing such information is mandatory.
- Failure to provide the information may be a violation of bidding procedures and/or breach of the contract and the University may pursue any and all remedies permitted by the provisions of the Contract Documents.
- The information on this form is collected for monitoring and reporting purposes in accordance with state law and University policy.
- The individual may access information contained in this form and related forms by contacting the Small Business Outreach Program Manager(s).

EXHIBIT 15
CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Name:

Contractor: _____

Project Number:

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 Occupancy has been issued by the University's Building Official _____ on _____, _____.

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.
2. Contractor shall be responsible for all Contract requirements except items or responsibilities of University set forth in Paragraph 2 above.
3. List of items to be completed or corrected: See Attached List

UNIVERSITY'S REPRESENTATIVE:

(Name of Firm)

(Signature)

(Typed or Printed Name)

(Title)

(Date)

UNIVERSITY: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

(Signature)

(Typed or Printed Name)

(Title)

(Date)

cc: Office of Risk Management

EXHIBIT 16
GUARANTEE/WARRANTY FORM

Date: _____
Project Name _____
Project Location _____
Project Number _____
GUARANTEE FOR: _____

(Specification SECTION and Contract No.)
(the "Contract"), between the Regents of the University of California ("University") and

(Name of Contractor)
("Contractor") and _____
(Name of Subcontractor)

Hereby guarantee to University that the portion of the work described as follows:

Which it has provided for the above referenced Project, is of good quality; free from defects; free from any liens, claims, and security interests; and has been completed in accordance with Specifications SECTION _____ and the other requirements of the Contract.

The undersigned further agrees that, if at any time within _____ months after the date of the guarantee the undersigned receives notice from University that the aforesaid portion of the Work is unsatisfactory, faulty, deficient, incomplete, or not in conformance with the requirements of the Contract, the undersigned will, within 10 days after receipt of such notice, correct, repair, or replace such portion of the Work, together with any other parts of the Work and any other property which is damaged or destroyed as a result of such defective portion of the Work or the correction, repair, or replacement thereof; and that it shall diligently and continuously prosecute such correction, repair, or replacement to completion.

In the event the undersigned fails to commence such correction, repair, or replacement within 10 days after such notice, or to diligently and continuously prosecute the same to completion, the undersigned, collectively and separately, do hereby authorize University to undertake such correction, repair, or replacement at the expense of the undersigned; and Contractor will pay to University promptly upon demand all costs and expenses incurred by University in connection therewith.

SUBCONTRACTOR

Signed;

Title: _____
Typed Name: _____

Name of Firm: _____
Contractor License Classification, Code, and Number: _____

Address: _____
CONTRACTOR

Signed: _____
Title: _____
Typed Name: _____
Name of Firm: _____

CTS EXCLUSION FENCE

**Project No.: 661075 1B
19900**

University of California,
Merced

Request for Information

RFI Number: _____

Date Created: ____/____/____

Answer

Required by: ____/____/____

Priority: ☐ Urgent ☐ High
☐ Normal ☐ Low

Submitted By

Company: _____ Subject: _____

Contact: _____ Discipline: _____

Telephone: _____ Category: _____

Email: _____ Reason: _____

Question

Suggestion

Answer

Received

By: _____ Date: ____/____/____

TO (NAME): _____

PROJECT: _____ PROJECT No.: **660175**
1B 19900

- Exhibit 22
Material Substitution Proposal

D. Submitted by Contractor: _____

Statement by Contractor that the proposed substitution is in full compliance with the requirements of the Contract Documents and Applicable Code Requirements.

Signature: _____ Date: _____

E. University Review Decision:

For Use Only by University's Representative			
<input type="checkbox"/> Accepted	<input type="checkbox"/> Rejected	<input type="checkbox"/> Revise and Resubmit	<input type="checkbox"/> See Attached

University's
Representative
Signature: _____

Date: _____

Exhibit 23 - Submittal Approval Page

By Submittal Item

Preparer Approval	University Approval
<p>Spec Section Sub Section Item No. Rev</p> <p>Description: _____</p> <p>By: _____</p> <p>Date: _____</p>	
University of California, Merced Approval	Design Team Approval
<p><input type="checkbox"/> Approved <input type="checkbox"/> Approved as Noted <input type="checkbox"/> Revise & Resubmit <input type="checkbox"/> Rejected</p> <p>Review is general and only for conformance with the design concept of the project and with the information given in the contract documents, and shall not be construed as reliving the Contractor of responsibility for omissions or errors, including performance, details, dimensions, materials, configuration, etc. Review of a separate item does not indicate acceptance of an assembly which the item functions.</p> <p>By: _____</p> <p>Date: _____</p>	

MATERIAL SUBMITTAL TRANSMITTAL / APPROVAL FORM

From: _____ Date: _____

Subcontractor: _____

Specification Section: _____ Sub-section: _____

Product: _____

Comply with Specifications: Yes No

Substitution: Yes No If Substitution, Provide Exhibit 22

Reviewed By: _____

Submitted to UCM: _____

UCM Received: _____

Submitted to Design Team/UC Rep. _____

Notes: Submittal copy sent via email to:

Item No.	Specification	Description of Material/Shop Drawing	Date	Status

By completing this form the undersigned General Contractor certifies that the material and shop drawings complies with all drawings and specifications of subject contract and the General Contractor has reviewed submittal procedures specified in division 1. Checking is for general conformance with the design concept only. Reviews are subject to all contract requirements. No contract requirements are waived unless specifically noted. General Contractor is responsible for identifying all proposed material substitutions, dimensions, quantities, techniques of construction and coordination with all other trades



Letter of Instruction

Detailed, Grouped by Each Number

Environmental Site Work Project
5200 N Lake Rd
Merced CA 95343

Project # 660175 1B 19900
Tel: 209 228-4479 Fax: 209 228-4468

University of California, Merced

Number: 001

Date: 5/9/2012

To:

From: University of California, Merced
|
5200 North Lake Road
Merced, CA 95343

Subject	Type	Reason
CTS Exclusion Fence		

Location	Reference	Not To Exceed Cost
		0

Description

The following information is hereby issued as a clarification or interpretation of the Contract Documents. This is a clarification or interpretation only and not intended to change the scope of the Work, the Contract Sum, or the Contract Time.

Signature

Signed Date

Prolog Manager

Printed on: 5/9/2012

PM2008UCMerced

Page 1 of 1

November 5, 2004
Revision: 3.1/2.1/1.2
LF/SF/BF:EX26

Exhibit 26
Letter of Instruction

EXHIBIT 27

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 General Contractor are accurate and complete. Supporting data for amounts incurred by General 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 General Contractor on behalf of any and all subcontractors or suppliers, of all tiers, or any person or entity under General Contractor, are accurate and complete. General 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 General 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 General 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 _____(State), on _____(Date).

(Signature)

(Print Name)

(Name of General Contractor)

EXHIBIT 28

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 _____ (State), on _____ (Date).

(Signature)

(Print Name)

(Name of Subcontractor)

CONTRACTOR / SUBCONTRACTOR DAILY REPORT

Contractor

/Subcontractor: _____

Daily Details

Date: ____ / ____ / ____

Temperature: A.M. ____ °F P.M. ____ °F

Weather: _____

Manpower *(List Quantity)*

Project Managers: _____	Other: _____	_____
Superintendents: _____	Other: _____	_____
Non-Working Foremen: _____	Other: _____	_____
Working Foremen: _____	Other: _____	_____
Journeyman: _____	Other: _____	_____
Apprentices: _____	Other: _____	_____
Laborers: _____	Other: _____	_____

Subcontractors on Site: _____

Work Performed in Each

Area: _____

**Equipment
Rented/Used:**

**Shortages/Discrepancies
of Delivered Materials:**

Delays/Problems:

**Unsafe or Hazardous
Conditions:**

Questions:

Last Safety Meeting

Date: ____/____/____

Topic: _____

Number of Additional Sheets Attached: _____

Signed: _____

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
UNIVERSITY OF CALIFORNIA, MERCED
MERCED, CALIFORNIA

PROJECT NO.: 661075 1B 19900

Printed Name: _____

Title: _____

HOT WORK PERMIT

BEFORE INITIATING HOT WORK, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE AN APPROPRIATE FIRE EXTINGUISHER IS READILY AVAILABLE!

This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch-Applied Roofing, and Cadwelding

INSTRUCTIONS

1. Verification below is to be completed by a qualified person.
2. The completed original is to be presented to the inspector prior to commencing work.
3. Must also be submitted to C.M. 24 hours before work is started to insure proper notifications are made.

HOT WORK BEING DONE BY:

☐ UCM Employee

☐ Contractor: _____

Date: _____ W.O.# _____

Start Time: _____

Location / Building / Floor _____

Nature of Job / Object _____

Name of Person Doing Hot Work _____

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for work.

Signed: _____

Permit	Date	Time
Expires		AM PM

Fire Detection Disabled Reactivated

Date / Time _____ _____

Initial: _____ _____

**THIS PERMIT IS GOOD FOR
ONE DAY ONLY**

Ref: -

Inspection No. -

REQUIRED PRECAUTIONS CHECKLIST

- ☐ Automatic Fire Detection Disabled?
- ☐ Available sprinklers, hose streams, and extinguishers are in service/operable?
- ☐ Hot work equipment is in good repair?

Requirements within 10 m (35 feet) or work:

- ☐ Flammable liquids, dust, lint, and oil deposits removed?
- ☐ Explosive atmosphere in area eliminated?
- ☐ Floors swept clean?
- ☐ Combustible floors wet down, covered with damp sand or fire-resistant sheets?
- ☐ Remove other combustibles where possible. Otherwise protect with fire-resistant tarpaulins of metal sheets?
- ☐ All wall and floor openings covered?
- ☐ Fire-resistant tarpaulins suspended beneath work?

Work on walls or ceiling / enclosed equipment:

- ☐ Construction is non-combustible and without combustible covering or insulation?
- ☐ Combustibles on other side of walls moved away?
- ☐ Danger exists by condition of heat into another area?
- ☐ Enclosed equipment cleaned of all combustibles?
- ☐ Containers purged of flammable liquids/vapors?

Fire Watch / Hot Work area monitoring:

- ☐ Fire watch will be provided during and for 30 minutes after work, including any coffee or lunch breaks?
- ☐ Fire watch is supplied with suitable extinguishers?
- ☐ Fire watch is trained in use of this equipment? And is sounding alarm?
- ☐ Fire watch may be required for adjoining areas, above and below?
- ☐ Monitor hot work area 30 minutes after job is completed.

Other precautions taken:

- ☐ Confined space entry permit required?
- ☐ Area protected with smoke or heat detection?
- ☐ Ample ventilation to remove smoke/vapor from work area?
- ☐ Lockout / tagout required?

Environmental Site Work Project
University of California Merced
Project No. 660175 1B 19900-1

EXHIBIT 30 – WELDING/HOT WORK PERMIT

Initial Inspection No.: _____ (CM)

Requests for Inspections and/or Tests

Environmental Site Work Project

Project No.: 661075 1b 19900-1
Tel: _____

University of California – Merced
Fax: _____

Date of Request: _____

Person Accompanying
Inspector: _____

Date of Inspection: _____

Cell Phone: _____

Installing Company: _____

Requested
Time: _____ Reference # _____

Description

System / Discipline

Location – Items to Be Inspected

Quality Control

Verified by: _____ on _____ (date).

IOR's Observations

Items Passed

Items Failed

Signature

Signed Date

University of California, Merced
Storm Water Pollution Prevention Plan
For
CTS Exclusion Fence

July 9, 2015

Prepared by:

Steven Perkins, CA RLA #2291
Principal, Design Nature
11348 N Via Milano Way
Fresno, CA 93730
QSD/QSP #20271

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Section 1

SWPPP Certification and Approval

1.1 Owner Developer Approval and Certification of the Storm Water Pollution Prevention Plan

Project Name: CTS Exclusion Fence

Project Location: UC Merced, 5200 Lake Rd., Merced CA

UCM Project Number: 660175 1B 19900-1

"I certify under penalty of law that this document and all Appendices were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Owner/Developer Signature

Date

Owner/Developer Name

Telephone Number

1.2 Annual Compliance Certification

By July 1 of each year, the Contractor shall submit an Annual Certification of Compliance to the appropriate Regional Water Quality Control Board RWQCB, stating compliance with the terms and conditions of the Permit and the SWPPP. A sample of the Annual Certification of Compliance Form is included in Appendix L. Completed Annual Certifications of Compliance and Approval shall also be incorporated into the SWPPP.

Section 2 SWPPP Amendments

2.1 SWPPP Amendment Certification and Approval

The SWPPP shall be amended:

- Whenever there is a change to construction activities or operations which may affect the discharge of pollutants to surface waters, groundwater, or a municipal separate storm sewer system (MS4); or
- If any condition of the Permit is violated or the general objective of reducing or eliminating pollutants in the storm water discharges has not been achieved. If the RWQCB determines that a Permit violation has occurred, the SWPPP shall be amended and implemented within fourteen (14) calendar days after notification by the RWQCB;
- Annually, prior to the defined rainy season; and
- When deemed necessary by the Owner/Contractor.

The following items will be included in each amendment;

- Who requested the amendment;
- The location of proposed change;
- The reason for change;
- The original Best Management Practice (BMP) proposed.

The amendments for the SWPPP along with the Owner Certification and the Owner Approval are to be incorporated as part of the SWPPP and uploaded to SMARTS as required. A sample

of the Owner Approval is shown in Appendix E - Amendments. All amendments are also to be listed in an Amendment Log similar to the sample also shown in Appendix E.

Section 3

Introduction and Project Description

3.1 Introduction

This project is located at the University of California Merced Campus approximately six (6) miles northeast of Merced, California. The physical address is 5200 North Lake Road, Merced, CA 95343. The project is known as the “CTS Exclusion Fence”. See Drawing No. 2020-01 by the University of California Office of Planning and Budget, Geospatial Analytics and Cartographic Services in the Appendix A – Project Plans and WPCD’s for information as to the project location. The project includes the removal of 13,074 linear feet of existing CTS exclusion fence material and replacement with new metal hardware cloth at the base of existing barbed wire fencing for salamander exclusion (see: “Removal of CTS Exclusionary Fence Mesh & Installation of New CTS Mesh” on the referenced plan). Salamander exit funnels shall also be installed in addition to the new salamander exclusion fencing at a spacing of approximately 200’. Existing fence segments not planned for replacement, as shown on the attached graphic, are to be inspected and repaired as needed prior to the installation of the hardware cloth for salamander exclusion. Six existing gates and one new gate adjacent to the Le Grand Canal (shown on the referenced plan) shall be retrofitted with a salamander barrier. The project schedule is to begin construction in October 2015 and is anticipated to be completed by November 14, 2015.

3.2 Site Features and Characteristics

The project site encompasses the perimeter of the UC Merced Campus Build-Out Land and the UCM 2020 Project Site Logistics Area and the North Bowl Parking Area Logistics area (shown on referenced plan). Actual land disturbance resulting from construction activities will be primarily the result of the shallow linear excavations (approx. 6” depth) required to allow the burial of the hardware cloth CTS exclusion fencing along the existing barbed wire fence lines. At locations of Salamander Exit Funnels an approximately 3’ area of existing vegetation is required to be removed from either side of the existing fence. Excavation will also be required at all new corner and gate, and brace posts within the proposed fencing. Corner posts shall be excavated min. 12” in diameter and to a depth of 3’. The corner posts shall be set in

concrete for their entire depth and crowned at ground level. All new line posts for the remainder of the new fencing shall be driven steel posts that do not require excavation.

The project area is adjacent to current as well as future development areas of the UC Merced campus, the campus solar farm, and existing agricultural uses including irrigated pasture and cropland. Existing vegetation in the undeveloped and non-farmed areas is dominated by annual grasslands.

The site features gently rolling topography with natural slopes ranging from 0-10%. Steeper slopes are found only on the constructed banks of the nearby canal levees. The drainage pattern along the existing and proposed fence lines site is generally from north to south. Two canals owned and operated by the Merced Irrigation District (MID), the Le Grand Canal and the Fairfield Canal meander nearby the project sites generally flowing from northeast to southwest. Surface runoff is generally conveyed overland in sheet flows, with occasional shallow surface swales. Some isolated wetlands (which are caused by the interception of surface flows by the raised canal banks) exist nearby to the project fence lines.

3.3 Project Risk Determination

The project risk level was determined using the SWRCB's Sediment Risk Factor Worksheet in SMARTS. A copy is included in Appendix C - Risk Determination Worksheet. Sediment risk the "R" Factor was calculated using information from the EPA Rainfall Erosivity Calculator. The "K" Factor and the "LS" Factor were calculated using the SWRCB values for Construction Sites. The Watershed Erosion Estimate was calculated at well below one ton per acre thus has a very low risk factor for site sediment. The site does not discharge directly into a 303(d)-listed watershed or into a waterbody that is designated Spawn & Cold & Migratory; therefore the site disturbance is a low risk to receiving waters. Based on these determinations the Project Combined Risk is a Level 1.

3.4 Site Estimates for Run-off

Estimates for the site Run-off Coefficient before and after construction are shown in Appendix D - Run Off Calculations. No impervious surface areas are being created by the Project.

3.5 Project / Water Pollution Control Schedule

The CTS Exclusion Fence project is scheduled to start in October 2015 and to be completed by November 14, 2015. The rainy season for the site typically begins on October 15th and ends on April 15th.

Any perimeter sediment and erosion controls and other BMP's as directed by the UCM SWPPM will be implemented prior to the commencement of any site disturbance or other construction activity, and will be maintained properly throughout the life of the project.

Fence construction is scheduled to commence in October 2015. Work may include the establishment of temporary equipment parking areas and material lay down areas. Track out of soil onto nearby roads from all construction traffic will be monitored during construction by the contractor and the UCM SWPPM. Appropriate controls for soil track out will be implemented as necessary and /or as directed by the UCM SWPPM.

All areas disturbed during fence construction will be compacted to approximate pre-construction conditions within less than 14 days from the completion of the fence construction activities.

The project is anticipated to be completed by November 14, 2015. Since this schedule includes dates that fall within the rainy period for the site, the contractor should be prepared in the case of project delay or in the unlikely event of a predicted rain event occurring during this period, to temporarily stabilize any unprotected disturbed soil areas by the use of erosion and sediment BMP's. Materials to be used include, but are not limited to, rolled erosion control products (RECP), fiber rolls, silt fencing, etc. as are shown on the WPCD's and/or as directed in the field by the University's Storm Water Pollution Prevention Manager (SWPPM). All construction materials including any temporary stockpiles of soil shall be covered and protected against rain and/or wind to prevent release of potential pollutants.

All disturbed areas will be inspected on a regular basis as is necessary to determine that all of the natural vegetation is being effective and maintenance will be performed as is required to correct any deficiencies. UC Merced will monitor the grow-in of the disturbed areas until a vegetative coverage of 70% of the original condition is obtained.

3.6 Contact Information/List of Responsible Parties

The Storm Water Pollution Prevention Manager (SWPPM) assigned to this project is:

Mark Maxwell, Assistant Project Manager

Telephone Number: (209) 228-4465

Mailing Address:

University of Merced

5200 North Lake Road, Merced, CA 95343

The SWPPM shall have primary responsibility and significant authority for the implementation, maintenance, inspection and amendments to the approved SWPPP. The SWPPM will be available at all times throughout the duration of the project. Duties of the SWPPM include, but are not limited to:

- Ensuring full compliance with the SWPPP and the Permit
- Implementing all elements of the SWPPP including, but not limited to:
 - Implementation of prompt and effective erosion and sediment control measures
 - Implementing all non-storm water management, materials, and waste management activities such as: monitoring discharges (dewatering, diversion devices); general site clean-up; vehicle and equipment cleaning; fueling and maintenance; spill control; ensuring that no materials other than storm water are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems; etc.
- Pre-storm inspections
- Preparation and implementation of Rain Event Action Plans (REAP's) if required.
- Storm event inspections
- Post storm event inspections
- Routine inspections as specified in the project's specifications or as described in this SWPPP
- Updates/ Amendments to the SWPPP, as needed
- Ensuring elimination of all unauthorized discharges
- The SWPPM shall be assigned authority by the Owner/Contractor to mobilize crews in order to make immediate repairs to the control measures

Section 4

Document References

The following documents are included in Appendix A– WPCD’s:

- Division 1 Specifications for CTS Exclusion Fence prepared by UCM.
- 5-Strand Barbed Wire Fence and CTS Exclusion Fence Specifications prepared by UCM.

The following documents are included in Appendix B – Other Plans and Permits:

- US Army Corps of Engineers 404 Permit #SPK-1999-00203 dated April 29, 2009.
- 401 Water Quality Certification from the CA Regional Water Quality Control Board – Central Valley Region dated April 20, 2009
- CA Department of Fish and Game Incidental Take Permit No. 2081-2009-010-04

The following documents are made a part of this SWPPP by reference:

- State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, National Pollutants Discharge Elimination System (NPDES) General Permit No. CA5000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity.
- CASQA Construction BMP Handbook – 2009 edition
- UC Merced Long Range Development Plan – 2009 Final

Section 5

Implementation

5.1 Objectives

This Storm Water Pollutions Prevention Plan (SWPPP) has six main objectives:

- Identify all pollutant sources, including sources of sediment that may affect the quality of storm water discharges associated with construction activity, from the construction site, and

- Identify non-storm water discharges, and
- Identify, construct, implement in accordance with a time schedule, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction, and
- Develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs), and
- Identify a sampling and analysis strategy and sampling and sampling schedule for discharges from construction activity which discharge directly into water bodies listed on Appendix 3 of the Permit (Clean Water Act Section 303(d) Water Bodies listed for Sedimentation), and
- For all construction activity, identify a sampling and analysis strategy, and a sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff.

This SWPPP conforms to the required elements of the General Permit No. CA5000002 issued by the State of California, State Water Resources Control Board (SWRCB). This SWPPP will be modified and amended to reflect any amendments to the Permit or any changes in construction or operations that may affect the discharge of pollutants from the construction site to surface waters, groundwater, or the municipal separate storm sewer system (MS4). The SWPPP will also be amended if it is in violation of any condition of the Permit or has not achieved the general objective of reducing pollutants in storm water discharges. The SWPPP shall be readily available on-site for the duration of the project.

5.2 Pollutant Source Identification and BMP Selection

5.2.1 Inventory of Materials and Activities that May Pollute Storm Water

The following is a list of construction materials that will be used and activities that will be performed that will have the potential to contribute pollutants, other than sediment, to storm water runoff (control practices for each activity are identified in Section 5.3.4 through 5.3.9:

- Vehicle fluids including oil, grease, petroleum and coolants
- Concrete materials associated with fence construction

- Fencing Materials

- General litter

Construction activities that have the potential to contribute sediment to storm water discharges include:

- Trenching for CTS fence construction.

Appendix C lists all Best Management Practices (BMPs) that have been selected for implementation in this project. Narrative descriptions of BMPs to be used during the project are listed by category in each of the following SWPPP Sections. Appendix Q includes a list, and/or copies of the fact sheets of all the BMPs selected for this project.

5.2.2 Existing (pre-construction) Control Measures

The following are existing (pre-construction) control measures encountered within the project site:

- None of the construction activities will discharge into the storm water system that exists within the developed campus area.

5.2.3 Nature of Fill Material and Existing Data Describing the Soil

Currently all fill materials are to be existing on-site soils. Should additional soil imported from offsite areas be needed to bring the construction areas to final grade, they shall be tested for contaminants prior to delivery to ensure they will not be a source for potential pollutants.

5.2.4 Erosion Control

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in storm water runoff. Erosion control BMP's protect the soil surface by covering and/or binding soil particles. This project will incorporate erosion control measures required by the WPCD's and other measures to be selected by the Contractor under the direction of the UC Merced SWPPM. This project will implement the following practices for effective temporary and final erosion control during construction:

- Preserve existing vegetation where required and when feasible.

- Apply temporary erosion control to active and non-active areas as required by the California Stormwater BMPs Handbook – Construction and the project construction documents. Reapply controls as necessary to maintain effectiveness throughout construction period.
- Implement temporary erosion control measures at regular intervals throughout the defined rainy season to achieve and maintain erosion protection for disturbed soil areas. Implement temporary erosion control measures prior any forecasted rain events.
- Control erosion in concentrated flow paths by use of fiber rolls, straw bales and/or silt fencing.
- At completion of construction, apply and maintain permanent erosion control to all disturbed soil areas.

Sufficient erosion control materials will be maintained and stored on-site to allow implementation in conformance with Permit requirements and described in this SWPPP. This includes implementation requirements for active areas and non-active areas that require deployment before the onset of rain.

The BMP Consideration Checklist in Appendix C indicates the BMPs that will be implemented to control erosion on the construction site; these are as follows:

- EC-1, Scheduling
- EC-2, Preservation of Existing Vegetation

Implementation of Erosion Control BMPs

BMPs will be deployed in a sequence to follow the progress of fence construction activities. As the locations of soil disturbance change, erosion and sedimentation controls will be adjusted accordingly to control storm water at the fencing perimeter. BMPs will be mobilized as follows:

Year-round:

- The UC Merced SWPPM will monitor weather using the National Weather Service reports or other similar reporting services to track conditions and alert personnel to the onset of potential rainfall events.
- Disturbed soil areas will be stabilized with temporary erosion control or with permanent erosion control as required within 14 days after construction is complete.

During the rainy season:

- Disturbed areas will be stabilized with temporary or permanent erosion control before rain events.
- Disturbed areas that are completed will be stabilized with permanent erosion control (soil stabilization).
- Prior to forecasted storm events, temporary erosion control BMPs will be deployed and inspected.

During the non-rainy season:

The project schedule will sequence construction activities with the installation of both erosion and sediment control measures. The construction schedule will be arranged as much as practicable to leave existing vegetation undisturbed.

5.2.5 Sediment Control

Sediment controls are structural measures that are intended to complement and enhance the selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have become detached and transported by the force of water. This project will incorporate sediment control measures required by the contract documents, the WPCD's and other measures selected by the Owner and Contractor.

Sufficient quantities of temporary sediment control materials will be maintained on site throughout the duration of the project to allow implementation of temporary sediment controls in the event of predicted rain, and for rapid response to failures or emergencies, in conformance with other Permit requirements and as described in this SWPPP. This includes implementation requirements for active areas and non-active areas before the onset of rain.

The BMP Consideration Checklist in Appendix C indicates all the BMPs that may be implemented to control sediment on the construction site. These include, but are not limited to;

- SE-1, Silt Fence

- SE-5, Fiber Rolls

Implementation of Temporary Sediment Controls

- During the rainy season, temporary sediment controls will be implemented at the draining perimeter of exposed soil areas, at the toe of slopes, and at outfall areas.
- During the non-rainy season, in the event of a predicted storm, the following temporary sediment control materials will be maintained on site: silt fence material, fiber rolls, and/or straw bales at the direction and approval of the UC Merced SWPPM.

5.2.6 Tracking Control

The following BMPs have been selected to reduce sediment tracking from the construction site onto private or public roads:

- TC-1, Stabilized Construction Entrance/Exit

Stabilized Construction Entrance/Exit

The site entrance/exit may be stabilized at the direction of the UC Merced SWPPM to reduce tracking of sediment as a result of construction traffic. Stabilized material will include rock aggregate and/or corrugated steel panels. The entrance will be flared where it meets the existing roadways to provide an adequate turning radius onto and off the construction site. The stabilized entrance/exit shall be delineated to prevent construction traffic from bypassing the BMP.

5.2.7 Wind Erosion Control

The following BMPs have been selected to control dust from the construction site:

- WE-1, Wind Erosion Control

Dust Control

- During windy conditions (forecasted or actual wind conditions of approximately 25 mph or greater), dust control will be applied to disturbed areas, including haul roads, to adequately control wind erosion.

5.2.8 Non-Storm Water Controls

An inventory of construction activities and potential non-storm water discharges is provided in section 5.3.1. The BMP Consideration Checklist in Appendix C and the following list indicates the BMPs that have been selected to control non-storm water pollution on the construction site. A narrative description of each BMP follows:

- NS-6, Illicit Connection/Illegal Discharge Detection Reporting
- NS-8, Vehicle and Equipment Cleaning
- NS-9, Vehicle and Equipment Fueling
- NS-10, Vehicle and Equipment Maintenance
- WM-8, Concrete Waste Management

Illicit Connection/Illegal Discharge Detection and Reporting

The contractor will implement Illicit Connection/Illegal Discharge Detection and Reporting throughout the duration of the project.

Vehicle and Equipment Operations

- Several types of vehicles and equipment may be used on-site throughout the duration of the project, including tracked vehicles, trucks and trailers, trenchers, augers, etc. Vehicle and Equipment Fueling and Maintenance will be utilized to prevent the discharge of fuel and other vehicle fluids. Vehicle cleaning will not be performed on-site.
- A temporary fueling area will be constructed in the Contractor's yard. All self-propelled vehicles will be fueled off-site or at the temporary fueling area. Fuel trucks, each equipped with absorbent spill clean-up materials, will be used for all on-site fueling, whether at the temporary fueling area or for mobile fueling elsewhere on the site. Drip pans will be used for all mobile fueling. The fueling truck will be parked on the fueling area for overnight storage.
- Drip pans or absorbent pads will be used for all vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids.

5.2.9 Waste Management and Materials Pollution Control

An inventory of construction activities, materials, and wastes is provided in Section 5.3.1. The BMP Consideration Checklist in Appendix C and the following list indicates the BMPs that have been selected to handle materials and control construction site wastes. A narrative description of each BMP follows:

- WM-1, Materials Delivery and Storage
- WM-2, Material Use
- WM-4, Spill Prevention and Control
- WM-5, Solid Waste Management
- WM-8, Concrete Waste Management
- WM-9, Sanitary/Septic Waste Management

Materials Delivery Storage and Use

- In general, BMPs WM-1 and WM-2 will be implemented to help prevent the discharges of construction materials during delivery, storage, and use.
- Spill clean-up materials, material safety data sheets, a material inventory, and emergency contact numbers will be maintained and stored in shipping containers (if applicable).

Spill Prevention Control

- BMP WM-4, Spill Prevention and Control, will be implemented to contain and clean-up spills and prevent material discharges to the storm drain system. Spill prevention is also discussed above in Material Delivery, Storage, and below in the following waste management and equipment maintenance sections.

Waste Management

- BMP WM-5, Solid Waste Management will be implemented to minimize storm water contact with waste materials and prevent waste discharges. Solid wastes will be loaded

directly into trucks for off-site disposal. When on-site storage is necessary, solid wastes will be stored in watertight dumpsters in the general storage area of the Contractor's yard. PCC rubble will be stockpiled in the general storage area and will be surrounded with sediment controls and covered when necessary. Solid waste, including rubble stockpiles, will be removed and disposed off-site at least every two (2) weeks.

Concrete Residual and Washout Wastes

- BMP WM-8, Concrete Waste Management, will be implemented and a concrete washout facility will be constructed and maintained. All excess concrete and concrete washout slurries will be discharged to the washout facility for drying. The minimum-sized washout, at 10 ft x 10 ft x 3.3 ft deep will be constructed in locations accessible for the concrete trucks. BMP maintenance, waste disposal, and BMP removal will be conducted as described in WM-8. Dried and cured concrete will be used as fill material if permitted by the City Engineer.
- Concrete waste solids/liquids will be removed and disposed of as required by WM-6. Concrete Waste Management will be implemented to contain and dispose of concrete waste. Dried and cured concrete waste will be disposed off-site during concrete washout maintenance activities.

Sanitary and Septic Wastes

The Contractor will implement BMP WM-9, Sanitary and Septic Waste Management, and portable toilets will be located and maintained at the Contractor's yard for the duration of the project. Weekly maintenance will be provided, and the toilets will be located away from concentrated drainage flow paths and vehicular traffic flow.

5.3 Construction BMP Maintenance, Inspection, and Repair

Inspections will be conducted as follows:

- After a 0.5" rain event
- At 24 hours intervals during an extended rain event
- Every 14 days during the rainy season

- Every 30 days during the dry season

Completed inspection checklists will be submitted to the UCM SWPPM within 24 hours of inspection. Copies of the completed checklists will be kept in the SWPPP.

A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs. A program for Maintenance, Inspections, and Repairs of BMPs is shown in Appendix G.

5.4 Post-Construction Storm Water Management

5.4.1 Post Construction Control Practices

- The following are the post-construction BMPs that are to be used at this construction site after all construction activities are complete.
- Sediment controls at all potential discharge points.
- Maintenance of all disturbed areas including the deployment of additional erosion control measures as required and as directed by the UCM SWPPM.

5.4.2 Operation/Maintenance after Project Completion

The post-construction BMPs that are described above will be maintained by the University of California, Merced and under the supervision of the UCM SWPPM.

5.5 Training

Section 3.5 shows the name of the Owner's Storm Water Pollution Prevention Manager (SWPPM). This person will be responsible for providing and overseeing training activities and sessions.

The training log showing both formal and informal training of various Contractor personnel is shown in Appendix I and should be used to record attendance at all training sessions.

On-going formal training sessions will be based on training information from one of the following organizations:

- State of California Regional Water Quality Control Board
- IECA, ABAG and/or AGC sponsored training
- USEPA sponsored training
- Other professional organizations and societies in the building and construction industry

In addition the Contractor will provide informal “tailgate” meetings.. Informal training will be conducted bi-weekly and will include the following topics:

- Erosion Control BMPs
- Sediment Control BMPs
- Good Housekeeping and Non-Storm Water BMPs
- Waste Management and Materials Pollutions Control BMPs
- Emergency Procedures specific to the construction site storm water management

Attendance at informal training meetings will also be documented using the training log form in Appendix I

Prior to the start of any grading and construction work all site personnel will be trained on materials storage and good housekeeping practices. Covered trash receptacles and dumpsters will be placed in accessible locations and scheduled to be dumped on as needed basis to ensure trash is completely contained. Concrete truck drivers will be trained on the proper use of concrete washouts. Training for equipment operators on spill prevention and instruction on how to utilize spill kits will be implemented by the contractor. The equipment parking lot, lay down areas, and any staging areas shall be inspected daily for leaks of any and all types of fluids. Fueling and maintenance of all equipment shall be conducted in a manner that prevents spills of hydrocarbons. Paints, solvents, glues, fertilizers, herbicides, insecticides, hydrocarbons, and other potential pollutants utilized and/or stored on site during this time will need to be safely and properly stored and construction personnel will be trained as to proper handling, disposal, and spill cleanup requirements. Portable toilets will be placed in areas away from vehicle and equipment activities to prevent possible damage or tipping and the potential release of pollutants.

5.6 List of Subcontractors

All contractors and subcontractors will be notified of the requirements for storm water management measures during the project. A list of contractors will be maintained and included in the SWPPP. If subcontractors change during the course of the project, the list will

be updated accordingly. A sample subcontractor notification letter and log is included in the SWPPP as Appendix J.

5.7 Other Plans/Permits

Appendix N includes copies of other local, state, and federal plans and permits.

5.7.1 SWPPP Preparer

This SWPPP was prepared by Steven Perkins who is the Principal of Design Nature in Fresno, CA. Contact phone: (559) 475-0078
CA RLA #2291 and Qualified SWPPP Developer -CASQA Certificate #20271.

Section 6 Monitoring Program and Reports

6.1 Site Inspections

The UC Merced SWPPM will inspect the site after a storm event of 0.5" or greater, at 24-hour intervals during extended rain events, at least every 2 weeks during the rainy season and at least once per month during the dry season. The result of all inspections and assessments will be documented, with a copy of the inspection provided to the Contractor within 24 hours of the inspection. Copies of the completed inspection checklists will be maintained in the SWPPP. Site inspections conducted for monitoring purposes will be performed using the inspection checklist shown in Appendix H.

The name(s) and contact number(s) of the assigned UCM inspection personnel are:

Assigned inspector/SWPPM: Mark Maxwell Contact phone: (209) 228-4465

6.2 Non-Compliance Reporting

If a discharge occurs or if the project receives a written notice of non-compliance, the Contractor will immediately notify the UC Merced SWPPM, and file a written report within 7 days of the discharge or a notice of non-compliance. The UC Merced SWPPP will file a written report to the Regional Water Quality Control Board (RWQCB) within 30 days of identification of any non-compliance. Corrective measures will implemented immediately following the

discharge notice or order. A sample Notice of Non-Compliance (NONC) form is provided in Appendix K. All discharges will be documented on a Discharge Reporting Log.

The written report to UC Merced and the subsequent report to the RWQCB will contain the following items:

The date, time, location, nature of operation, and type of unauthorized discharge, including the cause or nature of the notice or order;

The control measures (BMPs) deployed before the discharge event, or prior to receiving the notice or order;

The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence; and

An implementation and maintenance schedule for any affected BMPs

6.3 Record Keeping and Reports

Records shall be retained for a minimum of three (3) years for the following items:

- Site inspections
- Compliance certifications
- Discharge reports
- Approved SWPPP document and amendments

6.4 Sampling and Analysis Plan for Sediment

This project does not have the potential to discharge directly to a water body listed as impaired due to Sedimentation/Siltation and/or Turbidity pursuant to the Clean Water Act, Section 303(d) and therefore does not have sampling requirements.

6.5 Sampling and Analysis Plan for Non-Visible Pollutants

This Sampling and Analysis Plan (SAP) for Non-Visible Pollutants describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in storm water discharges

from the project site and off-site activities directly related to this project, in accordance with the requirements of Section B of the General Permit, including SWRCB Resolution 2001-046.\

6.5.1 Scope of Monitoring Activities

The following construction materials, wastes or activities, as identified in Section 5.3.1, are potential sources of non-visible pollutants to storm water discharges from the project.

- Oil, grease, petroleum
- Concrete and related materials
- Miscellaneous Construction materials
- Fencing Materials

Sampling for non-visible pollutants will be conducted when (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to a rain event; and (3) there is a potential for discharge of non-visible pollutants to surface waters or drainage systems.

6.5.2 Monitoring Strategy

Sampling Schedule

Samples for the applicable non-visible pollutant(s) and a sufficiently large uncontaminated background sample shall be collected during the first two (2) hours of discharge from rain events that result in sufficient discharge for sample collection. Samples shall be collected during daylight hours (sunrise to sunset) and shall be collected regardless of the time of year, status of the construction site, or day of the week.

In conformance with the U.S. Environmental Protection Agency definition, a minimum of 72 hours of dry weather will be used to distinguish between separate rain events.

Collection of discharge samples for non-visible pollutant monitoring will be triggered when any of the following conditions are observed during the required inspections conducted before or during a storm event:

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or storage container, or

(3) protected by temporary cover and containment that prevents storm water contact and runoff from the storage area.

- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up prior to the next rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- An operational activity, including but not limited to those in Section 6.5.1, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the next rain event, (2) applicable MPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Storm water runoff from an area contaminated by historical usage of the site has been observed to combine with storm water runoff from the site, and there is the potential for discharge of non-visible pollutants to surface waters or storm sewer systems.

Sampling Locations

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrences or use; accessibility for sampling, personnel safety; and other factors in accordance with the applicable requirements in the Permit.

If during inspections the presence of a material storage, waste storage, or operations area with spills or the potential for the discharge of non-visible pollutants to surface waters or a storm sewer system that was in an unplanned location, sampling locations will be selected using the same rationale as that used to identify locations described above.

6.5.3 Monitoring Preparation

Samples on the project site will be collected by the following Contractor sampling personnel:

Name: BSK Associates

Phone Number: 559-497-2880

Prior to the rainy season, all sampling personnel and alternates will review the SAP qualifications for personnel describing required environmental sampling training and experience.

An adequate stock of monitoring supplies and equipment for monitoring non-visible pollutants will be available on the project site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool-temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule.

Supplies maintained at the project site will include, but are not limited to, surgical gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and Chain of Custody (COC) forms. The Contractor will obtain and maintain the field-testing instruments, as identified in Section 6.5.6 for analyzing samples in the field by Contractor sampling personnel.

Samples on the project site will be collected by the following:

Company Name	BSK Associates
Address	567 W. Shaw Avenue, Suite C-1, Fresno CA 93704
Telephone Number	(559) 497-2880
Point of Contact	Noel Willbanks

Qualifications of designated Contractor personnel describing environmental sampling training and experience are to be provided.

SWPPM will contact BSK Associates 4 hours prior to a predicted storm event and if one of the triggering conditions is identified during an inspection before, during, or after a storm event to ensure that adequate sample collection personnel, supplies and field test equipment for monitoring non-visible pollutants are available and will be mobilized to collect samples on the project site in accordance with the sampling schedule.

BSK Associates will obtain and maintain the field-testing instruments, as identified in Section 6.5.6, for analyzing samples in the field by their sampling personnel.

6.5.4 Analytical Constituents

Identification of Non-Visible Pollutants

Table 6-1 lists the specific sources and types of potential non-visible pollutants on the project site and the applicable water quality indicator constituent(s) for that pollutant.

Table 6-1

Potential Non-Visible Pollutants and Water Quality Indicator Constituents

Pollutant Source	Pollutant	Water Quality Indicator Constituent
Concrete	pH	pH
Fertilizer	pH, Nitrates	pH, Nitrates
Herbicides	Metals	Metals
Petroleum	Hydrocarbons VOCs	Hydrocarbons VOCs
Solvent, Thinners	Hydrocarbons VOCs	Hydrocarbons VOCs

6.5.5 Sample Collection and Handling

Sample Collection Procedures

Samples of discharge will be collected at the designated sampling locations determined by the UCM SWPPM for observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical site usage areas that triggered the sampling event.

Grab samples will be collected and preserved in accordance with the methods identified in Table 6-2, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants," provided in Section 6.5.6. Only personnel trained in proper water quality sampling will collect samples.

Samples will be collected by placing a separate lab-provided sample container directly into a stream of water down gradient and within close proximity to the potential non-visible pollutant discharge location. The separate lab-provided sample container will be used to collect water, which will be transferred to sample bottles for laboratory analysis. The up gradient and uncontaminated background samples shall be collected first prior to collecting the down gradient to minimize cross-contamination. The sampling personnel will collect the water up gradient of where they are standing. Once the separate lab-provided sample container is filled, the water sample will be poured directly into sample bottles provided by the laboratory for the contaminant(s) being monitored.

To maintain sample integrity and prevent cross-contamination, sampling collection personnel will:

- Wear a clean pair of surgical gloves prior to the collection and handling of each sample at each location.
- Not contaminate the inside of the sample bottle by not allowing it to come into contact with any material other than the water sample.
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection.
- Not leave the cooler lid open for an extended period of time once samples are placed inside.
- Not sample near a running vehicle where exhaust fumes may impact the sample.

- Not touch the exposed end of a sampling tube, if applicable.
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample bottles. Not eat, smoke, or drink during sample collection.
- Not sneeze or cough in the direction of an open sample bottle.
- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place.
- Decontaminate sampling equipment prior to sample collection using a TSP-soapy water wash, distilled water rinse, and final rinse with distilled water.
- Dispose of decontamination water/soaps appropriately; i.e., not discharge to the storm drain system or receiving water.

Sample Handling Procedures

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, documented on a Chain of Custody form provided by the analytical laboratory, sealed in a re-sealable storage bag, placed in an ice-chilled cooler, at as near to 4 degrees Celsius as practicable, and delivered within 24 hours to the following California state-certified laboratory:

Laboratory Name:	BSK Analytical Laboratories
Address:	1414 Stanislaus Street
Telephone Number:	(559) 497-2888
Point of Contact:	Noel Willbanks

Immediately following collection, samples for field analysis will be tested in accordance with the field instrument manufacturer's instructions and results recorded on the Sampling Activity Log.

Sample Documentation Procedures

All original data documented on sample bottle identification labels, Chain of Custody forms, Sampling Activity Logs, and Inspection Checklists will be recorded using waterproof ink. These will be considered accountable documents. If an error is made on an accountable document, the individual will make corrections by lining through the error and entering the

correct information. The erroneous information will not be obliterated. All corrections will be initialed and dated. Copies of the Sampling Activity Log and Chain of Custody form are provided in Appendix P.

Sampling and field analysis activities will be documented using the following:

- Sample Bottle Identification Labels: Sampling personnel will attach an identification label to each sample bottle. At a minimum, the following information will be recorded on the label, as appropriate:
 - Project name
 - Project number
 - Unique sample identification number and location.
 - [project Number]-[Six digit sample collection date]-[Location]
 - (Example: OG5304-081801~Inlet472).
 - Quality assurance/ quality control (QA/QC) samples shall be identified similarly using a unique sample number or designation
 - (Example: OG5304-081801-DUPI).
 - Collection date/ time (No time applied to QA/ QC samples)
 - Analysis constituent
- Sampling Activity Logs: A log of sampling events will identify:
 - Sampling date
 - Separate times for collected samples and QA/ QC samples recorded to the nearest minute
 - Unique sample identification number and location
 - Analysis constituent
 - Names of sampling personnel
 - Weather conditions (including precipitation amount)
 - Field analysis results
 - Other pertinent data

Chain of Custody (COC) forms: All samples to be analyzed by a laboratory will be accompanied by a COC form provided by the laboratory. Only the sample collectors will sign the COC form over to the lab. COC procedures will be strictly adhered to for QA/QC purposes.

Storm Water Quality Construction Inspection Checklists: When applicable, the Contractor's storm water inspector will document on the checklist that samples for nonvisible pollutants were taken during a rain event.

6.5.6 Sample Analysis

Samples will be analyzed for the applicable constituents using the analytical methods identified in Table 6-3, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants" in this section.

Table 6-2 (Sample)
 Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants

Constituent	Analytical Method	Minimum Sample Volume	Sample Bottle	Sample Preservation	Reporting Limit	Maximum Holding Time
VOCs-Solvents	EPA 8260B	3 x 40 mL	VOA-glass	Store at 4' C, HCl to pH<2	1 g/L	14 days
SVOCs	EPA 8270C	1 x 1 L	Glass-Amber	Store at 4' C	10 g/L	7 days
Pesticides/PCBs	EPA 8081A18082	1x1L	Glass-Amber	Store at 4' C	0.1 g/L	7 days
Herbicides	EPA 8151A	1 x 1 L	Glass-Amber	Store at 4' C	Check Lab	7 days
BOD	EPA 405.1	1 x 500 mL	Polypropylene	Store at 4' C	1 mg/L	48 hours
COD	EPA410.4	1 x 250 mL	Glass-Amber	Store at 4' C, H2SO4 to pH<2	5 mg/L	28 days
DO	SM 4500-0 G	1 x 250 mL	Glass-Amber	Store at 4' C	Check Lab	8 hours
pH	EPA 150.1	1 x 100 mL	Polypropylene	None	Unit less	Immediate
Alkalinity	SM 2320B	1 x 250 mL	Polypropylene	Store at 4' C	1 mg/L	14 days
Metals (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, Se, Na, Th, Va, Zn)	EPA 6010B/7470A	1 x 250 mL	Polypropylene	Store at 4' C, HN03 to pH<2	0.1 mg/L	6 months
Metals (Chromium VI)	EPA 7199	1 x 500 mL	Polypropylene	Store at 4' C	1 g/L	24 hours

For samples collected for field analysis, collection, analysis and equipment calibration

will be in accordance with the field instrument manufacturer's specifications.

The following field instrument(s) will be used to analyze the following constituents:

Field Instrument NTU Meter

Constituent Turbidity

The instrument(s) will be maintained in accordance with manufacturer's instructions.

The instrument(s) will be calibrated before each sampling and analysis event.

Maintenance and calibration records will be maintained with the SWPPP.

6.5.7 Quality Assurance/Quality Control

For an initial verification of laboratory or field analysis, duplicate samples will be collected at a rate of 10 percent or 1 duplicate per sampling event. The duplicate sample will be collected, handled, and analyzed using the same protocols as primary samples. A duplicate sample will be collected at each location immediately after the primary sample has been collected. Duplicates will be collected where contamination is likely, not on the background sample. Duplicate samples will not influence any evaluations or conclusions; however, they will be used as a check on laboratory quality assurance.

6.5.8 Data Management and Reporting

A copy of all water quality analytical results and QA/ QC data will be submitted to the Owner/Developer within 5 days of sampling (for field analyses) and within 30 days (for laboratory analyses).

Lab reports and COCS will be reviewed for consistency between lab methods, sample identifications, dates, and times for both primary samples and QA/ QC samples. All data, including COC forms and Sampling Activity Logs, shall be kept with the SWPPP.

6.5.9 Data Evaluation

An evaluation of the water quality sample analytical results, including figures with sample locations, will be submitted to the Owner/Developer with the water quality analytical results and the QA/ QC data.

Should the runoff/ down gradient sample show an increased level of the tested contaminant relative to the background sample, the BMPs, site conditions, and surrounding influences will be assessed to determine the probable cause for the increase. As determined by the site and data evaluation, appropriate BMPs will be repaired or modified to mitigate discharges of non-visual pollutant concentrations. Any revisions to the BMPs will be recorded as an amendment to the SWPPP.

6.5.10 Change of Conditions

Whenever SWPPP monitoring, pursuant to Section B of the General Permit, indicates a change in site conditions that might affect the appropriateness of sampling locations or introduce additional non-visible pollutants of concern, testing protocols will be revised accordingly. All such revisions will be recorded as amendments to the SWPPP.

Section 7

Post-Construction Storm Water Management Plans

7.1 Post Construction Objectives

The objective of the post-construction storm water plan is to control the discharge of pollutants in storm water runoff from the site once the construction activities are complete and the site is fully stabilized.

The permit requires that BMP's used to reduce pollutants in storm water discharge after all construction phases have been completed at the site have been installed and that operational and maintenance of control practices are properly addressed. All disturbed areas of the construction site must be stabilized prior to submittal of the Notice of Termination. Disturbed areas are deemed stabilized once one of the following criteria is met:

- 1) A uniform vegetative cover with 70% of pre-construction coverage has been established on remaining exposed areas, or
- 2) Equivalent approved stabilization measures have been employed.

The construction site will continue to be visually monitored following the stabilization of exposed areas to verify that the stabilization measures are effective in controlling the discharge of pollutants into storm water runoff.

Legend:

- ## Disclosure



NORTH CAROLINA STATE UNIVERSITY

SCALE: 1"=800'

Date: 11/3/2015

UNIVERSITY OF CALIFORNIA, MERCED
OFFICE OF PLANNING & BUDGET
GEOSPATIAL ANALYTICS
&
CARTOGRAPHIC SERVICES

Attachment B - Existing CTS Exclusion
Barrier Condition Photos August 5, 2015



Attachment C - CTS Exit Funnels
Condition Photos August 5, 2015



**UNIVERSITY OF CALIFORNIA, MERCED (UC MERCED)
ENVIRONMENTAL SITE WORK PROJECT
CALIFORNIA TIGER SALAMANDER (CTS) EXCLUSION BARRIER**

PROJECT DESCRIPTION

The proposed UC Merced Environmental Site Work Project, California Tiger Salamander (CTS) Exclusion Barrier implements the University's environmental permit obligations and mitigation requirements. The environmental site work consists of constructing an environmental barrier that includes removing existing mammal borrows, removing existing CTS exclusion barrier and CTS exit funnels, repairing an existing fence, installing new fence, repairing an existing gate, installing new gates, installing a new CTS exclusion barrier and CTS exit funnels, and installing new CTS gate crossings. The items are described in further detailed in the Scope of Work section and will occur at the locations shown in Attachment A.

- 1) Removal of existing CTS exclusion barrier material (plastic mesh) on an existing fence (see Attachment B) that is approximately 13,074 linear feet in length;
- 2) Removal of the existing CTS exclusion barrier material debris within a minimum 20' distance from the fence centerline or as needed;
- 3) Removal of an existing electric fence wire (see Attachment B) along the fence perimeter that is approximately 13,074 linear feet in length;
- 4) Removal of existing CTS exit funnels and cattle fence barrier (see Attachment B) along the fence perimeter that is approximately 13,074 linear feet in length;
- 5) Repair and replace existing fence (see Attachment A) that is approximately 1,510 linear feet as necessary to install the CTS exclusion barrier material;
- 6) Install CTS exclusion barrier material consisting of metal hardware cloth along an existing fence that is approximately 1,510 linear feet in length.
- 7) Install new cattle fence with CTS exclusion barrier material consisting of metal hardware cloth that is approximately 3,774 linear feet in length.
- 8) Install new cattle fence with CTS exclusion barrier material consisting of metal hardware cloth that is approximately 314 linear feet in length (ADD ALTERNATE BID ITEM).
- 9) Install a CTS crossing barrier at (1) one existing single gate (see Attachment C);
- 10) Install (2) two new single gates with a CTS crossing barrier along the fence (see Attachment C) and
- 11) Install new CTS exit funnels in the same location as the new CTS exclusion barrier.

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SEQUENCE

First Phase Fencing: Substantial completion of the first phase of fencing is March 1, 2016. First Phase fencing is the following segments per Attachment A: 1,510 lf Existing Fence and New Cattle Fence up to and including Add Alternate Fence Segment

Second Phase Fencing: Substantial completion of the second, and final, phase of fencing is June 1, 2016. Second Phase fencing is all remaining New Cattle Fence per Attachment A as well as required debris removal of existing CTS barrier material per Attachment B.

GENERAL REQUIREMENTS

CTS Exclusion Barrier

The removal of the existing CTS exclusion barrier and installation of the new CTS exclusion barrier will be in accordance with the following requirements in order to minimize effects on CTS and San Joaquin kit fox (SJKF):

1. UC Merced will retain Designated Biologists (DB) for this project to address requirements related to CTS and SJKF. The DBs will be approved in advance by the US Fish & Wildlife Service (USFWS) and California Department of Fish & Wildlife (CDFW). The DBs will conduct any required preconstruction surveys and will monitor the removal and installation of the CTS exclusion barrier and all associated ground disturbance to ensure that existing resources are protected.
2. CTS exclusion barrier removal and installation will be conducted only when the ground surface is dry (no recent rain).
3. Within one week prior to CTS exclusion barrier removal and installation, the DB will identify and mark burrows within 15 feet of the fence.
4. The DB for SJKF will conduct a preconstruction survey within a 250-foot buffer around the work area in accordance with UC Merced's Biological Opinion (USFWS) and Incidental Take Permit (CDFW) to establish whether existing burrow complexes within the work area provide suitable habitat for SJKF. The DB for SJKF will monitor all potential, atypical, active, and known SJKF dens identified within the work area (15 feet along the fence line) during the preconstruction survey for a minimum of three consecutive nights in accordance with the Incidental Take Permit. If an active kit fox den is located within or immediately adjacent to the work area, the USFWS and CDFW will be consulted to determine how to proceed.
5. Existing CTS exclusion barrier removal and installation of new CTS exclusion barrier will occur first in the areas that have rodent burrows within 15 feet along the fence line. The DB for CTS—and SJKF, as necessary—will be present for all removal and installation activities within 15 feet of a rodent burrow.
6. In the areas that have rodent burrows within 15 feet of the fence line, the DB for CTS will use a fiber optic scope to survey burrows for CTS prior to any ground disturbing activities. If CTS are observed, the burrow location will be marked and an appropriate buffer around the burrow will be designated by the DB. Work activities within this buffer area will be minimized. In general, equipment will exclude from the buffer area and all CTS exclusion barrier removal and installation will be conducted by hand under direction supervision of the DB. If a burrow cannot be fully evaluated by scope,

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the DB will excavate and collapse the burrow within the work area. Any CTS encountered will be relocated to appropriate locations on the UC Merced conservation lands. If determined to be necessary by the DB, temporary plastic piping may be installed by Contractor in portions of burrow to prevent burrow collapse (see Unit Price). All unoccupied burrows extending below the fence line will be collapsed by the DBs for CTS and SJKF (as necessary).

7. The existing CTS mesh exclusion barrier (see Attachment B) will be removed by detaching it from the posts and pulling the material out by hand and/or using low ground pressure equipment such as an ATV or tractor, except in occupied burrow exclusion buffers described above. In some areas because the existing mesh may be hardened and brittle, pulling out the mesh may not be feasible. In these areas, the ground surface may be scarified immediately along the fence to facilitate removal of the old mesh. The posts and the barbed wire will not be removed (the barbed wire fence marks the property boundary and is necessary for grazing management of the property).
8. Immediately following the removal of the existing CTS exclusion barrier, the proposed hardware cloth exclusion barrier and exit funnels will be installed and attached by hand to the existing fence posts and lower wire. As needed expand the existing trench or create a new trench for installing the new exclusion barrier.
9. The DB for CTS will inspect the installation of the CTS exclusion barrier, exit funnels, and gate barriers on a minimum two times a week during construction to ensure that they are installed as described in the specifications and function as intended.
10. Should CTS be encountered during CTS exclusion barrier removal or installation, work within 100 feet of that area will stop until the DB relocates the CTS into a burrow nearby within the adjacent Campus Natural Reserve.
11. A Worker Environmental Awareness Training Program will be given by the DB for all personnel prior to their involvement in work activities. The program will focus on the measures that are relevant to employee's personal responsibility, what to do if species are observed, penalties for non-compliance, etc. The program will include pictures of CTS and SJKF and brief explanation of their life histories and dispersal habits. The DB will further provide the following instructions:
 - DO NOT disturb (dig/poke around in) any burrows anywhere.
 - If a CTS is found, DO NOT pick it up; do not disturb it. Contact the DB immediately to come to the site and relocate the animal. Suspend CTS exclusion barrier removal within 100 feet of that area until the DB instructs that CTS exclusion barrier removal/installation can resume.
 - If an active SJKF den is detected within or immediately adjacent to the work area, construction will stop within 250 feet of the den until the DB instructs that CTS exclusion barrier removal/installation can resume.
12. The completed job will be workmanlike and present a good appearance. The installer and other persons will conduct all work in accordance with proper safety procedures.
13. After the CTS exclusion barrier has been installed, a site inspection will be made to determine if the materials and placement adhered to the specifications.
14. The University will send a close out letter to the CDFW and the USFWS, indicating that the CTS exclusion barrier removal and installation activities have been completed. Also, the letter will document any sightings of CTS or SJKF or problems encountered during the process.

MATERIALS AND INSTALLATION SPECIFICATIONS

SITE WORK

Removal of existing CTS Exclusion Barrier material

Please note that this specification is only applicable to Item No. 1. The existing CTS exclusion barrier shall be removed from the ground along approximately 13,074 lf of existing fence. The existing CTS exclusion barrier shall be removed by detaching it from the posts and pulling the material out by hand and/or using low ground pressure equipment such as an ATV or tractor. In some areas because the existing mesh may be hardened and brittle, pulling out the mesh may not be feasible. In these areas, the ground surface may be scarified immediately along the fence to facilitate removal of the old mesh. All CTS mesh material including small fragments shall be removed from the area as needed.

Ground disturbance associated with the CTS exclusion barrier removal would be up to approximately 6 inches below the surface. During the summer months when the work is proposed, CTS are not expected at this depth within any existing burrows due to the higher temperatures closer to the ground surface.

Removal of Existing Electric Fence Wire

Please note that this specification is only applicable to Item No. 1. An existing electric fence wire located along the perimeter of the approximately 13,074 foot-long barbed-wire fence shall be removed.

CTS Exclusion Barrier Design

Material

The CTS exclusion barrier consists of metal hardware cloth with a mesh diameter of between 1/4 inch and 2/5 inch. The hardware cloth shall be a minimum of 19 gauge and galvanized with a protective layer of zinc to withstand corrosion.

The smooth wire used shall be 12-1/2 minimum gauge with a minimum Class III galvanized protective coating per ASTM-854. The minimum wire strand breaking strength shall be 1,400 pounds or 135,000 psi.

Installation Specifications

The CTS exclusion barrier shall be installed at the base of the barbed wire fence to a minimum buried depth of 6 inches and an above ground minimum height of 1'-0" (Figure 1). The proposed height of the CTS exclusion barrier (minimum of 1'-0") is sufficient to prevent CTS passage from the adjacent preserve/buildout lands into the UC Merced 2020 Project construction area and is consistent with previous CTS exclusion barrier heights authorized by the USFWS and CDFW in other locations.

The trench for installing the new exclusion barrier shall be located no more than 3 inches from the existing fence posts unless otherwise approved in writing by the University. The hardware cloth shall be affixed securely approximately every 1'-0" with galvanized wire or metal clips to the fence posts and lower wires of the fence on the side receiving the most pressure (i.e., from livestock). As needed, high-tensile single strand smooth wire may be added to the existing fence to facilitate the installation of the hardware cloth.

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CTS Exit Funnels

Materials

The CTS exit funnels shall be constructed of 1/8-inch metal hardware cloth with an 8-inch diameter opening facing the construction area and a 3 inch diameter exit hole at the other end. Galvanized metal clips will be used to fasten the CTS exit funnels to the fence, and a hollow concrete block will be placed over each funnel to protect them from cattle trampling.

Installation Specifications

CTS exit funnels for salamanders shall be installed as shown in Figure 2 and at spacing of every 200 feet, or as otherwise directed by the University in certain locations, along the existing fence fitted with hardware cloth for CTS exclusion barrier.

Prior to installation, the contractor shall cut all vegetation within 3 feet of each funnel location along the outside of the fence (on “Buildout Lands” and “University Community North Lands” as shown in Attachment A) to no higher than 1 inch. The CTS funnel shall be installed flush with the ground surface facing the construction area and inverted slightly on the opposite site as shown in Figure 2. Galvanized wire clips shall be used to securely fasten the exit funnel to the CTS exclusion barrier. There shall be no gaps between the CTS exit funnels and the hardware cloth exclusion barrier.

Following installation of the hardware cloth exit funnels, a 12” x 8” x 12” hollow concrete “column” block shall be placed around each funnel to protect them from trampling by cattle as shown in Figure 2. Two 3/8” (type 3) or 1/2” (type 4) steel rebar stakes with a grade 40 or grade 60 designation shall be installed on either side of the concrete block to anchor it firmly to the ground. The tops of each stake may be bent as needed to hold the concrete block in place.

CTS Gate Crossing Barrier

Material

ACO K100S channel drain (or comparable) made of polymer concrete, plastic, or fiberglass with a 4 to 6 inch width and between 5 and 8 inches deep. The bottom of the trench drain shall be u-shaped.

Installation Specifications

A CTS gate-crossing barrier (see Figure 3 shall be installed at the base of all gates at the locations shown (see Attachment A). Any existing CTS exclusion fencing at the base of the existing gates shall be removed. The proposed CTS gate crossing barriers would be installed along the entire length of each gate on the adjacent buildout lands to prevent CTS from entering the UC Merced construction area. The CTS gate crossing barriers would be constructed using a buried, open-top polymer concrete, plastic, or fiberglass channel drainpipe with a 4 to 6 inch width. The barrier shall be constructed along the side of the gate that is outside of the construction area using a buried and an ACO K100S channel drain (or comparable) made of polymer concrete, plastic, or fiberglass with a 4 to 6 inch width and between 5 and 8 inches deep. The bottom of the trench drain shall be u-shaped. No grating is to be installed.

The buried trench drain shall extend a minimum of 6 inches beyond the full width of each gate, as shown in Figure 3 and the top of the trench drain shall be flush with the ground surface so that no portion of the drain extends above ground. At either end of the drain, the ground surface shall be gently sloped on the

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buildout lands and University Community North lands of the gate/fence to allow CTS to escape from the drain.

Installation of New Gates and CTS Gate Crossing Barrier

Materials

The new single gates shall be 16-foot wide Powder River Classic gates (or comparable grade gate upon written approval of the University). The gates shall have an overall height of 52"; frame of 1.66" O.D. tube, 13-gauge steel; horizontal rails (5) with pentagonal, 14-gauge high strength steel. Hinges shall be minimum 1/4" x 3", with a 180 degree swing.

Installation Requirements

The gates shall be mounted or welded to 4" square or round steel tubing. Each gate tube shall be 4 feet down in the ground and encased in concrete on each side of the gate. Two new single gates shall be installed at the locations shown on Attachment A in accordance with the specifications described above and as shown in Figure 3. A CTS gate crossing barrier shall be installed at the base of the new gates as described above under "CTS Gate Crossing Barrier."

Fence¹ Installation and Repairs

Approximately 3,744 lf of new cattle fence is to be installed and fitted with a CTS exclusion barrier and exit funnels. Approximately 1,510 lf of existing fence is to be repaired and replaced as necessary to install the CTS exclusion barrier material and exit funnels.

Material

5-strand Barbed Wire – min. height 48 inches.

Barbed wire fencing shall conform to the requirements of ASTM-121, and as further specified:

Type I – Standard Double Strand Barbed Wire (Figure 5). Barbed wire shall be 12-1/2 minimum gauge with 14 gauge or heavier two-point barbs spaced not more than 5 inches apart. The minimum protective coating shall be Class I galvanized per ASTM-121. The minimum wire strand breaking strength shall be 850 pounds.

Installation Requirements

When splicing is necessary, the "Western Union" splice shall be used (Figure 5). The splice is made by overlapping the ends of each wire and wrapping each wire around the other wire. The splice shall have a minimum of 8 wraps on each side of center and be tightly wound and closely spaced. The use of a fence-splicing tool will facilitate this operation and result in a neat job.

¹ Adapted from Natural Resources Conservation Service Conservation Practice Specifications, NRCS CA July 2000 and May 2015, 382A-Fence

October 23, 2015

Revision:

LF/SF:01 11 00

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Wire Attachments

Material

Wire clips of galvanized 12 – 12-1/2 gauge or 16 gauge galvanized wire shall be used.

Installation Requirements

Fence wire shall be stretched to sufficient tension prior to being fastened to posts. Temperature variations must be considered (wire will tighten in cold weather and expand in hot weather). Wherever possible, wire shall be attached to the fence post on the side receiving the most pressure (i.e., from livestock).

Line Posts

Material

Steel. Standard “Tee” or “U” section steel posts weighing not less than 1.33 pounds per foot of length, exclusive of anchor plate, shall be used. Steel posts shall be rolled from high carbon steel and studded, embossed, or punched for wire attachment with anchor plate. The protective coating shall consist of hot-dip galvanized or one or more coats of high-grade, weather-resistant steel paint, or enamel applied and baked. Wire shall be attached to the posts by wrapping with 16 gauge galvanized wire or by use of manufacturer’s specially designed clips.

Size. Post length must be at least 7 feet to construct a 48-inch high fence and be set solidly in the ground a minimum depth of two feet in deep soils. In shallow or rocky soil where penetration cannot be obtained with ordinary hand tools, a mechanical auger or post driver may be used.

Spacing. On 5 wire standard fences, maximum post interval shall not exceed 20 feet if no stays are used between post, or 30 feet if stays are used between posts at intervals not greater than 10 feet.

Corner, Gate and Brace Posts

(see Figures 6 and 7)

Brace Posts

Corner braces are required at all points where the fence alignment has a change of 20 degrees or more and the pull is from two directions, and/or when the topography change is greater than 8 Figure 1percent. End braces are required where the fence ends and on both sides of gate openings.

Size. Length shall be 7-8 feet minimum to provide for the construction of at least a 48-inch high fence and permit setting at least 36 inches in the ground.

Steel. Steel corner or brace posts with a minimum 2-3/8 inch diameter steel pipe or equivalent and weighing a minimum of 3.65 pounds per foot, with brace member welded to the posts. Posts to be set in concrete the entire depth using a “post mix.” No concrete is needed if the post is welded to the compression brace.

When posts are backfilled with dirt, they will be centered in a hole at least 6 inches larger in diameter than the diameter of the post and tamped in 4 to 6 lifts up to ground level. When backfilled with concrete, posts

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CALIFORNIA TIGER SALAMANDER (CTS) EXCLUSION BARRIER
PROJECT NO.: 660175 1B 19900
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MERCED, CALIFORNIA

will be centered in a hole that is a minimum of 1'-0" in diameter. The hole will be completely filled and crowned (mounded) at post base to prevent water from ponding around the post at ground level.

Bracing. Required at all corners, gates and at all definite angles in the line fence. "H" braces or steel-welded single post end/angle (diagonal) braces shall be used. In straight sections, brace units (pull posts) shall be spaced at intervals not to exceed 1,320 feet. Horizontal braces can be two-inch new pipe (2" OD, min. 2.25 lb/ft) or angle iron (2" x 2" x 1/4") installed not less than three feet above ground line and no higher than the top wire. A tension member composed of two complete loops of number 12-1/2 gauge double strand barbed or smooth wire, shall extend from a point approximately six inches below the top of the brace post to ground level of the post being braced.

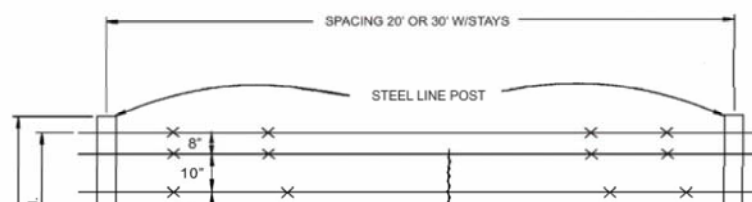
In the design and installation of a diagonal brace, several principles should be kept in mind.

1. Make the diagonal (horizontal as well) brace as long as possible.
2. Be sure that the end of the diagonal brace in contact with the ground is free to move forward and is not blocked by a stake or post.
3. The diagonal brace can bear against the corner post in any location from the middle of the post to the top. However, probably the best place to have the diagonal brace contact the corner post is at the top.
4. When installing a diagonal brace, the corner post should be set first, then the diagonal brace installed, then the bottom holding wire brace installed, and then the wires attached and tensioned. If this procedure is followed, the lower wire brace will not have to be twisted to tighten.
5. If one diagonal brace will not hold the fence tension, a second diagonal brace should be installed with each brace taking half the tension of the fence.
6. When using the diagonal brace as a line brace, care must be exercised not to over-tension the brace wires. The vertical post can be jacked out of the ground.

Attaching Wire to Anchor/Pull Posts. For 5-strand barbed wire fences, the brace wire shall be attached to pull posts by two complete wraps around the post, wired, and ends tightly twisted around stretched wire at least six times to secure the brace and provide needed rigidity.

All posts shall be placed to the required depth and shall be firmly embedded so that there is less than 1 inch of horizontal movement at the top of post when a horizontal force of 80 lbs is applied.

I



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FIGURES

Figure 1

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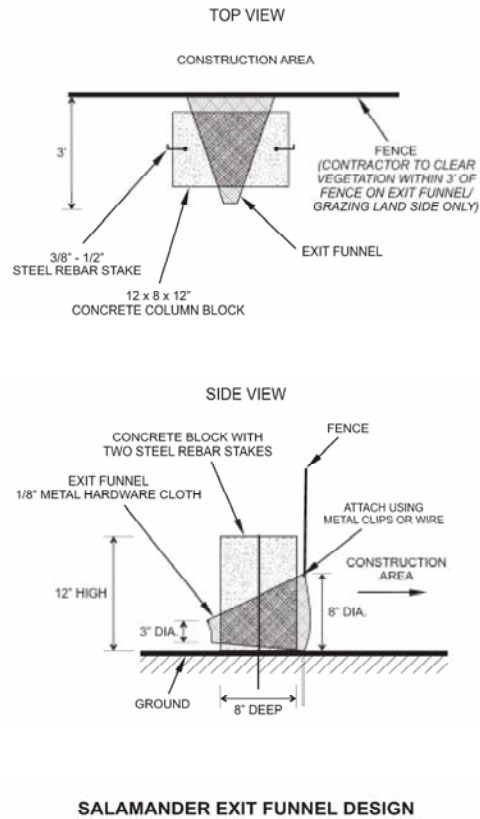


Figure 2

C
R
L

University of California Merced
 CTS Fence August 5, 2015

K
10

The installation of the CTS exclusion barrier, fencing and associated components described above shall conform to the following figures and to the graphic included in Attachment A.

SINGLE GATE

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Figure 3

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
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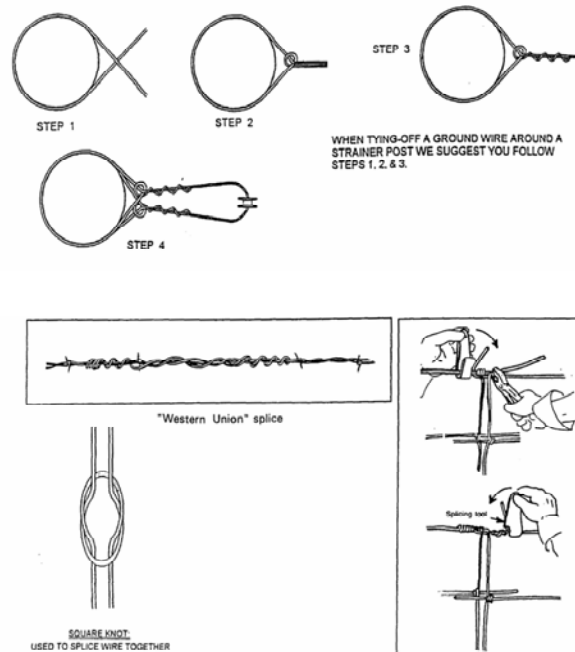


Figure 4

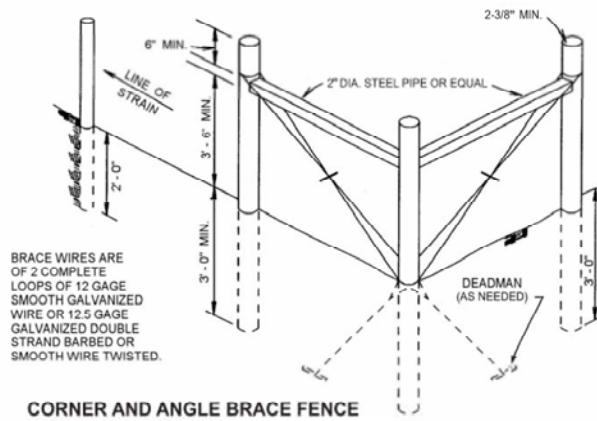


Figure 5

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
 CALIFORNIA TIGER SALAMANDER (CTS) EXCLUSION BARRIER
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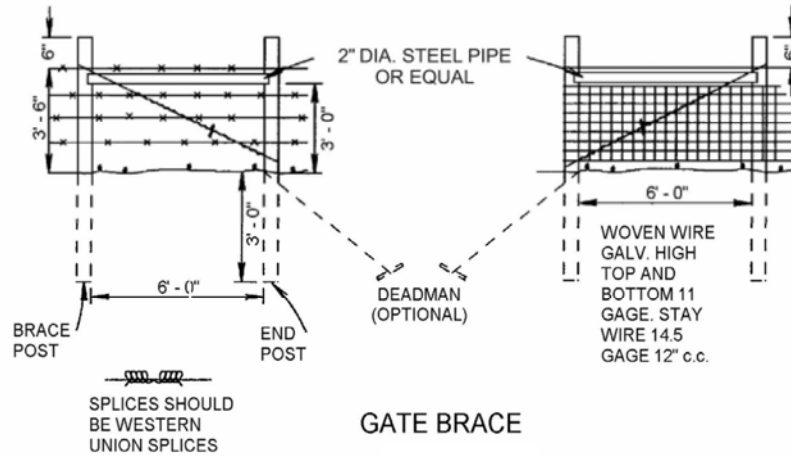


Figure 6

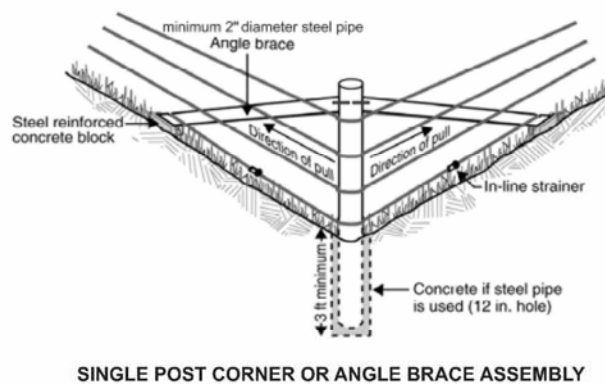


Figure 7

UC MERCED ENVIRONMENTAL SITE WORK PROJECT
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ATTACHMENTS

Attachment A - California Tiger Salamander (CTS) Exclusion Barrier Site Map
Attachment B - Existing California Tiger Salamander (CTS) Exclusion Barrier Condition Photos
Attachment C - California Tiger Salamander (CTS) Exit Funnel Condition Photo
Attachment D - California Tiger Salamander (CTS) Fence Trencher

END OF SECTION 01 11 00

Appendix A

Project Plans & WPCD's

SECTION 01 11 01.10
NATURAL RESOURCE AVOIDANCE AND MINUMIZATION MEASURES

PART 1 - GENERAL

1.1 WORK REQUIRED BY CONTRACT DOCUMENTS

A. Contractor shall comply with the following permits and plan:

1. Clean Water Act, Section 404, Department of the Army Permit Number-1999-00203.
2. California Endangered Species Act, California Department of Fish and Game Incidental Take Permit Number 2081-2009-010-04.
3. Final Construction Mitigation Plan for Biological Resources for the University of California, Merced Project, ICF Jones and Stokes, November 2009.

B. Training Program

1. Prior to working on the Project site, all construction personnel shall attend a training program provided by the University. The training will include at minimum, a description of the species at risk and their habitat, the importance of the species and their habitat, the general measures being implemented to conserve the sensitive areas/species, and the boundaries within which the project may be accomplished.
2. The training shall be conducted in English and Spanish and shall consist of a presentation and the distribution of appropriate literature. The Contractor shall ensure that all Contractor, sub-contractor and Contractor supplier personnel attend a training session before they start working at the Project site.
3. The Contractor shall be responsible for ensuring that all personnel working on the Project site shall apply their signature to a declaration stating that they have attended and understand the natural resource training they have received. Such declaration shall be made before commencing activities upon the site. These declarations shall be kept by the University's Security's Contractor on the Project site and shall immediately be available to the University's Representative upon request.

C. Natural Resource Best Management Practices

The Contractor shall ensure that the following site regulations, which will be identified in the Training program, are adhered to:

1. All food related items shall be properly disposed of, and signs indicating that the feeding of wildlife is prohibited shall be placed at the Project site.
2. Vehicle traffic shall occur primarily between dawn and dusk, and shall be limited to 20 mph to reduce the potential for wildlife road mortality.
3. For any trench or pit that exceeds 2 feet depth, Contractor will provide an earthen escape ramp of no more than 3:1 slope every 200 feet. Before holes or trenches are filled, the Designated Biologist shall thoroughly inspect them for trapped animals. If the Contractor discovers that Covered Species have become trapped, Contractor shall cease all work in the vicinity and notify the Designated Biologist immediately. Contract and the Designated Biologist shall allow the Covered Species to escape unimpeded if possible.

4. Pipes, culverts, etc. greater than three inches in diameter shall be stored in such a way as to prohibit foxes or other species from using these areas as temporary refuge. In addition, these structures shall be thoroughly inspected each morning for Covered Species. If during inspection a Covered Species is discovered inside, Contractor shall notify Designated Biologist and allow the animal to safely escape that section of pipe before moving, utilizing, burying or capping the pipe.
5. No firearms shall be allowed on this Property.
6. No pets shall be permitted on this Property.
7. The use of pesticides on the Project site by the Contractor, including but not limited to rodenticides, insecticides and herbicides, is prohibited unless prior written approval of the University's Representative is obtained.
8. Construction vehicles shall be limited to a maximum speed of 20 mph in the vicinity of breeding ponds of California tiger salamander during the salamander movement period. The location of the breeding ponds and dates of the movement period shall be identified by the University's Representative.
9. California tiger salamander exclusion fencing shall be established around the construction footprint and maintained throughout all construction activities. The University's Representative has estimated that approximately 15,000 linear feet of exclusion fencing will be required along the northern and eastern boundary of the project site. The Contractor shall use silt fencing, which consists of a fine (less than 0.4 inches) mesh equipped with one-way exit ramps approximately 150-feet apart to avoid entrapment of amphibians inside the fence. Fencing shall be buried to a depth of six (6) inches and will be a minimum of 3.3 feet tall following installation.
10. Contractor shall monitor the National Weather Service (NWS) 72-hour forecast for the Project area. If a 70 percent or greater chance of rainfall is predicted within 72 hours of Project activity, all activities in areas within 1.3 miles of potential or known CTS breeding sites shall cease until no further rain is forecast. If work must continue when rain is forecast, a Designated Biologist, shall survey the Project site before construction begins EACH day rain is forecast. If a Designated Monitor is used to conduct surveys, a Designated Biologist must still be available to capture and relocate any CTS that are discovered during the surveys. If rain exceeds ¼ inch during a 24 hour period, work shall cease until no further rain is forecast. This restriction is not applicable for areas within 1.3 miles of potential or known CTS breeding sites once they have been encircled with salamander exclusion fencing. However, even after salamander exclusion fencing is installed, this condition would still apply to construction related traffic moving through areas within 1.3 miles of potential or known CTS breeding sites but outside of the salamander exclusion fencing (e.g., on roads).
11. All night work in areas within 1.3 miles of potential or known CTS breeding sites shall be strictly prohibited when a 70 percent or greater chance of rainfall is predicted within 72 hours of Project activity, until no further rain is forecast. This restriction is not applicable for areas within 1.3 miles of potential or known CTS breeding sites once they have been encircled with salamander exclusion fencing as per ITP condition 8.6. However, even after salamander exclusion fencing is installed, this condition would still apply to construction related traffic moving through areas within 1.3 miles of potential or known CTS breeding sites but outside of the salamander exclusion fencing (e.g., on roads).

12. The Designated Biologist shall identify any areas containing burrowing owls. The Contractor shall establish "Sensitive Areas" around the occupied owl nests identified by the University's Representative. The Sensitive Areas shall not be disturbed by the Contractor. The Sensitive Areas shall extend to a distance of 160 feet from each occupied burrow during the non-breeding season of 1st September through 31 January. The sensitive Areas shall extend to a distance of 250 feet from each occupied burrow during the breeding season of 1st February through 31st August. The Contractor shall erect a temporary fence around occupied burrows. The Designated Biologist shall identify the location of active raptor nests adjacent to the Project site. Should an active Swanson's Hawk nest be located within 0.5 miles of the Project site, or an active nest of another raptor species be identified within 500 feet of active construction, the Designated Biologist will, in consultation with the California Department of Fish & Game, determine the actions necessary to protect the nest site. Such actions may include avoiding construction within a distance from the nest determined by the Designated Biologist for a period determined by the Designated Biologist.

13. If active nests of other special-status birds and other migratory birds and raptors are located within 500 feet of the work area, a buffer zone will be established based on the individual responses of the occupying birds, as assessed by a Designated Biologist and in coordination with the California Department of Fish & Game, and construction can proceed. If active nests are located within the work area, construction will be delayed until the young have fledged. The protection measures will be developed in coordination with the California Department of Fish & Game. If western pond turtles are observed within 100 feet of the work area, they will be allowed to move out of the way on their own. If active nests are found they will be fenced with an appropriate buffer and avoided until the young have hatched and are able to move out of the work area on their own.

14. Contractor shall inspect for Covered Species under vehicles and equipment before the vehicles and equipment are moved. If a Covered Species is present, the Contractor shall notify the Designated Biologist and wait for the Covered Species to move unimpeded to a safe location. Alternatively, the Designated Biologist shall move the Covered Species out of harm's way outside of the Project Area and in compliance with the approved relocation plan, if applicable.

15. If an injured Covered Species is discovered at any time, the Contractor is to notify the Designated Biologist immediately.

16. If California Tiger Salamander is found by any person in Project Area before or during work, the Contractor shall immediately stop all work that could potentially harm the CTS until Designated Biologist can relocate CTS.

17. To ensure compliance with the Conditions of ITP, Designated Biologist shall have authority to immediately stop any activity that is not in compliance with the ITP, and/or any order any reasonable measures to avoid the unauthorized take of an individual of the Covered Species, or a species not covered by the ITP.

END OF 01110.10-NATURAL RESOURCES AVOIDANCE & MINIMIZATION MEASURES

Appendix B

Other Plans and Permits

Appendix C

Risk Determination Worksheet



Water: Stormwater

You are here: [Water](#) » [Pollution Prevention & Control](#) » [Permitting \(NPDES\)](#) » [Stormwater](#) » [LEW Results](#)

LEW Results

Rainfall Erosivity Factor Calculator for Small Construction Sites

Facility Information

Start Date: 07/24/2015
End Date: 09/30/2015
Latitude: 37.3637
Longitude: -120.4311

Erosivity Index Calculator Results

AN EROSMITY INDEX VALUE OF 0.43 HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF 07/24/2015 - 09/30/2015.

A rainfall erosivity factor of less than 5.0 has been calculated for your site and period of construction. Contact your permitting authority to determine if you are eligible for a waiver from NPDES permitting requirements. If you are covered under EPA's [construction general permit](#) then you can use eNOI to submit your low erosivity waiver certification.

If your construction activity extends past the project completion date you specified above, you must recalculate the R factor using the original start date and a new project completion date. If the recalculated R factor is still less than 5.0, a new waiver certification form must be submitted before the end of the original construction period. If the new R factor is 5.0 or greater, the operator must submit a Notice of Intent to be covered by the Construction General Permit before the original project completion date.

[Start Over](#)

Last updated on Monday, July 28, 2014

Water Boards Storm Water Multiple Application & Report Tracking System

Logout

You are logged in as: Steven Perkins - Design Nature.
If this account does not belong to you, please log out.

Navigate To:

Risk

The application is organized into different tabs. Please complete all applicable tabs before submitting the form. If you want to complete the application at a later time, please click on "Save & Exit".

WDID: 457888
Application ID: 457888
Status: Not Submitted
Previous ID: -

Owner: University of California Merced
520 N Lake Road Merced CA 95343
Site: CTS Fencing
5200 N Lake Rd Merced CA 95343

Certified Date:
Processed Date:
NOT Effective Date:
Permit Type: Construction - NOI

Owner Info

Developer Info

Site Info

Risk

Add Site Info

Post Construction

Billing Info

Attachments

Certification

Print

Status History

Linked Users

NOTs

COIs

SEDIMENT RISK FACTOR WORKSHEET

Instructions: Enter R,K and LS factor values. System will calculate watershed erosion estimates and site sediment risk factor

A. Sediment Risk

A) R Factor Value: (What's this?)

0.43
Erosivity Calculator

B) K Factor Value (weighted average, by area, for all site soils) (What's this?)
***If not using the SWRCB map(Populate K Factor) upload your analysis on the Attachment Tab prior to submitting to the SWRCB.

0.24
Populate K Factor

C) LS Factor (weighted average, by area, for all slopes) (What's this?) ***If not using the SWRCB map(Populate LS Factor) upload your analysis on the Attachment Tab prior to submitting to the SWRCB.

0.8545841
Populate LS Factor

0.08819307912

Watershed Erosion Estimate (=R*K*LS) in tons/lacre

Site Sediment Risk Factor

Low Sediment Risk: < 15 tons/lacre
Medium Sediment Risk: >= 15 and <75 tons/lacre
High Sediment Risk: >= 75 tons/lacre

Low

RECEIVING WATER (RW) RISK FACTOR WORKSHEET

A. Watershed Characteristics

A.1 (a) Does the disturbed area discharge directly or indirectly to a 303(d) listed waterbody impaired by sediment?
OR

A.1 (b) Is the disturbed area located within a sub-watershed draining to a 303(d) listed waterbody impaired by sediment?
OR

A.2. Is the disturbed area located within a planning watershed draining to a waterbody with designated beneficial uses of COLD, SPANW AND MIGRATORY?

Populate Receiving Water Risk

No

Low

Yes = High, No = Low

Statewide Map of High Receiving Water Risk Watersheds

C. Combined Risk Level Matrix

Low

Sediment Risk

Medium

High

1 of 2

7/7/2015 3:34 PM

Receiving Water Risk	Low	Level1	Level2	Level3
Project Sediment Risk:	Low			
Project Receiving Water Risk:	Low			
Project Combined Risk:	Level1			

Save & Exit

Save & Continue

Fields marked with * are mandatory fields.

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Appendix D

Computation Sheet for Determining Runoff

$$\text{Total Disturbed Site Area} = \underline{3.0 \text{ Acres}} \quad (\text{A})$$

Existing Site Conditions

$$\text{Impervious Site Area}^1 = \underline{0.0 \text{ Acres}} \quad (\text{B})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{.95} \quad (\text{C})$$

$$\text{Pervious Site Area}^3 = \underline{3.0 \text{ Acres}} \quad (\text{D})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \underline{.25} \quad (\text{E})$$

$$\text{Existing Site Area Runoff Coefficient} \frac{(B \times C) + (D \times E)}{(A)} = \underline{.25} \quad (\text{F})$$

Proposed Site Conditions (after construction)

$$\text{Impervious Site Area}^1 = \underline{0.0 \text{ Acres}} \quad (\text{G})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \underline{.95} \quad (\text{H})$$

$$\text{Pervious Site Area}^3 = \underline{3.0 \text{ Acres}} \quad (\text{I})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \underline{.25} \quad (\text{J})$$

$$\text{Proposed Site Area Runoff Coefficient} \frac{(G \times H) + (I \times J)}{(A)} = \underline{.25} \quad (\text{K})$$

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
2. Use 0.95 unless lower or higher runoff coefficient can be verified.
3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
4. Refer to local Hydrology Manual for typical C values.

Appendix E

SWPPP Amendment Number _____

Project Name: Site Development and Infrastructure – Phase 6

Project Location: UC Merced, 5200 N. Lake Rd., Merced, CA

Project Number: 906070

Owner Approval of the Storm Water Pollution Prevention Plan Amendment

“I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system on those persons directly responsible for gathering the information to the best of my knowledge and belief the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.”

Owner Signature

Date

Owner Name and Title

Telephone Number

Appendix F

BMP Consideration Checklist

CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST					
The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.					
EROSION CONTROL BMPs					
BMP No.	BMP	CONSIDERED FOR PROJECT	CHECK IF USED	CHECK IF NOT USED	IF NOT USED, STATE REASON
ES-1	Scheduling	Yes	X		
ES-2	Preservation of Existing Vegetation	Yes	X		
ES-3	Hydraulic Mulch	No		X	Areas of disturbance too small
ES-4	Hydroseeding	No		X	Areas of disturbance too small
ES-5	Soil Binders	No		X	Not needed
ES-6	Straw Mulch	No		X	Not needed
ES-7	Geotextiles & Mats	No		X	Not needed
ES-8	Wood Mulching	No		X	Not needed
ES-9	Earth Dikes & Drainage Swales	No		X	Not Needed
ES-10	Velocity Dissipation Devices	No		X	Not needed for site slopes
ES-11	Slope Drains	No		X	Not needed

CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST					
The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.					
SEDIMENT CONTROL BMPs					
BMP No.	BMP	CONSIDERED FOR PROJECT	CHECK IF USED	CHECK IF NOT USED	IF NOT USED, STATE REASON
SC-1	Silt Fence	Yes	X		
SC-2	Sediment Basin	No		X	Not needed
SC-3	Sediment Trap	No		X	Not needed
SC-4	Check Dam	No		X	No channel flows
SC-5	Fiber Rolls	Yes	X		
SC-6	Gravel Bag Berm	No		X	Not needed
SC-7	Street Sweeping and Vacuuming	No		X	May need if constructed entrance not maintained properly
SC-8	Sand Bag Barrier	No		X	No channels
SC-9	Straw Bale Barrier	Yes	X		
SC-10	Storm Drain Inlet Protection	No		X	No Storm Drains adjacent to disturbed Areas
WIND EROSION CONTROL BMPs					
WE-1	Wind Erosion Control	Yes	X		
TRACKING CONTROL BMPs					
TC-1	Stabilized Construction Entrance/Exit	Yes	X		
TC-2	Stabilized Construction Roadway	No		X	Limited vehicle traffic
TC-3	Entrance/Outlet Tire Wash	No		X	No water service at available at entrance

CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST					
The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.					
NON-STORM WATER MANAGEMENT BMPs					
BMP No.	BMP	CONSIDERED FOR PROJECT	CHECK IF USED	CHECK IF NOT USED	IF NOT USED, STATE REASON
NS-1	Water Conservation Practices	No		X	Very limited water use
NS-2	Dewatering Operations	No		X	N/A
NS-3	Paving and Grinding Operations	No		X	Addressed in concrete waste management
NS-4	Temporary Stream Crossing	No		X	No crossings
NS-5	Clear Water Diversion	No		X	No run-on
NS-6	Illicit Connection/ Discharge	Yes	X		
NS-7	Potable Water/Irrigation	No		X	No water or irrigation on project
NS-8	Vehicle and Equipment Cleaning	Yes	X		
NS-9	Vehicle and Equipment Fueling	Yes	X		
NS-10	Vehicle and Equipment Maintenance	Yes	X		
NS-11	Pile Driving Operations	No		X	N/A
NS-12	Concrete Curing	No		X	N/A
NS-13	Concrete Finishing	No		X	N/A
NS-14	Material and Equipment Use Over Water	No		X	N/A
NS-15	Demolition Adjacent to Water	No		X	N/A
NS-16	Temporary Batch Plants	No		X	N/A

CONSTRUCTION SITE BMPs CONSIDERATION CHECKLIST					
The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP must be checked as "Not Used" with a brief statement describing why it is not being used.					
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs					
BMP No.	BMP	CONSIDERED FOR PROJECT	CHECK IF USED	CHECK IF NOT USED	IF NOT USED, STATE REASON
WM-1	Material Delivery and Storage	Yes	X		
WM-2	Material Use	Yes	X		
WM-3	Stockpile Management	No		X	No soil stockpiling
WM-4	Spill Prevention and Control	Yes	X		
WM-5	Solid Waste Management	Yes	X		
WM-6	Hazardous Waste Management	No		X	Addressed in spill management
WM-7	Contaminated Soil Management	No		X	Addressed in spill management
WM-8	Concrete Waste Management	Yes	X		
WM-9	Sanitary/Septic Waste Management	Yes	X		
WM-10	Liquid Waste Management	No		X	Addressed in spill management

Appendix G

Program for Maintenance, Inspection, and Repair of Construction Site BMPs

The contractor shall use the following guidelines for maintenance, inspection, and repair of BMPs identified in the SWPPP

BEST MANAGEMENT PRACTICES (BMPs)	INSPECTION FREQUENCY	MAINTENANCE/REPAIR PROGRAM
TEMPORARY EROSION CONTROL BMPs		
• Hydraulic Mulch	2 weeks	Re-apply to weak areas
• RECPs	2 weeks	Replace torn or damaged
• Hydroseeding	2 weeks	Re-apply if no germination
TEMPORARY SEDIMENT CONTROL BMPs		
• Silt Fence	2 weeks	Replace if torn or fallen
• Fiber Rolls	2 weeks	Replace when flat
• Straw Bale Barrier	2 weeks	Replace when damaged
WIND EROSION CONTROL BMPs		
TRACKING CONTROL BMPs		
• Stabilized Construction Entrance	Daily	Replace when full of Sediment
NON-STORM WATER MANAGEMENT BMPs		
• Potable Water/Irrigation	Daily	Check for discharges
• Vehicle and Equipment Fueling	Daily	Check for spills
• Vehicle and Equipment Maintenance	Daily	Check daily for leaks
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs		

Storm Water Pollution Prevention Plan
CTS Exclusion Fence
Project No. 660175 1B 19900-1
University of California, Merced

- | | | |
|------------------------|-------|---|
| • Stockpile Management | Daily | Located away from drainage areas
Covered if not in use |
| • Spill Prevention | Daily | Report spill immediately/use spill kit |
| • Concrete Waste | Daily | Utilize concrete washouts |
| • Sanitary Waste | Daily | Inspect porta-potties |

Appendix H

Storm Water Quality Construction Site Inspection Checklist

GENERAL INFORMATION				
Project Name				
Project N°				
Contractor				
Inspector's Name				
Inspector's Title				
Signature				
Date of Inspection				
Inspection Type (Check Applicable)	<input type="checkbox"/> Prior to forecast rain <input type="checkbox"/> After a rain event <input type="checkbox"/> 24-hr intervals during extended rain <input type="checkbox"/> Other_____			
Season (Check Applicable)	<input type="checkbox"/> Rainy <input type="checkbox"/> Non-Rainy			
Storm Data	Storm Start Date & Time:		Storm Duration (hrs):	
	Time elapsed since last storm (Circle Applicable Units)	Min. Hr. Days	Approximate Rainfall Amount (inches)	

PROJECT AREA SUMMARY AND DISTURBED SOIL AREA (DSA) SIZE	
Total Project Area	_____ Acres
Field Estimate of Active DSAs	_____ Acres
Field Estimate of Non-Active DSAs	_____ Acres

INSPECTION OF BMPs				
BMP	Yes	No	N/A	Corrective Action
Preservation of Existing Vegetation				
Is temporary fencing provided to preserve vegetation in areas where no construction activity is planned?				
Location:				
Location:				
Location:				
Location:				
Erosion Control				
Does the applied temporary erosion control provide 100% coverage for the affected areas?				
Are any non-vegetated areas that may require temporary erosion control?				
Is the area where erosion controls are used required free from visible erosion?				
Location:				
Location:				
Location:				
Location:				
Temporary Linear Sediment Barriers (Silt Fence, Fiber Rolls, Sandbag Barriers, etc.)				
Are temporary linear sediment barriers properly installed, functional and maintained?				
Are temporary linear sediment barriers free of accumulated litter?				
Is the built-up sediment less than 1/3 the height of the barrier?				
Are cross barriers installed where necessary and properly spaced?				
Location:				
Location:				
Location:				
Location:				
Location:				
Storm Drain Inlet Protection				
Are storm drain inlets internal to the project properly protected?				
Are storm drain inlet protection devices in working order and being properly maintained?				
Location:				
Location:				
Location:				
Location:				
Location:				

INSPECTION OF BMPs				
BMP	Yes	No	N/A	Corrective Action
Stockpiles				
Are all locations of temporary stockpiles, including soil, hazardous waste, and construction materials in approved areas?				
Are stockpiles protected from run-on, run-off from adjacent areas and from winds?				
Are stockpiles located at least 15 m from concentrated flows, downstream drainage courses and storm drain inlets?				
Are required covers and/or perimeter controls in place?				
Location:				
Location:				
Location:				
Location:				
Concentrated Flows				
Are concentrated flow paths free of visible erosion?				
Location:				
Location:				
Location:				
Location:				
Tracking Control				
Is the entrance stabilized to prevent tracking				
Is the stabilized entrance inspected daily to ensure that it is working properly				
Are points of ingress/egress to public/private roads inspected and swept and vacuumed as needed?				
Are all paved areas free of visible sediment tracking or other particulate matter?				
Location:				
Location:				
Location:				
Location:				
Wind Erosion Control				
Is dust control implemented?				
Location:				
Location:				
Location:				
Location:				

INSPECTION OF BMPs				
BMP	Yes	No	N/A	Corrective Action
Vehicle & Equipment Fueling, Cleaning, and Maintenance				
Are vehicle and equipment fueling, cleaning and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious material?				
Are vehicle and equipment fueling, cleaning and maintenance activities performed on an impermeable surface in dedicated areas?				
If no, are drip pans used?				
Are dedicated fueling, cleaning, and maintenance areas located at least 15 m away from downstream drainage facilities and watercourses and protected from run-on and runoff?				
Is wash water contained for infiltration/ evaporation and disposed of appropriately?				
Is on-site cleaning limited to washing with water (no soap, soaps substitutes, solvents, or steam)?				
On each day of use, are vehicles and equipment inspected for leaks and if necessary, repaired?				
Location:				
Location:				
Location:				
Location:				
Waste Management & Materials Pollution Control				
Are material storage areas and washout areas protected from run-on and runoff, and located at least 15 m from concentrated flows and downstream drainage facilities?				
Are all material handling and storage areas clean; organized; free of spills, leaks, or any other deleterious material; and stocked with appropriate clean-up supplies?				
Are liquid materials, hazardous materials, and hazardous wastes stored in temporary containment facilities?				
Are bagged and boxed materials stored on pallets?				
Are hazardous materials and wastes stored in appropriate, labeled containers?				
Are proper storage, clean-up, and spill-reporting procedures for hazardous materials and wastes posted in open, conspicuous and accessible locations adjacent to storage areas?				
Are temporary containment facilities free of spills and rainwater?				
Are temporary containment facilities and bagged/boxed materials covered?				
Are temporary concrete washout facilities designated and being used?				
Are temporary concrete washout facilities functional for receiving and containing concrete waste and are concrete residues prevented from entering the drainage system?				
Do temporary concrete washout facilities provide sufficient volume and freeboard for planned concrete operations?				
Are concrete wastes, including residues from cutting and grinding, contained and disposed of off-site or in concrete washout facilities?				
Are spills from mobile equipment fueling and maintenance properly contained and cleaned up?				

INSPECTION OF BMPs				
BMP	Yes	No	N/A	Corrective Action
Is the site free of litter?				
Are trash receptacles provided in the yard, field trailer areas, and at locations where workers congregate for lunch and break periods?				
Is litter from work areas collected and placed in watertight dumpsters?				
Are waste management receptacles free of leaks?				
Are the contents of waste management receptacles properly protected from contact with storm water or from being dislodged by winds?				
Are waste management receptacles filled at or beyond capacity?				
Location:				
Location:				
Location:				
Location:				
Illicit Connection/ Discharge				
Is there any evidence of illicit discharges or illegal dumping on the project site?				
If yes, has the Owner/Operator been notified?				
Location:				
Location:				
Location:				
Location:				
Discharge Points				
Are discharge points and discharge flows free from visible pollutants?				
Are discharge points free of any significant sediment transport?				
Location:				
Location:				
Location:				
Location:				
SWPPP Update				
Does the SWPPP and Project Schedule adequately reflect the current site conditions and contractor operations?				
Are all BMPs shown on the water pollution control drawings installed in the proper location(s) and according to the details in the SWPPP?				
Location:				
Location:				
Location:				
Location:				

INSPECTION OF BMPs				
BMP	Yes	No	N/A	Corrective Action
General				
Are there any other potential concerns at the site?				
Location:				
Location:				
Location:				
Location:				
Storm Water Monitoring				
Does storm water discharge directly to a water body listed in the General Permit as impaired for sediment/sedimentation or turbidity?				
If yes, were samples for sediment/sedimentation or turbidity collected pursuant to the sampling and analysis plan in the SWPPP?				
Did the sampling results indicate that the discharges are causing or contributing to further impairment?				
If yes, were the erosion/sediment control BMPs improved or maintained to reduce the discharge of sediment to the water body?				
Were there any BMPs not properly implemented or breaches, malfunctions, leakages or spills observed which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				
If sampling indicated pollution of the storm water, were the leaks, breaches, spills, etc. cleaned up and the contaminated soil properly disposed of?				
Were the BMPs maintained or replaced?				
Were soil amendments (e.g., gypsum, lime) used on the project?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan in the SWPPP?				
If sampling indicated pollution of the storm water by the use of the soil amendments, is there a contingency plan for retention onsite of the polluted storm water?				
Did storm water contact stored materials or waste and run off the construction site? (Materials not in watertight containers, etc.)				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan in the SWPPP?				

INSPECTION OF BMPs				
BMP	Yes	No	N/A	Corrective Action

Appendix I

Training Documentation

Appendix J

Sample Subcontractor Notification Letter and Notification Log

SWPPP Notification

Company
Address
City, State, ZIP

Dear Sir/Madam,

Please be advised that the California State Water Resources Control Board has adopted the General Permit (General Permit) for Storm Water Discharges Associated with Construction Activity (CAS000002). The goal of these permits is prevent the discharge of pollutants associated with construction activity from entering the storm drain system, ground and surface waters.

[Owner/Developer/Contractor] has developed a Storm Water Pollution Prevention Plan (SWPPP) in order to implement the requirements of the Permits.

As a subcontractor, you are required to comply with the SWPPP and the Permits for any work that you perform on site. Any person or group who violates any condition of the Permits may be subject to substantial penalties in accordance with state and federal law. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP and the Permits. A copy of the Permits and the SWPPP are available for your review at the construction office. Please contact me if you have further questions.

Sincerely,

Name
Title

SUBCONTRACTOR NOTIFICATION LOG

Project Name: _____

Project Number/Location: _____

SUBCONTRACTOR COMPANY NAME	CONTACT NAME	ADDRESS	PHONE NUMBER	PAGER/ FIELD PHONE	DATE NOTIFICATION LETTER SENT	TYPE OF WORK

USE ADDITIONAL PAGES AS NECESSARY

Appendix K

Notice of Non-Compliance

To: Name of [City] Engineer/Regional Board Staff

Date: Insert Date

Subject: Notice of Non-Compliance

Project Name: Insert Project Name

Project Number/Location: Project number

In accordance with the NPDES Statewide Permit for Storm Water Discharges Associated with Construction Activity, the following instance of discharge is noted:

Date, time, and location of discharge

Insert description and date of event

Nature of the operation that caused the discharge

insert description of operation

Initial assessment of any impact cause by the discharge

insert assessment

Existing BMP(s) in place prior to discharge event

list BMPs in place

Date of deployment and type of BMPs deployed after the discharge.

BMPs deployed after the discharge (with dates)

Steps taken or planned to reduce, eliminate and/or prevent recurrence of the discharge

insert steps taken to prevent recurrence

Implementation and maintenance schedule for any affected BMPs

insert implementation and maintenance schedule

If further information or a modification to the above schedule is required, notify the contact person below.

Name of Contact Person

Title

Company

Telephone Number

Signature

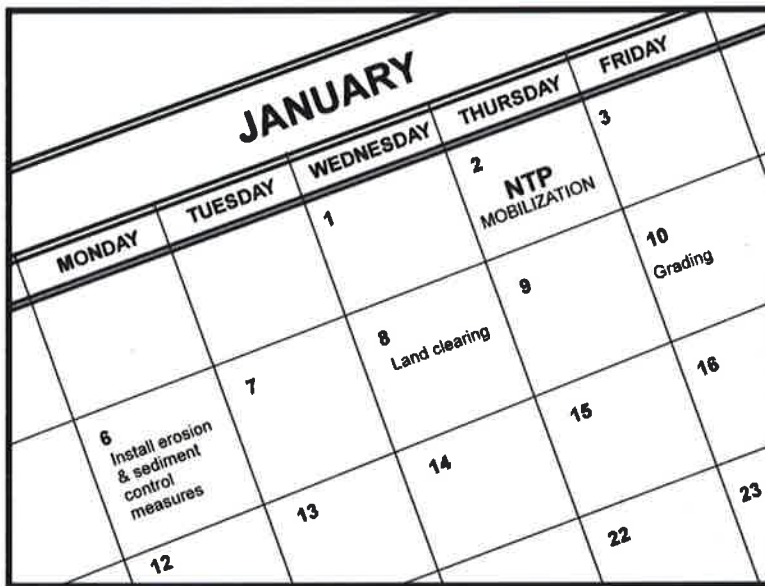
Date

Appendix L

Annual Certification of Compliance

Appendix M

Project BMP's



Description and Purpose

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Suitable Applications

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Limitations

- Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Implementation

- Avoid rainy periods. Schedule major grading operations during dry months when practical. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means or to install sediment trapping devices.
- Plan the project and develop a schedule showing each phase of construction. Clearly show how the rainy season relates to soil

Objectives

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	<input checked="" type="checkbox"/>
TR	Tracking Control	<input checked="" type="checkbox"/>
WE	Wind Erosion Control	<input checked="" type="checkbox"/>
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None



disturbing and re-stabilization activities. Incorporate the construction schedule into the SWPPP.

- Include on the schedule, details on the rainy season implementation and deployment of:
 - Erosion control BMPs
 - Sediment control BMPs
 - Tracking control BMPs
 - Wind erosion control BMPs
 - Non-stormwater BMPs
 - Waste management and materials pollution control BMPs
- Include dates for activities that may require non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, pavement cleaning, etc.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, foundation pouring utilities installation, etc., to minimize the active construction area during the rainy season.
 - Sequence trenching activities so that most open portions are closed before new trenching begins.
 - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
 - Schedule establishment of permanent vegetation during appropriate planting time for specified vegetation.
- Non-active areas should be stabilized as soon as practical after the cessation of soil disturbing activities or one day prior to the onset of precipitation.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year round to deploy erosion control and sediment control BMPs. Erosion may be caused during dry seasons by un-seasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

Costs

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

Inspection and Maintenance

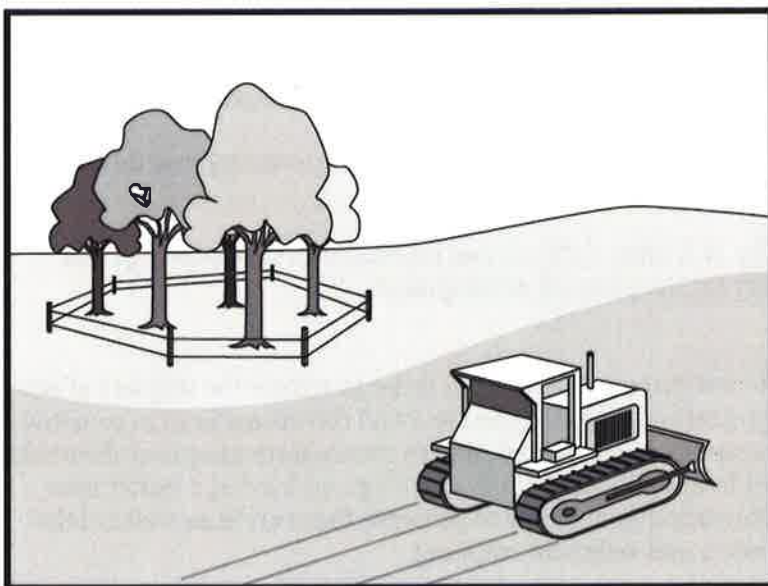
- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted.
- Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

References

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005), U.S. Environmental Protection Agency, Office of Water, September 1992.

Preservation Of Existing Vegetation EC-2



Description and Purpose

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs, and grasses that protect soil from erosion.

Suitable Applications

Preservation of existing vegetation is suitable for use on most projects. Large project sites often provide the greatest opportunity for use of this BMP. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi year projects where grading can be phased.
- Areas where natural vegetation exists and is designated for preservation. Such areas often include steep slopes, watercourse, and building sites in wooded areas.
- Areas where local, state, and federal government require preservation, such as vernal pools, wetlands, marshes, certain oak trees, etc. These areas are usually designated on the plans, or in the specifications, permits, or environmental documents.
- Where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

Objectives

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Objective
- ☐ Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None



EC-2 Preservation Of Existing Vegetation

Limitations

- Requires forward planning by the owner/developer, contractor, and design staff.
- Limited opportunities for use when project plans do not incorporate existing vegetation into the site design.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactory for the planned development.

Implementation

The best way to prevent erosion is to not disturb the land. In order to reduce the impacts of new development and redevelopment, projects may be designed to avoid disturbing land in sensitive areas of the site (e.g., natural watercourses, steep slopes), and to incorporate unique or desirable existing vegetation into the site's landscaping plan. Clearly marking and leaving a buffer area around these unique areas during construction will help to preserve these areas as well as take advantage of natural erosion prevention and sediment trapping.

Existing vegetation to be preserved on the site must be protected from mechanical and other injury while the land is being developed. The purpose of protecting existing vegetation is to ensure the survival of desirable vegetation for shade, beautification, and erosion control. Mature vegetation has extensive root systems that help to hold soil in place, thus reducing erosion. In addition, vegetation helps keep soil from drying rapidly and becoming susceptible to erosion. To effectively save existing vegetation, no disturbances of any kind should be allowed within a defined area around the vegetation. For trees, no construction activity should occur within the drip line of the tree.

Timing

- Provide for preservation of existing vegetation prior to the commencement of clearing and grubbing operations or other soil disturbing activities in areas where no construction activity is planned or will occur at a later date.

Design and Layout

- Mark areas to be preserved with temporary fencing. Include sufficient setback to protect roots.
 - Orange colored plastic mesh fencing works well.
 - Use appropriate fence posts and adequate post spacing and depth to completely support the fence in an upright position.
- Locate temporary roadways, stockpiles, and layout areas to avoid stands of trees, shrubs, and grass.
- Consider the impact of grade changes to existing vegetation and the root zone.
- Maintain existing irrigation systems where feasible. Temporary irrigation may be required.
- Instruct employees and subcontractors to honor protective devices. Prohibit heavy equipment, vehicular traffic, or storage of construction materials within the protected area.

Preservation Of Existing Vegetation EC-2

Costs

There is little cost associated with preserving existing vegetation if properly planned during the project design, and these costs may be offset by aesthetic benefits that enhance property values. During construction, the cost for preserving existing vegetation will likely be less than the cost of applying erosion and sediment controls to the disturbed area. Replacing vegetation inadvertently destroyed during construction can be extremely expensive, sometimes in excess of \$10,000 per tree.

Inspection and Maintenance

During construction, the limits of disturbance should remain clearly marked at all times. Irrigation or maintenance of existing vegetation should be described in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below should be followed:

- Verify that protective measures remain in place. Restore damaged protection measures immediately.
- Serious tree injuries shall be attended to by an arborist.
- Damage to the crown, trunk, or root system of a retained tree shall be repaired immediately.
- Trench as far from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching or tunneling near or under trees to be retained, place tunnels at least 18 in. below the ground surface, and not below the tree center to minimize impact on the roots.
- Do not leave tree roots exposed to air. Cover exposed roots with soil as soon as possible. If soil covering is not practical, protect exposed roots with wet burlap or peat moss until the tunnel or trench is ready for backfill.
- Cleanly remove the ends of damaged roots with a smooth cut.
- Fill trenches and tunnels as soon as possible. Careful filling and tamping will eliminate air spaces in the soil, which can damage roots.
- If bark damage occurs, cut back all loosened bark into the undamaged area, with the cut tapered at the top and bottom and drainage provided at the base of the wood. Limit cutting the undamaged area as much as possible.
- Aerate soil that has been compacted over a trees root zone by punching holes 12 in. deep with an iron bar, and moving the bar back and forth until the soil is loosened. Place holes 18 in. apart throughout the area of compacted soil under the tree crown.
- Fertilization
 - Fertilize stressed or damaged broadleaf trees to aid recovery.
 - Fertilize trees in the late fall or early spring.

EC-2 Preservation Of Existing Vegetation

- Apply fertilizer to the soil over the feeder roots and in accordance with label instructions, but never closer than 3 ft to the trunk. Increase the fertilized area by one-fourth of the crown area for conifers that have extended root systems.
- Retain protective measures until all other construction activity is complete to avoid damage during site cleanup and stabilization.

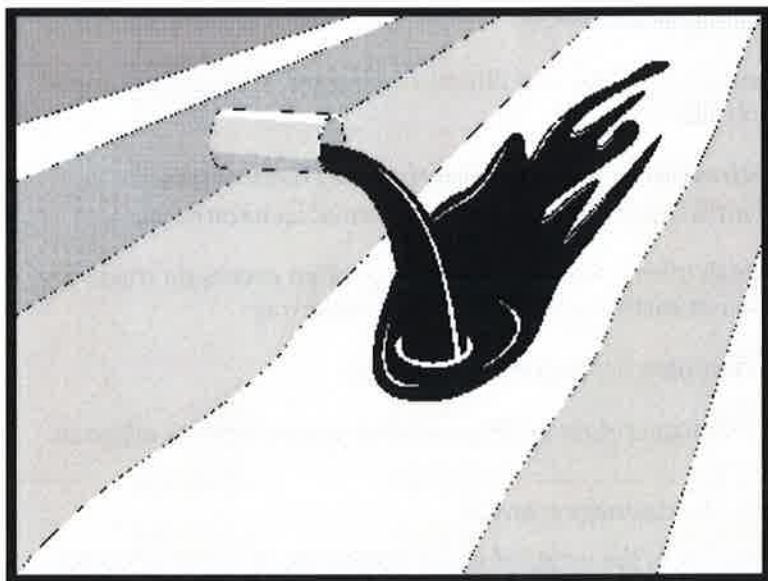
References

County of Sacramento Tree Preservation Ordinance, September 1981.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for The Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	<input checked="" type="checkbox"/>
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

Description and Purpose

Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site and report incidents.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Illicit connection/discharge and reporting is applicable anytime an illicit connection or discharge is discovered or illegally dumped material is found on the construction site.

Limitations

Illicit connections and illegal discharges or dumping, for the purposes of this BMP, refer to discharges and dumping caused by parties other than the contractor. If pre-existing hazardous materials or wastes are known to exist onsite, they should be identified in the SWPPP and handled as set forth in the SWPPP.

Implementation

Planning

- Review the SWPPP. Pre-existing areas of contamination should be identified and documented in the SWPPP.
- Inspect site before beginning the job for evidence of illicit connections, illegal dumping or discharges. Document any pre-existing conditions and notify the owner.
- Inspect site regularly during project execution for evidence

Targeted Constituents

Sediment	
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	<input checked="" type="checkbox"/>
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



of illicit connections, illegal dumping or discharges.

- Observe site perimeter for evidence for potential of illicitly discharged or illegally dumped material, which may enter the job site.

Identification of Illicit Connections and Illegal Dumping or Discharges

- **General** – unlabeled and unidentifiable material should be treated as hazardous.
- **Solids** - Look for debris, or rubbish piles. Solid waste dumping often occurs on roadways with light traffic loads or in areas not easily visible from the traveled way.
- **Liquids** - signs of illegal liquid dumping or discharge can include:
 - Visible signs of staining or unusual colors to the pavement or surrounding adjacent soils
 - Pungent odors coming from the drainage systems
 - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes
 - Abnormal water flow during the dry weather season
- **Urban Areas** - Evidence of illicit connections or illegal discharges is typically detected at storm drain outfall locations or at manholes. Signs of an illicit connection or illegal discharge can include:
 - Abnormal water flow during the dry weather season
 - Unusual flows in sub drain systems used for dewatering
 - Pungent odors coming from the drainage systems
 - Discoloration or oily substances in the water or stains and residues detained within ditches, channels or drain boxes
 - Excessive sediment deposits, particularly adjacent to or near active offsite construction projects
- **Rural Areas** - Illicit connections or illegal discharges involving irrigation drainage ditches are detected by visual inspections. Signs of an illicit discharge can include:
 - Abnormal water flow during the non-irrigation season
 - Non-standard junction structures
 - Broken concrete or other disturbances at or near junction structures

Reporting

Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery. For illicit connections or discharges to the storm drain system, notify the local stormwater management agency. For illegal dumping, notify the local law enforcement agency.

Cleanup and Removal

The responsibility for cleanup and removal of illicit or illegal dumping or discharges will vary by location. Contact the local stormwater management agency for further information.

Costs

Costs to look for and report illicit connections and illegal discharges and dumping are low. The best way to avoid costs associated with illicit connections and illegal discharges and dumping is to keep the project perimeters secure to prevent access to the site, to observe the site for vehicles that should not be there, and to document any waste or hazardous materials that exist onsite before taking possession of the site.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect the site regularly to check for any illegal dumping or discharge.
- Prohibit employees and subcontractors from disposing of non-job related debris or materials at the construction site.
- Notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery.

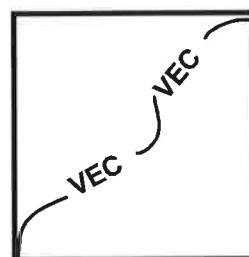
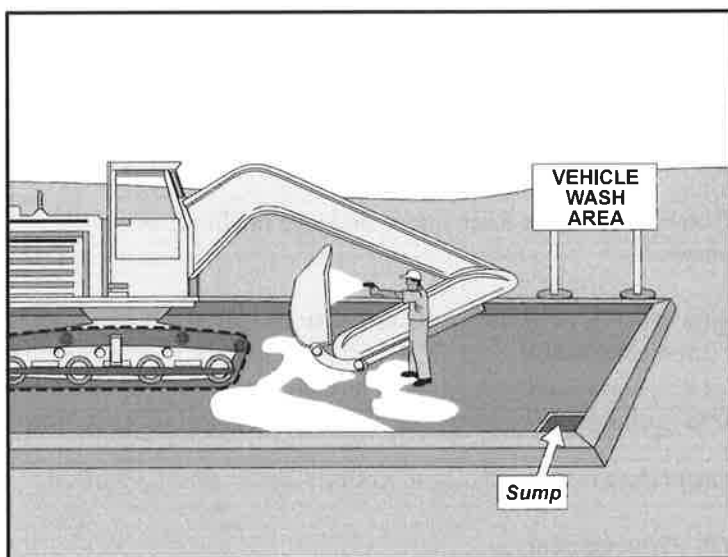
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Vehicle and Equipment Cleaning

NS-8

Standard Symbol

BMP Objectives

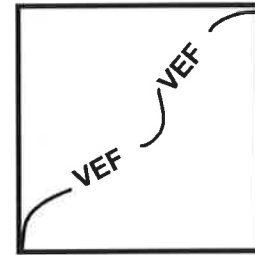
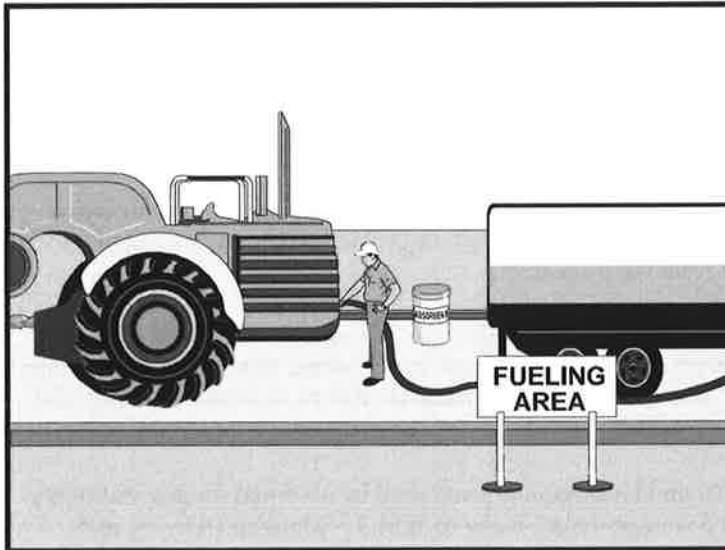
- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

- | | |
|-------------------------------------|---|
| Definition and Purpose | Vehicle and equipment cleaning procedures and practices are used to minimize or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to storm drain system or to watercourses. |
| Appropriate Applications | These procedures are applied on all construction sites where vehicle and equipment cleaning is performed. |
| Limitations | ■ None. |
| Standards and Specifications | <ul style="list-style-type: none">■ On-site vehicle and equipment washing is discouraged.■ Cleaning of vehicles and equipment with soap, solvents or steam shall not occur on the project site unless the Resident Engineer (RE) has been notified in advance and the resulting wastes are fully contained and disposed of outside the highway right-of-way in conformance with the provisions in the Standard Specifications Section 7-1.13. Resulting wastes and by-products shall not be discharged or buried within the highway right-of-way, and must be captured and recycled or disposed according to the requirements of WM-10, "Liquid Waste Management" or WM-6, "Hazardous Waste Management," depending on the waste characteristics. Minimize use of solvents. The use of diesel for vehicle and equipment cleaning is prohibited.■ Vehicle and equipment wash water shall be contained for percolation or evaporative drying away from storm drain inlets or watercourses and shall not be discharged within the highway right-of-way. Apply sediment control BMPs if applicable.■ All vehicles/equipment that regularly enter and leave the construction site must be cleaned off-site.■ When vehicle/equipment washing/cleaning must occur onsite, and the |



operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area shall have the following characteristics, and shall be arranged with the construction storm water coordinator:

- Located away from storm drain inlets, drainage facilities, or watercourses.
- Paved with concrete or asphalt and bermed to contain wash waters and to prevent run-on and runoff.
- Configured with a sump to allow collection and disposal of wash water.
- Wash waters shall not be discharged to storm drains or watercourses.
- Used only when necessary.
- When cleaning vehicles/equipment with water:
 - Use as little water as possible. High pressure sprayers may use less water than a hose, and shall be considered.
 - Use positive shutoff valve to minimize water usage.
 - Facility wash racks shall discharge to a sanitary sewer, recycle system or other approved discharge system and shall not discharge to the storm drainage system or watercourses.
- Maintenance and Inspection
 - The control measure shall be inspected at a minimum of once a week.
 - Monitor employees and subcontractors throughout the duration of the construction project to ensure appropriate practices are being implemented.
 - Inspect sump regularly and remove liquids and sediment as needed or as directed by the RE.



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose Vehicle and equipment fueling procedures and practices are designed to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to watercourses.

Appropriate Applications These procedures are applied on all construction sites where vehicle and equipment fueling takes place.

Limitations ■ Onsite vehicle and equipment fueling shall only be used where it's impractical to send vehicles and equipment off-site for fueling.

- Standards and Specifications**
- When fueling must occur onsite, the contractor shall select and designate an area to be used, subject to approval of the Resident Engineer (RE).
 - Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on fueling trucks and shall be disposed of properly after use.
 - Drip pans or absorbent pads shall be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
 - Dedicated fueling areas shall be protected from storm water run-on and runoff, and shall be located at least 15 m (50 ft) from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
 - Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut-off to control drips. Fueling operations shall not be left unattended.
 - Protect fueling areas with berms and/or dikes to prevent run-on, runoff, and to contain spills.

Vehicle and Equipment Fueling

NS-9

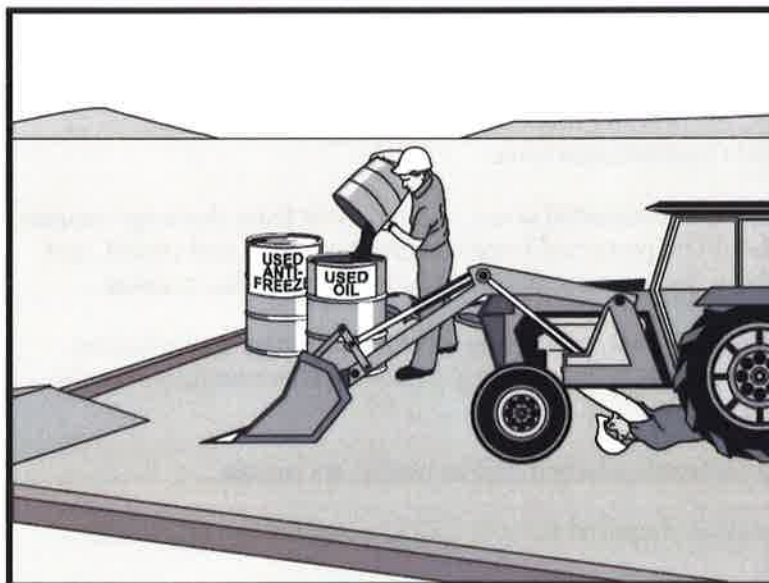
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD). Ensure the nozzle is secured upright when not in use.
- Fuel tanks shall not be "topped-off."
- Vehicles and equipment shall be inspected on each day of use for leaks. Leaks shall be repaired immediately or problem vehicles or equipment shall be removed from the project site.
- Absorbent spill clean-up materials shall be available in fueling and maintenance areas and used on small spills instead of hosing down or burying techniques. The spent absorbent material shall be removed promptly and disposed of properly.
- Federal, state, and local requirements shall be observed for any stationary above ground storage tanks. Refer to WM-1, "Material Delivery and Storage."
- Mobile fueling of construction equipment throughout the site shall be minimized. Whenever practical, equipment shall be transported to the designated fueling area.

Maintenance and Inspection

- Fueling areas and storage tanks shall be inspected regularly.
- Keep an ample supply of spill cleanup material on the site.
- Immediately cleanup spills and properly dispose of contaminated soil and cleanup materials.



Vehicle & Equipment Maintenance NS-10



Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a “dry and clean site”. The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TR-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and Equipment Fueling.

Objectives

EC	Erosion Control	
SE	Sediment Control	
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	<input checked="" type="checkbox"/>
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

Targeted Constituents

Sediment	
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



NS-10 Vehicle & Equipment Maintenance

Implementation

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runoff and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.
- Repair leaks of fluids and oil immediately.

Vehicle & Equipment Maintenance NS-10

Listed below is further information if you must perform vehicle or equipment maintenance onsite.

Safer Alternative Products

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an “environmentally friendly” label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The “chlor” term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

Recycling and Disposal

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like, trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Costs

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

NS-10 Vehicle & Equipment Maintenance

Inspection and Maintenance

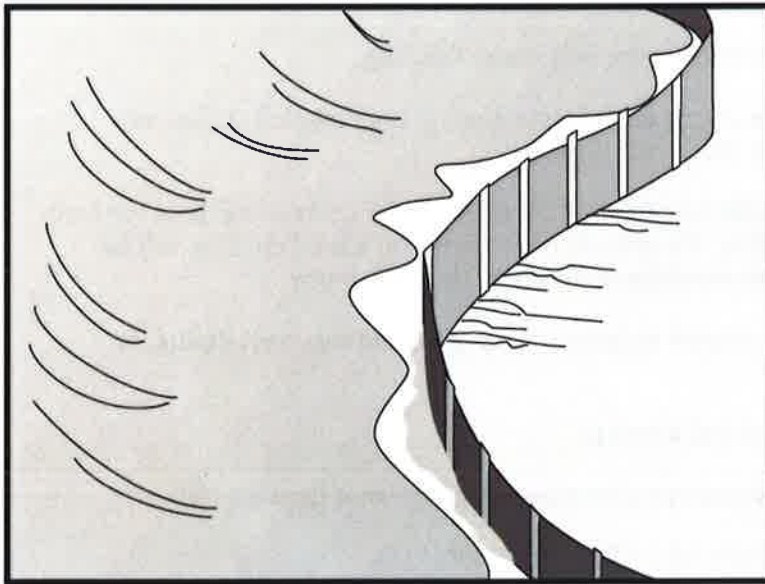
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.



Description and Purpose

A silt fence is made of a filter fabric that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.

Suitable Applications

Silt fences are suitable for perimeter control, placed below areas where sheet flows discharge from the site. They should also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion. Silt fences are generally ineffective in locations where the flow is concentrated and are only applicable for sheet or overland flows. Silt fences are most effective when used in combination with erosion controls. Suitable applications include:

- Along the perimeter of a project.
- Below the toe or down slope of exposed and erodible slopes.
- Along streams and channels.
- Around temporary spoil areas and stockpiles.
- Below other small cleared areas.

Limitations

- Do not use in streams, channels, drain inlets, or anywhere flow is concentrated.

Objectives

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Objective
- ☐ Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-8 Sandbag Barrier
- SE-9 Straw Bale Barrier



- Do not use in locations where ponded water may cause flooding.
- Do not place fence on a slope, or across any contour line. If not installed at the same elevation throughout, silt fences will create erosion.
- Filter fences will create a temporary sedimentation pond on the upstream side of the fence and may cause temporary flooding. Fences not constructed on a level contour will be overtopped by concentrated flow resulting in failure of the filter fence.
- Improperly installed fences are subject to failure from undercutting, overlapping, or collapsing.
 - Not effective unless trenched and keyed in.
 - Not intended for use as mid-slope protection on slopes greater than 4:1 (H:V).
 - Do not allow water depth to exceed 1.5 ft at any point.

Implementation

General

A silt fence is a temporary sediment barrier consisting of filter fabric stretched across and attached to supporting posts, entrenched, and, depending upon the strength of fabric used, supported with plastic or wire mesh fence. Silt fences trap sediment by intercepting and detaining small amounts of sediment-laden runoff from disturbed areas in order to promote sedimentation behind the fence.

Silt fences are preferable to straw bale barriers in many cases. Laboratory work at the Virginia Highway and Transportation Research Council has shown that silt fences can trap a much higher percentage of suspended sediments than can straw bales. While the failure rate of silt fences is lower than that of straw bale barriers, there are many instances where silt fences have been improperly installed. The following layout and installation guidance can improve performance and should be followed:

- Use principally in areas where sheet flow occurs.
- Don't use in streams, channels, or anywhere flow is concentrated. Don't use silt fences to divert flow.
- Don't use below slopes subject to creep, slumping, or landslides.
- Select filter fabric that retains 85% of soil by weight, based on sieve analysis, but that is not finer than an equivalent opening size of 70.
- Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.
- The maximum length of slope draining to any point along the silt fence should be 200 ft or less.
- The maximum slope perpendicular to the fence line should be 1:1.

- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 ft² of ponding area should be provided for every acre draining to the fence.
- Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
- Leave an undisturbed or stabilized area immediately down slope from the fence where feasible.
- Silt fences should remain in place until the disturbed area is permanently stabilized.

Design and Layout

Selection of a filter fabric is based on soil conditions at the construction site (which affect the equivalent opening size (EOS) fabric specification) and characteristics of the support fence (which affect the choice of tensile strength). The designer should specify a filter fabric that retains the soil found on the construction site yet that it has openings large enough to permit drainage and prevent clogging. The following criteria is recommended for selection of the equivalent opening size:

1. If 50 percent or less of the soil, by weight, will pass the U.S. Standard Sieve No. 200, select the EOS to retain 85 % of the soil. The EOS should not be finer than EOS 70.
2. For all other soil types, the EOS should be no larger than the openings in the U.S. Standard Sieve No. 70 except where direct discharge to a stream, lake, or wetland will occur, then the EOS should be no larger than Standard Sieve No. 100.

To reduce the chance of clogging, it is preferable to specify a fabric with openings as large as allowed by the criteria. No fabric should be specified with an EOS smaller than U.S. Standard Sieve No. 100. If 85% or more of a soil, by weight, passes through the openings in a No. 200 sieve, filter fabric should not be used. Most of the particles in such a soil would not be retained if the EOS was too large and they would clog the fabric quickly if the EOS were small enough to capture the soil.

The fence should be supported by a plastic or wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Filter fabric material should contain ultraviolet inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 °F to 120 °F.

- Layout in accordance with attached figures.
- For slopes steeper than 2:1 (H:V) and that contain a high number of rocks or large dirt clods that tend to dislodge, it may be necessary to install additional protection immediately adjacent to the bottom of the slope, prior to installing silt fence. Additional protection may be a chain link fence or a cable fence.
- For slopes adjacent to sensitive receiving waters or Environmentally Sensitive Areas (ESAs), silt fence should be used in conjunction with erosion control BMPs.

Materials

- Silt fence fabric should be woven polypropylene with a minimum width of 36 in. and a minimum tensile strength of 100 lb force. The fabric should conform to the requirements in ASTM designation D4632 and should have an integral reinforcement layer. The reinforcement layer should be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric should be between 0.1 sec^{-1} and 0.15 sec^{-1} in conformance with the requirements in ASTM designation D4491.
- Wood stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.
- Staples used to fasten the fence fabric to the stakes should be not less than 1.75 in. long and should be fabricated from 15 gauge or heavier wire. The wire used to fasten the tops of the stakes together when joining two sections of fence should be 9 gauge or heavier wire. Galvanizing of the fastening wire will not be required.
- There are new products that may use prefabricated plastic holders for the silt fence and use bar reinforcement instead of wood stakes. If bar reinforcement is used in lieu of wood stakes, use number four or greater bar. Provide end protection for any exposed bar reinforcement.

Installation Guidelines

Silt fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- A trench should be excavated approximately 6 in. wide and 6 in. deep along the line the proposed silt fence.
- Bottom of the silt fence should be keyed-in a minimum of 12 in.
- Posts should be spaced a maximum of 6 ft apart and driven securely into the ground a minimum of 18 in. or 12 in. below the bottom of the trench.
- When standard strength filter fabric is used, a plastic or wire mesh support fence should be fastened securely to the upslope side of posts using heavy-duty wire staples at least 1 in. long. The mesh should extend into the trench. When extra-strength filter fabric and closer post spacing are used, the mesh support fence may be eliminated. Filter fabric should be purchased in a long roll, then cut to the length of the barrier. When joints are necessary, filter cloth should be spliced together only at a support post, with a minimum 6 in. overlap and both ends securely fastened to the post.
- The trench should be backfilled with compacted native material.
- Construct silt fences with a setback of at least 3 ft from the toe of a slope. Where a silt fence is determined to be not practicable due to specific site conditions, the silt fence may be constructed at the toe of the slope, but should be constructed as far from the toe of the slope as practicable. Silt fences close to the toe of the slope will be less effective and difficult to maintain.

- Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the barrier; in no case should the reach exceed 500 ft.

Costs

- Average annual cost for installation and maintenance (assumes 6 month useful life): \$7 per lineal foot (\$850 per drainage acre). Range of cost is \$3.50 - \$9.10 per lineal foot.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Repair undercut silt fences.
- Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months.
- Silt fences that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed of, and replaced with new silt fence barriers.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.
- Silt fences should be left in place until the upstream area is permanently stabilized. Until then, the silt fence must be inspected and maintained.
- Holes, depressions, or other ground disturbance caused by the removal of the silt fences should be backfilled and repaired.

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, United States Environmental Protection Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group-Working Paper, USEPA, April 1992.

Sedimentation and Erosion Control Practices, and Inventory of Current Practices (Draft), UESPA, 1990.

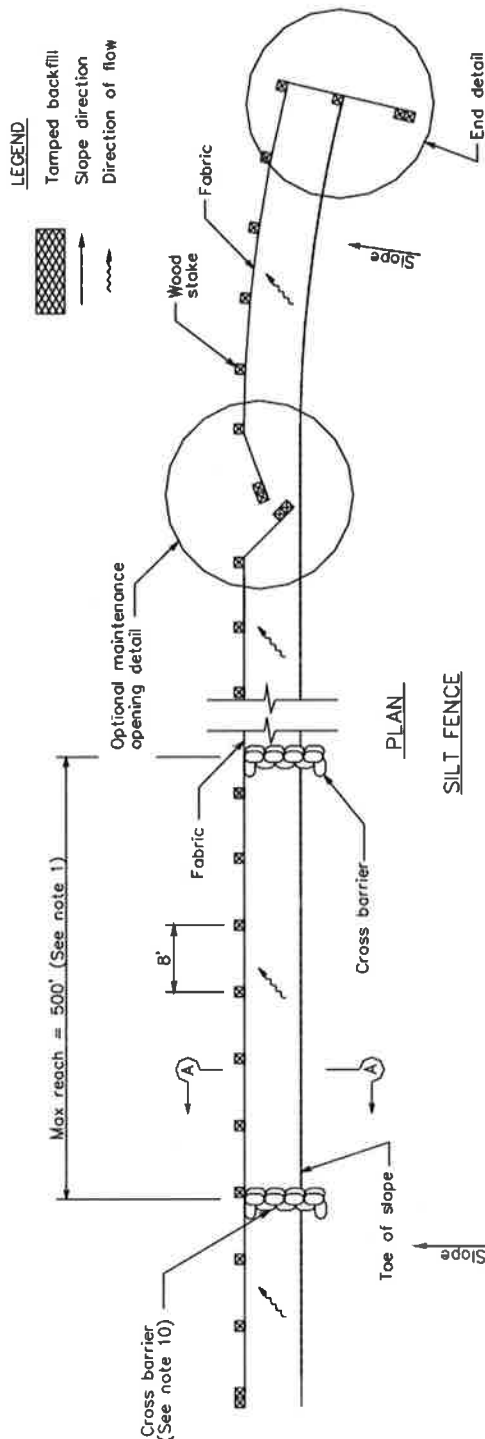
Southeastern Wisconsin Regional Planning Commission (SWRPC). Costs of Urban Nonpoint Source Water Pollution Control Measures. Technical Report No. 31. Southeastern Wisconsin Regional Planning Commission, Waukesha, WI. 1991

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Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

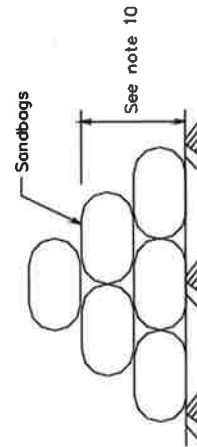
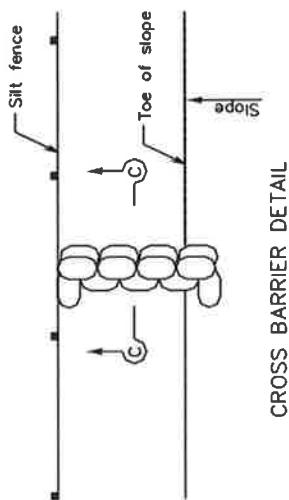
U.S. Environmental Protection Agency (USEPA). Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. U.S. Environmental Protection Agency, Office of Water, Washington, DC, 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

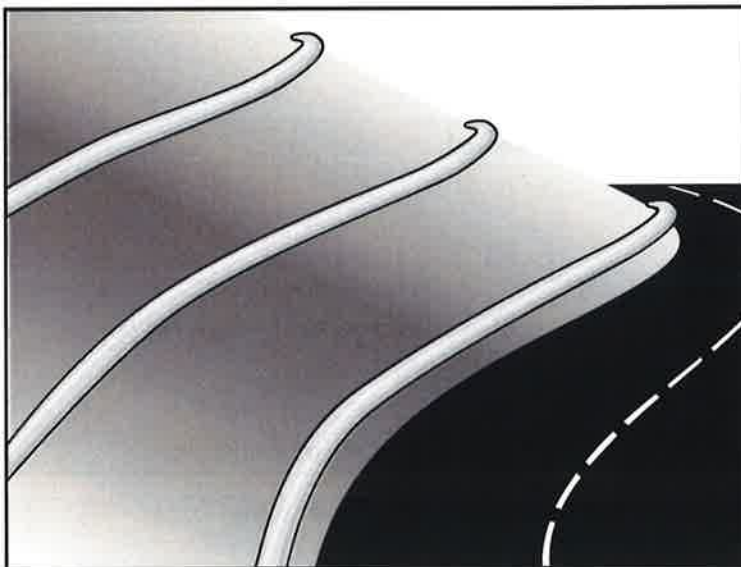


NOTES

- Construct the length of each reach so that the change in base elevation along the reach does not exceed $\frac{1}{3}$ the height of the linear barrier, in no case shall the reach length exceed 500'.
- The last 8'-0" of fence shall be turned up slope.
- Stake dimensions are nominal.
- Dimension may vary to fit field condition.
- Stakes shall be spaced at 8'-0" maximum and shall be positioned on downstream side of fence.
- Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
- Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.
- For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
- Minimum 4 staples per stake. Dimensions shown are typical.
- Cross barriers shall be a minimum of $\frac{1}{3}$ and a maximum of $\frac{1}{2}$ the height of the linear barrier.
- Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
- Joining sections shall not be placed at sump locations.
- Sandbag rows and layers shall be offset to eliminate gaps.







Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

Categories

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- ☒ Primary Category
- ☒ Secondary Category

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

- SE-1 Silt Fence
- SE-6 Gravel Bag Berm
- SE-8 Sandbag Barrier
- SE-12 Temporary Silt Dike
- SE-14 Biofilter Bags



- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
 - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
 - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
 - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be 1/4 to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
 - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
 - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Costs

Material costs for regular fiber rolls range from \$20 - \$30 per 25 ft roll.

Material costs for PAM impregnated fiber rolls range between 7.00-\$9.00 per linear foot, based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

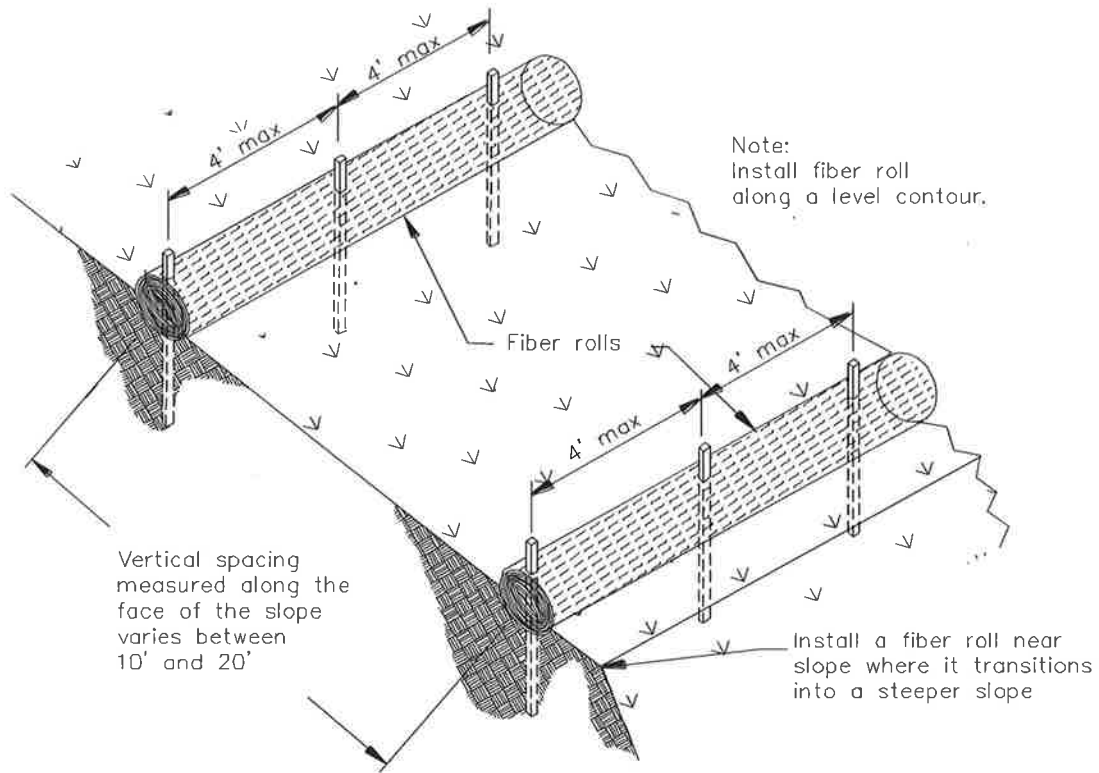
in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

References

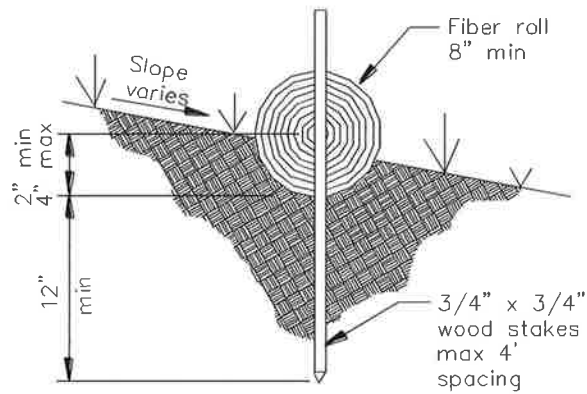
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.



TYPICAL FIBER ROLL INSTALLATION

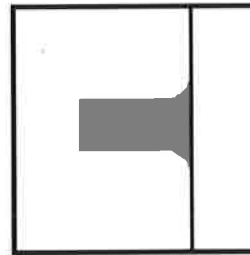
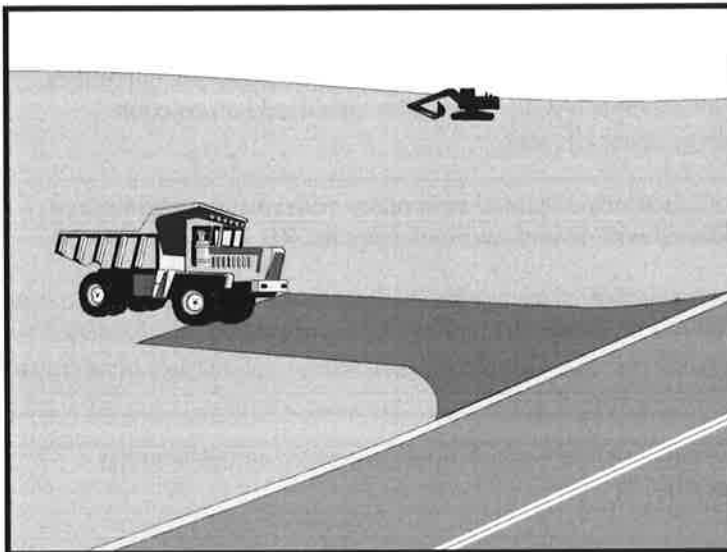
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ENTRENCHMENT DETAIL

N.T.S.

Stabilized Construction Entrance/Exit

TC-1

Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Appropriate Applications

- Use at construction sites:
 - Where dirt or mud can be tracked onto public roads.
 - Adjacent to water bodies.
 - Where poor soils are encountered.
 - Where dust is a problem during dry weather conditions.
- This BMP may be implemented on a project-by-project basis in addition to other BMPs when determined necessary and feasible by the Resident Engineer (RE).

Limitations

- Site conditions will dictate design and need.

Standards and Specifications

- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment-trapping device before discharge.
- Design stabilized entrance/exit to support the heaviest vehicles and equipment that will use it.



Stabilized Construction Entrance/Exit

TC-1

- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. The use of asphalt concrete (AC) grindings for stabilized construction access/roadway is not allowed.
- Use of constructed/manufactured steel plates with ribs for entrance/exit access is allowed with written approval from the RE.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 300 mm (12 in) depth, or place aggregate to a depth recommended by the RE. Crushed aggregate greater than 75 mm (3 inches) and smaller than 150 mm (6 inches) shall be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Implement BMP SC-7, "Street Sweeping and Vacuuming" as needed and as required.
- Require all employees, subcontractors, and suppliers to utilize the stabilized construction access.
- All exit locations intended to be used continuously and for a period of time shall have stabilized construction entrance/exit BMPs (TC-1 "Stabilized Construction Entrance/Exit" or TC-3 "Entrance/Outlet Tire Wash").

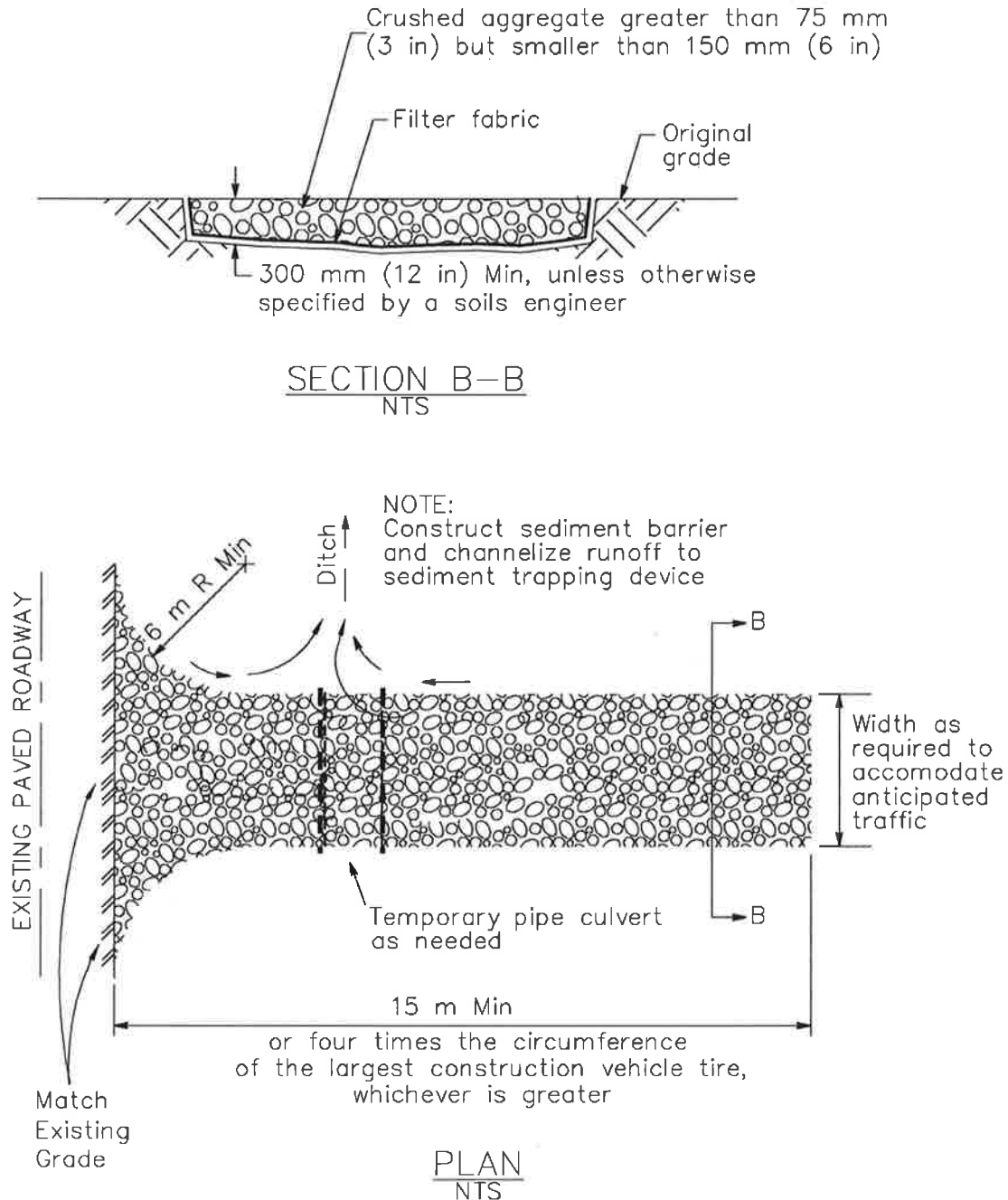
Maintenance and Inspection

- Inspect routinely for damage and assess effectiveness of the BMP. Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment or as directed by the RE.
- Keep all temporary roadway ditches clear.
- Inspect for damage and repair as needed.



Stabilized Construction Entrance/Exit

TC-1

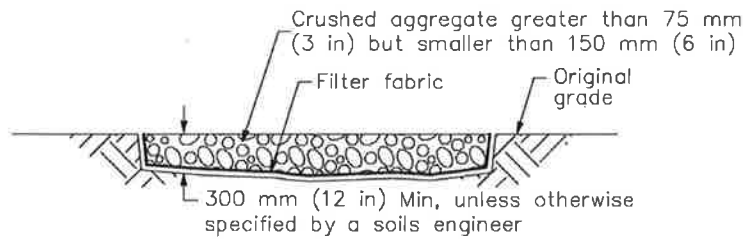


Stabilized Construction Entrance/Exit (Type 1)

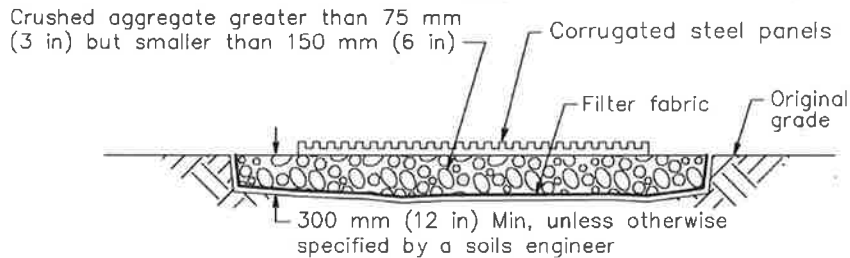


Stabilized Construction Entrance/Exit

TC-1

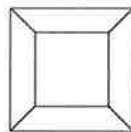


SECTION B-B
NTS

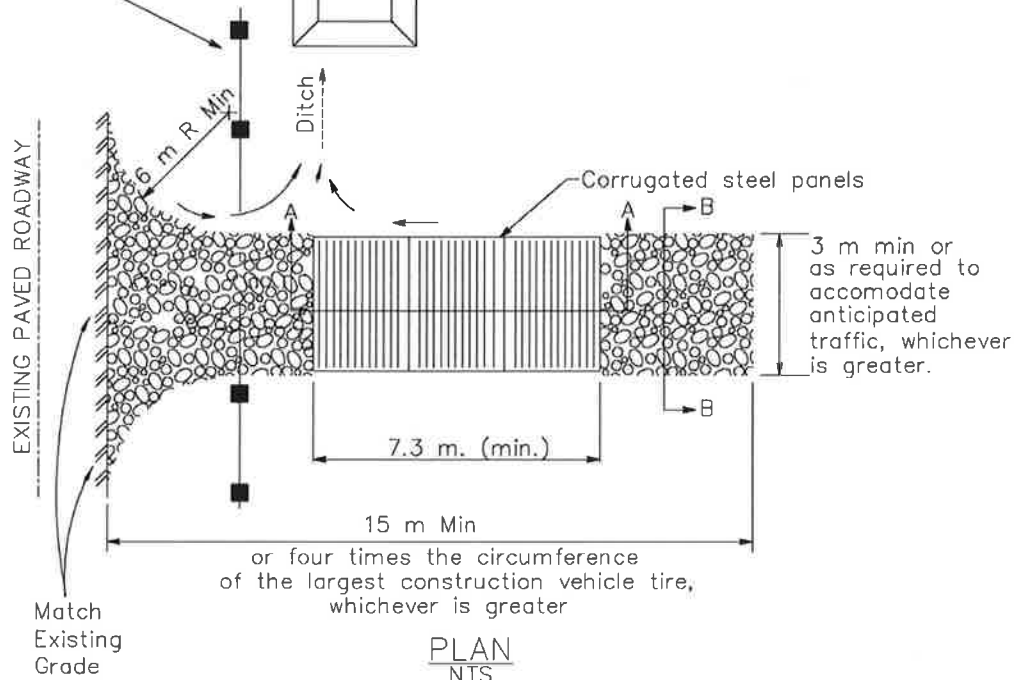


SECTION A-A
NOT TO SCALE

NOTE:
Construct sediment barrier and channelize runoff to sediment trapping device

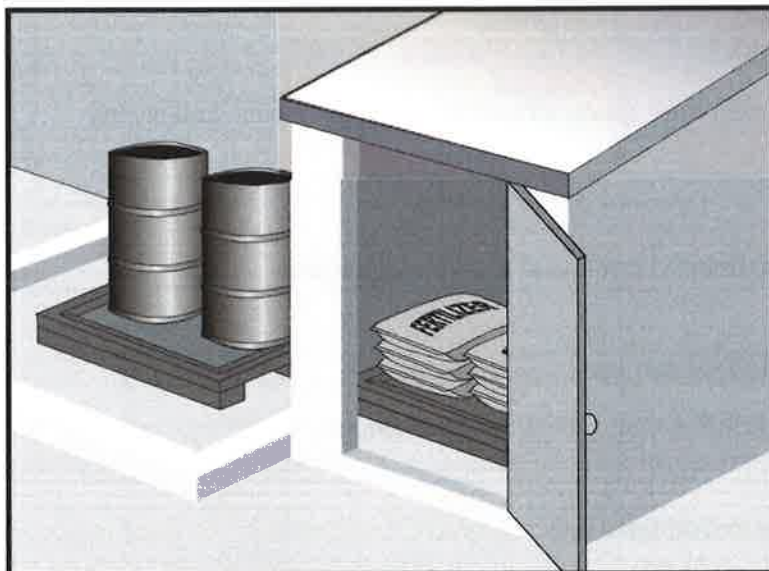


Sediment trapping device



Stabilized Construction Entrance/Exit (Type 2)





Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- ☒ Primary Category
- ☒ Secondary Category

Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None

Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease



- Asphalt and concrete components
- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

Implementation

The following steps should be taken to minimize risk:

- Chemicals must be stored in water tight containers with appropriate secondary containment or in a storage shed.
- When a material storage area is located on bare soil, the area should be lined and bermed.
- Use containment pallets or other practical and available solutions, such as storing materials within newly constructed buildings or garages, to meet material storage requirements.
- Stack erodible landscape material on pallets and cover when not in use.
- Contain all fertilizers and other landscape materials when not in use.
- Temporary storage areas should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be available on-site for all materials stored that have the potential to effect water quality.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located away from waterways, if possible.
 - Avoid transport near drainage paths or waterways.
 - Surround with earth berms or other appropriate containment BMP. See EC-9, Earth Dikes and Drainage Swales.
 - Place in an area that will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.

- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- Keep ample spill cleanup supplies appropriate for the materials being stored. Ensure that cleanup supplies are in a conspicuous, labeled area.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose of materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Materials should be covered prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or completely enclosed storage sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous wastes.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.
- If spills or leaks of materials occur that are not contained and could discharge to surface waters, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

Cost

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Keep storage areas clean and well organized, including a current list of all materials onsite.
- Inspect labels on containers for legibility and accuracy.

- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

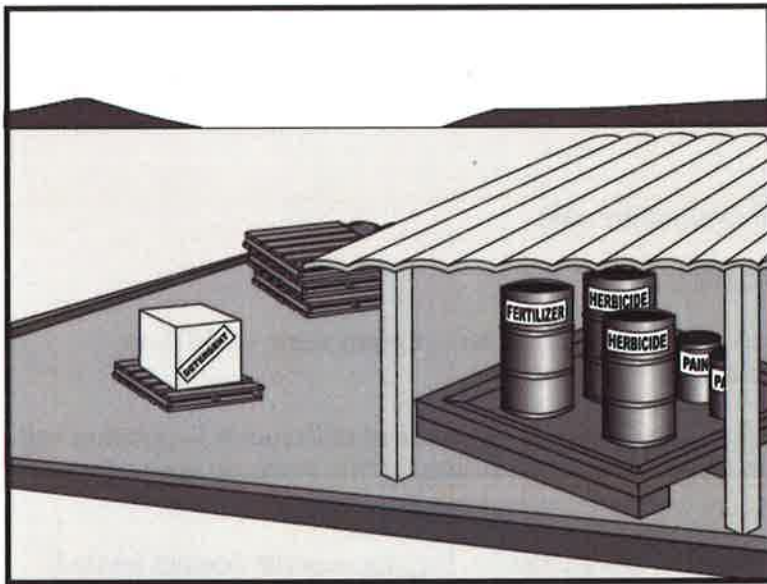
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



Limitations

Safer alternative building and construction products may not be available or suitable in every instance.

Implementation

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydro seeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit or temporary sediment trap. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.

- Require contractors to complete the "Report of Chemical Spray Forms" when spraying herbicides and pesticides.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Maintenance of this best management practice is minimal.
- Spot check employees and subcontractors throughout the job to ensure appropriate practices are being employed.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

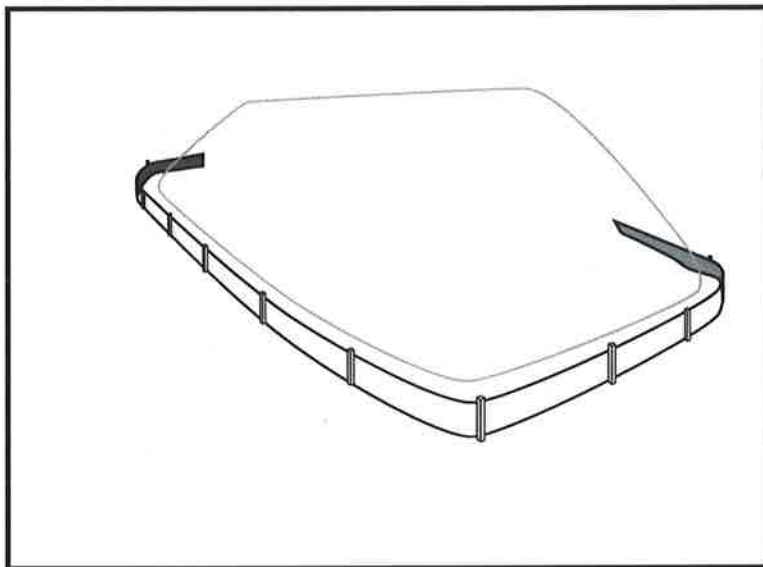
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Stockpile Management

WM-3



Categories

EC	Erosion Control	
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	<input checked="" type="checkbox"/>
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- ☒ Primary Category
☒ Secondary Category

Description and Purpose

Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Suitable Applications

Implement in all projects that stockpile soil and other loose materials.

Limitations

- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of plastic materials should be avoided when feasible and photodegradable plastics should not be used.

Implementation

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- All stockpiles are required to be protected immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles

- Cover and protect soil stockpiles with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Consider temporary vegetation for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base

- Provide covers and protect these stockpiles with a temporary perimeter sediment barrier at all times.

Stockpiles of "cold mix"

- Cover cold mix stockpiles and place them on plastic sheeting (or comparable material) and surround the stockpiles with a berm all times.

Stockpiles of fly ash, stucco, hydrated lime

- Cover stockpiles of materials that may raise the pH of runoff (i.e., basic materials) with plastic and surround the stockpiles with a berm at all times.

Stockpiles/Storage of wood (Pressure treated with chromated copper arsenate or ammoniacal copper zinc arsenate)

- Cover treated wood with plastic sheeting (or comparable material) and surround with a berm at all times.

Protection of Active Stockpiles

Active stockpiles of the identified materials should be protected as follows:

- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of “cold mix” and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Costs

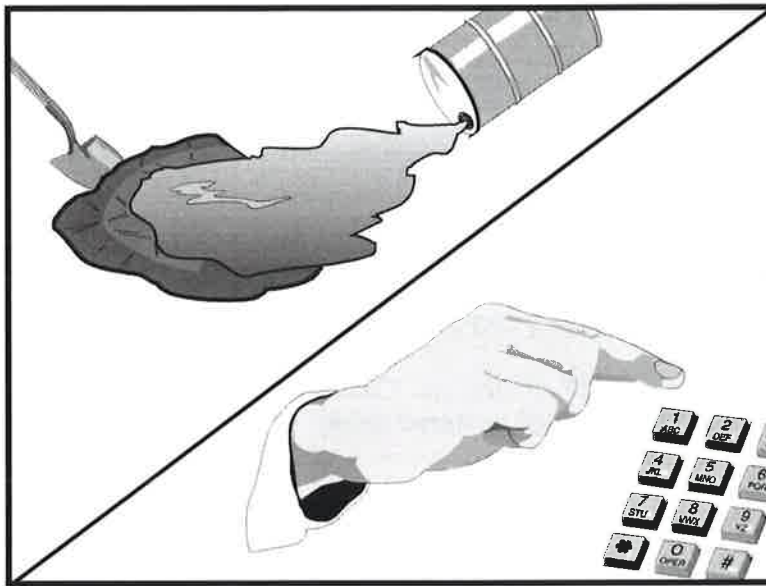
For cost information associated with stockpile protection refer to the individual erosion or sediment control BMP fact sheet considered for implementation (For example, refer to SE-1 Silt Fence for installation of silt fence around the perimeter of a stockpile.)

Inspection and Maintenance

- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- ☒ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals



- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor’s superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn’t compromise clean up activities.
- Do not bury or wash spills with water.

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

- Spills should be cleaned up immediately:
 - Contain spread of the spill.
 - Notify the project foreman immediately.
 - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
 - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
 - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
 - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
 - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
 - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
 - Notification should first be made by telephone and followed up with a written report.
 - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
 - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

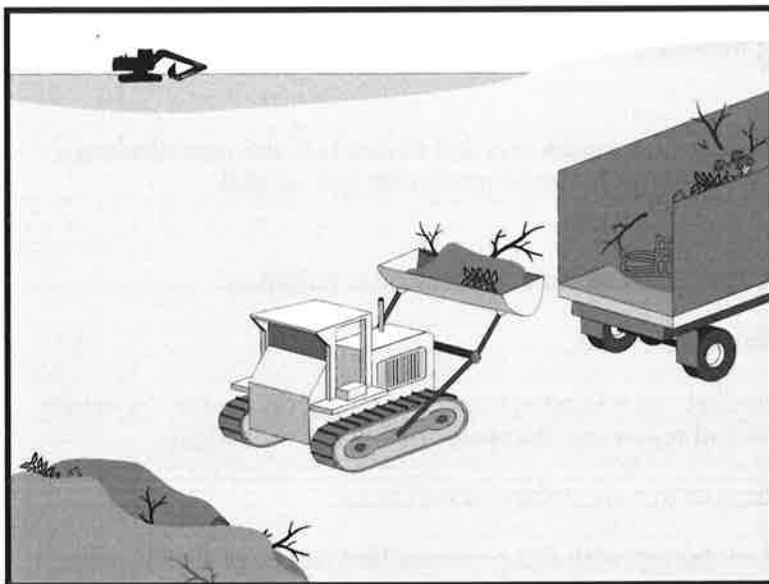
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials
- Highway planting wastes, including vegetative material,

Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	<input checked="" type="checkbox"/>
Bacteria	
Oil and Grease	<input checked="" type="checkbox"/>
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



plant containers, and packaging materials

Limitations

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Implementation

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Cover waste containers at the end of each work day and when it is raining.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.

- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runoff should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

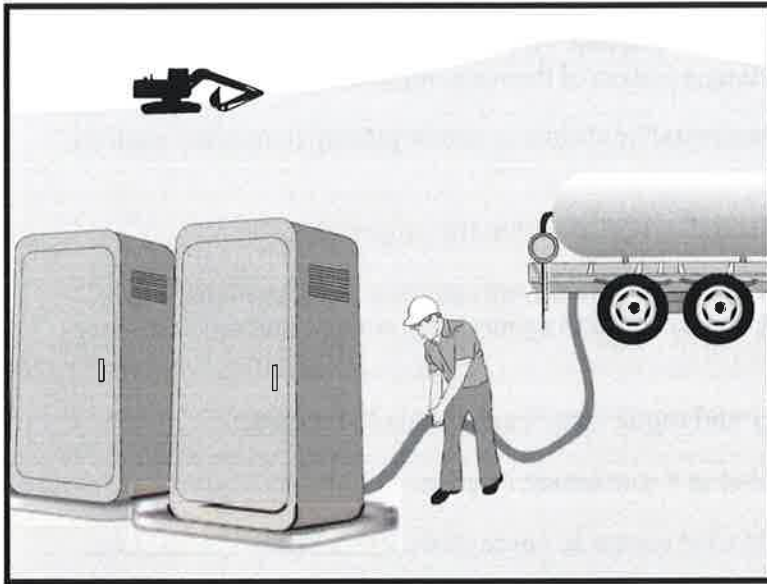
References

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Sanitary/Septic Waste Management WM-9



Description and Purpose

Proper sanitary and septic waste management prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Suitable Applications

Sanitary septic waste management practices are suitable for use at all construction sites that use temporary or portable sanitary and septic waste systems.

Limitations

None identified.

Implementation

Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements. In many cases, one contract with a local facility supplier will be all that it takes to make sure sanitary wastes are properly disposed.

Storage and Disposal Procedures

- Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. If site conditions allow, place portable facilities a minimum of 50 feet from drainage conveyances and traffic areas. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.

Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

Legend:

- ☒ Primary Category
- ☒ Secondary Category

Targeted Constituents

Sediment	
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	<input checked="" type="checkbox"/>
Oil and Grease	
Organics	<input checked="" type="checkbox"/>

Potential Alternatives

None



Sanitary/Septic Waste Management WM-9

- Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water.
- Consider safety as well as environmental implications before placing temporary sanitary facilities.
- Wastewater should not be discharged or buried within the project site.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, should comply with the local health agency, city, county, and sewer district requirements.
- Only reputable, licensed sanitary and septic waste haulers should be used.
- Sanitary facilities should be located in a convenient location.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an onsite disposal system (OSDS), such as a septic system, local health agency requirements must be followed.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- Sanitary and septic facilities should be maintained in good working order by a licensed service.
- Regular waste collection by a licensed hauler should be arranged before facilities overflow.
- If a spill does occur from a temporary sanitary facility, follow federal, state and local regulations for containment and clean-up.

Education

- Educate employees, subcontractors, and suppliers on sanitary and septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary and septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary and septic waste.
- Hold regular meetings to discuss and reinforce the use of sanitary facilities (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Costs

All of the above are low cost measures.

Sanitary/Septic Waste Management WM-9

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Arrange for regular waste collection.
- If high winds are expected, portable sanitary facilities must be secured with spikes or weighed down to prevent over turning.
- If spills or leaks from sanitary or septic facilities occur that are not contained and discharge from the site, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Appendix Q

Pollutant Testing Guidance Table

Appendix Q

Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Asphalt Products	Hot Asphalt	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		
	Asphalt Emulsion				
	Liquid Asphalt (tack coat)				
	Cold Mix				
	Crumb Rubber	Yes – Black, solid material	Visually Observable - No Testing Required		
	Asphalt Concrete (Any Type)	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		
Cleaning Products	Acids	No	pH Acidity Anions (acetic acid, phosphoric acid, sulfuric acid, nitric acid, hydrogen chloride)	pH Meter Acidity Test Kit	EPA 150.1 (pH)
					SM 2310B (Acidity)
					EPA 300.0 (Anion)
	Bleaches	No	Residual Chlorine	Chlorine	SM 4500-CL G (Res. Chlorine)
	Detergents	Yes - Foam	Visually Observable - No Testing Required		
	TSP	No	Phosphate	Phosphate	EPA 365.3 (Phosphate)
	Solvents	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)

Appendix Q

Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Portland Concrete Cement & Masonry Products	Portland Cement (PCC)	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Masonry products	No	pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
			Alkalinity		SM 2320 (Alkalinity)
	Sealant (Methyl Methacrylate - MMA)	No	Methyl Methacrylate	None	EPA 625 (SVOC)
			Cobalt		EPA 200.8 (Metal)
			Zinc		
	Incinerator Bottom Ash Bottom Ash Steel Slag Foundry Sand Fly Ash Municipal Solid Waste	No	Aluminum Calcium Vanadium Zinc	Calcium Test	EPA 200.8 (Metal) EPA 200.7 (Calcium)
	Mortar	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Concrete Rinse Water	Yes - Milky Liquid	Visually Observable - No Testing Required		
	Non-Pigmented Curing Compounds	No	Acidity	pH Meter Alkalinity or Acidity Test Kit	SM 2310B (Acidity)
			Alkalinity		SM 2320 (Alkalinity)
			pH		EPA 150.1 (pH)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)

Appendix Q

Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Landscaping and Other Products	Aluminum Sulfate	No	Aluminum	TDS Meter Sulfate	EPA 200.8 (Metal)
			TDS		EPA 160.1 (TDS)
			Sulfate		EPA 300.0 (Sulfate)
	Sulfur-Elemental	No	Sulfate	Sulfate	EPA 300.0 (Sulfate)
	Fertilizers-Inorganic ⁴	No	Nitrate	Nitrate	EPA 300.0 (Nitrate)
			Phosphate	Phosphate	EPA 365.3 (Phosphate)
			Organic Nitrogen	None	EPA 351.3 (TKN)
			Potassium	None	EPA 200.8 (Metal)
	Fertilizers-Organic	No	TOC	Nitrate	EPA 415.1 (TOC)
			Nitrate		EPA 300.0 (Nitrate)
			Organic Nitrogen		EPA 351.3 (TKN)
			COD		EPA 410.4 (COD)
	Natural Earth (Sand, Gravel, and Topsoil)	Yes - Cloudiness and turbidity	Visually Observable - No Testing Required		
	Herbicide	No	Herbicide	None	Check lab for specific herbicide or pesticide
	Pesticide		Pesticide		
	Lime		Alkalinity	pH Meter Alkalinity or Acidity Test Kit	SM 2320 (Alkalinity)
			pH		EPA 150.1 (pH)

Appendix Q

Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Painting Products	Paint	Yes	Visually Observable - No Testing Required		
	Paint Strippers	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)
	Resins	No	COD	None	EPA 410.4 (COD)
			SVOC		EPA 625 (SVOC)
	Sealants	No	COD	None	EPA 410.4 (COD)
	Solvents	No	COD	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Lacquers, Varnish, Enamels, and Turpentine	No	COD	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Thinners	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			COD		EPA 410.4 (COD)
Portable Toilet Waste Products	Portable Toilet Waste	Yes	Visually Observable - No Testing Required		

Appendix Q

Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Contaminated Soil ⁵	Aerially Deposited Lead ³	No	Lead	None	EPA 200.8 (Metal)
	Petroleum	Yes – Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required		
	Other	No	Contaminant Specific	Contaminant Specific	Contaminant Specific
Line Flushing Products	Chlorinated Water	No	Total chlorine	Chlorine	SM 4500-CL G (Res. Chlorine)
Adhesives	Adhesives	No	COD	None	EPA 410.4 (COD)
			Phenols	Phenol	EPA 420.1 (Phenol)
			SVOC	None	EPA 625 (SVOC)
Dust Palliative Products	Salts (Magnesium Chloride, Calcium Chloride, and Natural Brines)	No	Chloride	Chloride	EPA 300.0 (Chloride)
			TDS	TDS Meter	EPA 160.1 (TDS)
			Cations (Sodium, Magnesium, Calcium)	None	EPA 200.7 (Cations)
Vehicle	Antifreeze and Other Vehicle Fluids	Yes - Colored Liquid	Visually Observable - No Testing Required		
	Batteries	No	Sulfuric Acid	None	EPA 300.0 (Sulfate)
			Lead	None	EPA 200.8 (Metal)
			pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
	Fuels, Oils, Lubricants	Yes - Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required		

Appendix Q

Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Soil Amendment/Stabilization Products	Polymer/Copolymer ^{6, 7}	No	Organic Nitrogen	None	EPA 351.3 (TKN)
			BOD	None	EPA 405.1 (BOD)
			COD	None	EPA 410.4 (COD)
			DOC	None	EPA 415.1 (DOC)
			Nitrate	Nitrate	EPA 300.0 (Nitrate)
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Nickel	None	EPA 200.8 (Metal)
	Straw/Mulch	Yes - Solids	Visually Observable - No Testing Required		
	Lignin Sulfonate	No	Alkalinity	Alkalinity	SM 2320 (Alkalinity)
			TDS	TDS Meter	EPA 160.1 (TDS)
	Psyllium	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
	Guar/Plant Gums	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
			Nickel		EPA 200.8 (Metal)
	Gypsum	No	pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
			Calcium	Calcium	EPA 200.7 (Calcium)
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Aluminum	None	EPA 200.8 (Metal)
			Barium		
			Manganese		
			Vanadium		

Appendix Q Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Treated Wood Products	Ammoniacal-Copper-Zinc-Arsenate (ACZA)	No	Arsenic	Total Chromium	EPA 200.8 (Metal)
	Copper-Chromium-Arsenic (CCA)		Total Chromium		
	Ammoniacal-Copper-Arsenate (ACA)		Copper		
	Copper Naphthenate		Zinc		
	Creosote	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required		

Notes:

- 1 If specific pollutant is known, analyze only for that specific pollutant. See MSDS to verify.
- For each construction material, test for one of the pollutant indicators. Bolded pollutant indicates lowest analysis cost or best indicator. However, the composition of the specific construction material, if known, is the first criterion for selecting which analysis to use.
- See www.hach.com, www.lamotte.com, www.ysi.com and www.chemetrics.com for some of the test kits
- If the type of inorganic fertilizer is unknown, analyze for all pollutant indicators listed.
- Only if special handling requirements are required in the contract documents for aerially deposited lead (ADL)
- If used with a dye or fiber matrix, it is considered visually observable and no testing is required.
- Based upon research conducted by the State of California Department of Transportation (Caltrans), the following copolymers/polymers do not discharge pollutants and water quality sampling and analysis is **not** required: Super Tak™, M-Binder™, Fish Stik™, Pro40dc™, Fisch-Bond™, and Soil Master WR™.

**SECTION 01 21 00
ALLOWANCES**

PART 1 - GENERAL

1.1 ALLOWANCES REQUIREMENTS

- A. Included in the Contract Sum are all Allowances stated below. Items covered by Allowances shall be supplied for such amounts and by such persons or firms as University's Representative may direct.
- B. The following shall apply, unless otherwise provided in the Contract Documents:
 - 1. Allowances shall cover the cost to Contractor of materials and equipment delivered at the Project site and all required taxes, less applicable trade discounts.
 - 2. Contractor's costs required for storage on and off the Project site, security, loading and unloading, handling at the Project site, labor, installation costs, overhead, profit, and other expenses contemplated for stated Allowance amounts shall be included in the Contract Sum and not in the Allowances.
 - 3. Unless otherwise provided herein, whenever costs are more than or less than Allowances, the Contract Sum shall be adjusted by Change Order based on (1) the difference between actual costs and the Allowances and (2) changes in Contractor's costs.
 - 4. At any time during the course of the Contract, the University's Representative may elect to delete any or all allowances via Change Order for full amount listed below.

1.2 DESCRIPTION OF ALLOWANCES

- 1. The following allowance shall be included in the LUMP SUM BASE BID:
 - a) ALLOWANCE No. 1 – Barbed Wire Fence Repair:
Include **\$20,000** for barbed wire fence repair.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 21 00

SECTION 01 22 00
UNIT PRICES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Unit Price quotations shall be inserted in the appropriate spaces in the Bid Form for each Unit Price item of Work described herein.
- B. Unit Prices stated in the Agreement shall be used to compute adjustments of the Contract Sum for approved Unit Price items of Work. Such adjustments shall be made by Change Order (Exhibit 9).
- C. Unit Prices shall include all labor, materials, tools, and equipment; all other direct and indirect costs necessary to complete the item of Work and to coordinate the Unit Price Work with adjacent Work; and shall include all overhead and profit. General Contractor shall accept compensation computed in accordance with the Unit Prices for work installed in place as full compensation for furnishing such Work.
- D. Compensation will be paid for those items of Work described in below, Unit Prices.

1.2 SPECIFIED WORK

- A. Applicable Sections of the Specifications describe the materials and methods required under the various Unit Price items of Work.

1.3 UNIT PRICES

- A. List of Unit Price Items and Descriptions

Unit Price No.	Description	Estimated Units
1	Small Mammal Burrow Excavation – 1 Backhoe with Operator for an 8 hour day	10 Work Days

1.4 ADVANCED COORDINATION

- A. Immediately notify University's Representative when conditions require the use of Unit Price items of Work.
- B. The applicability of, measurement methods for, documentation of, and the final adjustment of the Contract Sum for Unit Price items of Work shall be determined by the University's Representative.

- C. After performing Unit Price items of Work as directed by University's Representative, General Contractor shall take necessary measurements in the presence of University's Representative and shall submit calculations of quantities to University's Representative for approval. General Contractor shall notify University's Representative 1 day in advance of taking measurements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 22 00

SECTION 01 25 00
PRODUCT OPTIONS AND SUBSTITUTIONS
AS IT APPLIES

PART 1 - GENERAL

- 1.1 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 the 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. A product, material or equipment specified by brand or trade name followed by the words "or equal, no known equal," signifies that University does not have sufficient knowledge to specify a product, material or equipment, other than the one specified by brand or trade name, that is suitable for use on the Project. The use of the words "no known equal" is not intended to discourage substitution requests in accordance with the requirements specified herein.
 - E. 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.
 - F. 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.

- G. **COMPLETE AND ACCEPTABLE SUBSTITUTION SUBMITTALS SHALL BE DELIVERED TO THE UNIVERSITY'S REPRESENTATIVE NO LATER THAN 35 DAYS FROM THE NOTICE TO PROCEED. SUBMITTALS MAY BE REQUIRED SOONER THAN 35 DAYS IF THE NOTICE TO PROCEED WAS DELAYED BY THE CONTRACTOR OR IF REQUIRED BY EARLY ACTIVITIES INDICATED ON THE PRELIMINARY MASTER PROJECT SCHEDULE.**

1.2 **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 5 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 5 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 5-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.

1.3 **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 General 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 1.3.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 35-day and 5-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 subsection 1.2 above.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 25 00

**SECTION 01 26 13
REQUESTS FOR INFORMATION**

PART 1 - GENERAL

1.1 SUMMARY

- A. This section contains the procedures to be followed by the Contractor for submitting requests for clarification or additional information.

1.2 PROCEDURES

- A. Notification by the Contractor:
 - 1. Submit all requests for clarification and/or additional information in writing to the University's Representative using the Request for Information (RFI) form (Exhibit 17).
 - 2. RFI's not completely and correctly filled out by the Contractor will not be answered. Impacts to the Project arising from the Contractor's failure to properly submit RFI's are the Contractor's sole responsibility.
 - 3. Number RFI's sequentially. Submit a new RFI for each new question. Follow RFI number with sequential alphabetical suffix as necessary for each resubmission. For example, the first RFI shall be '001.' The second RFI shall be '002.' The first resubmittal of RFI 002 shall be '002.001.'
- B. Limit each RFI to one subject and one subject only. RFI's addressing more than one subject will not be answered.
- C. Submit RFI's if one of the following conditions occurs:
 - 1. Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
 - 2. 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.
 - 3. Contractor discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.
- D. Non Compliant RFI's
 - 1. RFI's will not be recognized or accepted if, in the opinion of the University's Representative, one of the following conditions exist:
 - a. The Contractor submits the RFI as a request for substitution.
 - b. The Contractor submits the RFI as a submittal.
 - c. The Contractor submits the RFI under the pretense of a Contract Documents discrepancy or omission without thorough review of the Documents.
 - d. The Contractor submits the RFI in manner that suggest that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.
 - e. The Contractor submits an RFI in an untimely manner without proper coordination and scheduling of Work or related trades.

2. If over 10% of the RFI's received from the Contractor are found to fall into these categories, the Contractor will be back charged the cost to the University of the additional effort required to respond to these inappropriate questions. Such back charges may include expenses incurred by the University's Design Professional as determined by the University's Representative. Said back charges will be deducted from the Contract Sum.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 Requests for Information

- A. Contractor shall ask for any clarification or request for information immediately upon discovery. Contractor shall submit RFI's in a reasonable time frame so as not to affect the project schedule while allowing the full response time described below. RFI's shall include:
 1. Specification Section or Drawing Number and Detail impacted.
 2. Address impacts to schedule and cost.
 3. Suggest possible solutions to fit field conditions, if appropriate.
- B. Response Time:
 1. The 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, RFI's will receive a response within **7 calendar days**. In some cases, this time frame may need to be lengthened for complex issues, or shortened for emergency situations, as mutually agreed in writing between the University's Representative and the Contractor.
 2. Should the Contractor proceed with the Work affected before receipt of a response from the University's Representative, any portion of the Work which is not done in accordance with the University's Representative's interpretations, clarifications, instructions, or decisions is subject to removal or replacement and the Contractor shall be responsible for all resultant losses.
- C. Failure to Agree: In the event of failure to agree as to the scope of the Contract requirements, the Contractor shall follow procedures set forth in the General Conditions.

END OF SECTION 01 26 13

**SECTION 01 31 19
PROJECT MEETINGS**

PART 1 - GENERAL

1.1 CONTRACTOR PRECONSTRUCTION CONFERENCE(S)

- A. Prior to commencement of Work, a preconstruction conference will be conducted by the University's Representative to discuss procedures that are to be followed during performance of the Work.
- B. Location: As designated by University's Representative.
- C. Attending shall be:
 - 1. University's Representative.
 - 2. Contractor's Project Manager
 - 3. Contractor's Project Site Superintendent.
 - 4. Subcontractors, as appropriate or as requested by the University's Representative.
 - 5. Others as appropriate or as requested by the University's Representative.

1.2 BILLING MEETINGS

- A. Monthly billing meeting shall be conducted by University's Representative each month prior to submittal of the Application For Payment (Exhibit 4).
- B. Location: As designated by University's Representative.
- C. Attending shall be:
 - 1. University's Representative.
 - 2. University's Inspection Team.
 - 3. Others as appropriate or as requested by the University's Representative.

1.3 OAC (OWNER, ARCHITECT, CONSTRUCTION MANAGER) PROGRESS MEETINGS

- A. Weekly progress meetings will be held to discuss and resolve field problems. The University's Representative shall conduct these meetings.
- B. Location: At University's Representative job trailer and via conference call.
- C. Attending shall be:
 - 1. University's Representative.
 - 2. University's Consultants (optional)
 - 3. University's Design Professional and Design Professional's Consultants as appropriate.
 - 4. Others as appropriate or as requested by the University's Representative.

1.4 PREPATORY MEETINGS AND PRE-INSTALLATION CONFERENCES

- A. The University's Representative will conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction or when required in technical Specification Section.
- B. Attendance will be required of parties directly affecting, or affected by, or involved in the installation and its coordination or integration with other materials and installations that

have preceded or will follow the particular item of work or activity under consideration. Parties attending the conference shall be qualified and authorized to act on behalf of entity each represents.

- C. Conference Schedule: Schedule conference to assure a sufficient amount of time prior to the scheduled work or activity under consideration so that any concerns, problems or disagreements can be resolved without delaying the Project. Notify the University's Representative 7 days in advance of meeting date.
- D. The University's Representative will make physical arrangements for conferences, prepare agenda, preside at conferences, record minutes, and distribute copies within two days after conference to the University's Representative, the Project Inspector, conference participants and those affected by the decisions made at the conference. The University's Representative will record in the minute's significant discussions and agreements and disagreements.
- E. Do not proceed with the work or activity if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of work and reconvene the conference at the earliest feasible date.

1.5 GUARANTEES, BONDS, WARRANTIES AND SERVICE/OPERATION AND MAINTENANCE CONTRACTS/DATA REVIEW MEETING

- A. Eleven months following the date of Substantial Completion, a meeting shall be conducted by the University's Representative 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.
- B. Attending shall be:
 - 1. University's Representative.
 - 2. University's Consultants, as appropriate.
 - 3. University's Design Professional and Design Professional's Consultants as appropriate.
 - 4. Contractor superintendent(s) whom will be managing the project from on site.
 - 5. Subcontractors, as appropriate or as requested by the University's Representative.
 - 6. Others as appropriate or as requested by the University's Representative.

1.6 LEAN SCHEDULING AND PULL-PLANNING MEETINGS

- A. The University Representative will be utilizing the "Last Planner System" to develop and implement a phased schedule that supplements and supports the Master Schedule included within the bid documents.
 - 1. This will require time commitment from officers and supervisors of Contractor and all Subcontractors.
 - 2. Contractor will be required to provide their input and commitment to the final schedule.
 - 3. There will be a workshop held prior to the start of construction where the process will be explained in detail and the Master Project Schedule reviewed.

Periodically “pull planning” sessions will be held to refine and expand on the detail in the Master Project Schedule. These sessions will require the contractor’s superintendents and foreman to brainstorm and create detailed activities and resource requirements that support the Master Schedule.

B. Attending shall be:

1. University’s Representative.
2. University’s Consultants (optional).
3. University’s Design Professional and Design Professional’s Consultants as appropriate (optional)
4. Contractor superintendent(s) whom will be managing the project from on site.
5. Subcontractors, as appropriate or as requested by the University’s Representative.
6. Others as appropriate or as requested by the University’s Representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 31 19

**SECTION 01 31 42
CONTRACTOR SCHEDULES**

PART 1 - GENERAL

1. CONTRACTOR SCHEDULE

The Contractor is to utilize the "Last Planner System" to develop and implement a phased schedule that supplements and supports the Preliminary Master Project Schedule as defined in this section. This will require time commitment from officers and supervisors of the Contractor and all Subcontractors. The Contractor and all Subcontractors will be required to provide their input and commitment to the final schedule.

A. Pull Planning Sessions

1. There will be a workshop held prior to the start of construction where the process will be explained in detail and the Contractor's Preliminary Master Project Schedule reviewed.
2. Periodically "pull planning" sessions will be held to refine and expand on the detail in the Preliminary Master Project Schedule.
3. These sessions will require the Contractor and Subcontractor's superintendents and foreman to brainstorm and create detailed activities and resource requirements that support the Preliminary Master Project Schedule.
4. After the Contractor and all Subcontractors agree to each other's input, all parties will commit to this updated schedule.

B. Submit

1. Six week look-ahead schedules will be reviewed and updated each week and will be the basis of a Weekly Work Plan (WWP).
2. The Contractor will be required to submit their WWP on a weekly basis prior to that week.

C. Form

1. The WWP will consist of a production plan in which quantity goals as well as weekly manpower requirements established consistent with meeting the overall project schedule.
2. Prepare the WWP in sufficient detail to demonstrate preliminary planning for the Work and to represent a practical plan to complete the Work within the Contract Time and in accordance with the Preliminary Master Project Schedule.

D. Activities

1. The WWP will consist of a production plan in which quantity goals as well as weekly manpower requirements established consistent with meeting the overall project schedule.
2. Identify all holidays, including University holidays, and non-working days on the WWP.

3. During the Pull Planning Sessions the Contractor and each Subcontractor will identify all Work activities in correct sequence for the completion of the Work. Work activities will include the following:
 - a. Major Contractor-furnished equipment, materials, and building elements, and scheduled activities requiring submittals or University's prior approval.
 - b. System test dates.
 - c. Scheduled overtime Work if required by Contract Documents.
 - d. Dates designated for working spaces, storage areas, access, and other facilities to be provided by University.
 - e. Dates orders and decisions from University on designated items are due.
 - f. Dates for delivery of University-furnished equipment.
 - g. Dates for University-furnished utilities.
 - h. Connection and relocation of existing utilities.
 - i. Connection to or penetrating existing structures.
 - j. Scheduled inspections as required by Codes, or as otherwise specified.
4. During the Pull Planning Sessions the Contractor and each Subcontractor will identify all Work activities that constitute the critical path.
 - a. 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 specified in this Section or the scheduled completion of the Work, or both. All other Work activities are defined as non-critical Work activities and are considered to have float.

1.2 PRELIMINARY MASTER PROJECT SCHEDULE

- A. The Preliminary Master Project Schedule shall be utilized for monitoring progress of the Work and represent a practical plan to complete the Work within the Contract Time.
- B. The Preliminary Master Project Schedule will identify the following milestone events:
 1. Refer to the Preliminary Master Project Schedule shown in the Bidding Documents for milestone activities listed in Section 01 31 45 Contractor Schedules.
- C. The Preliminary Master Project Schedule will identify all holidays and non- working days.
- D. Updating.
 1. The Preliminary Master Project Schedule and WWP will be monitored and updated each week during the construction phase by the whole project team.
 2. Monitoring and evaluation will cover not only future activities; but completed activities will be evaluated from a "lesson learned" perspective in order to improve on future planning activities.
 3. Project team members will be held accountable for meeting these goals.
 4. No Applications For Payment will be processed nor shall any progress payments become due until updated information is accepted by University's Representative.

1.3 TIME CONTROL

- A. Set up control procedures so that approved schedules are adhered to. Contractor's responsibility is to properly notify University's Representative of anticipated and actual time delays (refer to General Conditions).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 31 42

**SECTION 01 31 45
CONTRACT SCHEDULES**

PART 1 - GENERAL

1.1 PRELIMINARY CONTRACT SCHEDULE

- A. Within the time stated in the Notice of Selection as Apparent Lowest Responsible Bidder, Contractor shall submit a preliminary work plan or schedule of proposed operations to the University's Representative for approval. This schedule shall acknowledge the full contract duration as well as significant known contract constraints. In preparation of the plan or schedule, the Contractor shall make due allowance for and include the following:
 - 1. Preparation of equipment and material submittals for review.
 - 2. Procurement schedule.
 - 3. Construction and installation schedule.
 - 4. Major milestones.
- B. Form
 - 1. Prepare the Preliminary Contract Schedule in sufficient detail to demonstrate preliminary planning for the Work and to represent a practical plan to complete the Work within the Contract Time.

1.2 PROJECT OR CONTRACT SCHEDULE

- 1. Within 30 working days of receipt of the Notice to Proceed, the Contractor shall submit a detailed project schedule. This Detailed Project Schedule shall incorporate the first 90 calendar days of contract Work as shown in the accepted Preliminary Contract Schedule.
- 2. Form:
 - a. The Detailed Contract Schedule shall be CPM (Critical Path Method), using PDM (Precedence Diagram Method) method of scheduling, with time scaled diagrams (plots) and tabular charts.
 - b. The Detailed Contract CPM Schedule when approved by the University, shall serve as the contract schedule for the project.
 - c. The Detailed Contract CPM Schedule duration shall conform to the full contract duration; and may include one or more float activities, to show full accounting of the Contract Time.
 - d. Prepare the Detailed Contract Schedule in sufficient detail to demonstrate serious planning for the Work and to represent a practical plan to complete the Work within the Contract Time.
 - e. Identify all holidays, UC Merced finals weeks and non-working days.
 - f. Critical Work activities are defined as Work activities that, if delayed or extended, will delay the scheduled completion of 1 or more of the milestones specified in this Section or the scheduled completion of the Work, or both. All other Work activities are defined as non-critical Work activities and are considered to have float.

- g. Float is defined as the time that a non-critical Work activity can be delayed or extended without delaying the scheduled completion of milestones specified in this Section or the scheduled completion of the Work, or both. Neither the General Contractor nor the University shall have an exclusive right to the use of float. The party using float shall document the effect on the updated Contract Schedule.

B. Content:

1. The Contract Schedule shall identify all Work activities in correct sequence for the completion of the Work. Work activities shall include the following:
 - a. Major Contractor-furnished equipment, materials, and building elements, and scheduled activities requiring submittals or University's Representative's prior approval.
 - 1) Show dates for the submission, review, and approval of each such 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 the University.
 - 2) A minimum of 14 days shall be allotted for University's Representative to review each submittal.
2. Date mobilization complete.
3. Scheduled overtime Work if required by Contract Documents.
4. Dates Contractor requests designated workspaces, storage area, access, and other facilities to be provided by the University.
5. Dates Contractor requests orders and decisions from the University on designated items.
6. Scheduled inspections as required by Codes, or as otherwise specified.
7. Milestone activities showing the point of substantial completion and final completion for each stage of the work, if designated in the Contract Documents, shall be included in The Preliminary Contract Schedule, Contract Schedule, and updates.

C. Presentation

1. Network Logic Diagrams
 - a. The Contract Schedule shall include all construction and demolition activities, procurement of equipment components and major off-site fabricated items, through the entire construction phase, including pre-commissioning and job close out. Completion or "Punch List" work shall be included in the Contract Time.
 - b. The Contract Schedule shall include a complete sequence of construction, in adequate detail for the planning and coordination of the Work. Unless approved by the University's Representative, there shall be no activities shown with durations in excess of 10 working days.
 - c. The Contract Schedule shall be depicted in the form of precedence diagramming method (PDM) and shall be segregated or divided into bands of activities to reflect the General Contractor's scheduling areas and/or phasing of all construction and procurement activities.

- d. The PDM Diagram may be divided into a number of separate pages with suitable notation relating to the interface points from one page to the other. Individual pages shall not exceed 30 by 42 inches.
 - e. Each activity shall be drawn so that the early start and early finish dates (or actual dates) are clearly indicated. The schedule plot also shall show the dates in tabular form.
 - f. Each activity shall reflect at least the following information:
 - 1) Description of the work.
 - 2) Activity duration (in work days).
 - 3) Activity number.
 - 4) Activity relationship and float.
 - g. All activities shall be shown, distinguishing critical
 - h. Critical path activities, non-critical activities and milestone activities.
 - i. For large schedules, a summary page shall be provided indicating the major milestones. The summary page shall include a legend that clearly identifies all symbols used within the CPM PDM Diagram. The summary page shall include an index listing all sheets within each sub-network.
 - j. Graphic schedules shall be accompanied by electronic data files of the network, showing all activities, durations, dependencies and constraints. The files shall be provided on 3.5 inch disk, Zip 100 disk, or CD-ROM, MS Windows format.
2. Tabular Computer Reports
- a. Accompanying the Construction Schedule, the Contractor shall submit various computer generated tabular reports as further described within this Section.
 - b. As requested by the University's Representative, the Contractor will be required to submit additional Schedule and Cost Reports.
- D. Computer System and Computer Generated Tabular Reports:
- 1. The computer system selected shall be based on PRIMAVERA/PRIMAVISION®, or equal.
 - 2. The computer software employed by the University's Representative will be capable of:
 - a. Numeric or Alpha/Numeric activity numbering.
 - b. Activity codings (to facilitate selecting groups or groupings of activities), with at least a 6-position alpha/numeric code.
 - c. Activity description field of at least 48 characters.
 - d. Reporting capabilities that allow sorting of a group or groupings of activities to generate various computer tabular reports and, establishing various planning schedules, as well as bar graphs.
 - e. Identifying any user assigned constraint; e.g., start not earlier than on the printout, adjacent to the activity.
 - f. Activity coding to allow graphic presentation in Gantt or PERT chart format.
 - 3. Computer generated tabular reports:
 - a. Construction Schedule tabular reports shall include the activity number, activity description, duration, remaining duration, percent complete, early start date, early finish date, late start date, late finish date, total float, precedence relationships,

lead/lag values and shall correlate work days to schedule dates. If the activity is completed or in progress, it shall have actual start or actual finish dates in lieu of the planned dates. The following sorts are required:

- 1) A Schedule of all activities, sorted by activity number, with the CPM Logic.
 - 2) A Schedule of all activities, sorted by early start date without the CPM Logic.
 - 3) A Schedule of all activities, sorted by total float without the CPM Logic.
 - 4) When requested, a Schedule of all activities showing successors, predecessors and constraints.
- b. Computer generated bar graphs of all activities. The following sorts are required:
- 1) Sorted by early start only.
 - 2) Sorted by trade and/or responsibility, by early start.
- c. Computer generated milestone schedule.

E. Submission

1. Upon receipt, the University's Representative shall review the, Detailed Contract Schedule; the University's Representative and the Contractor shall meet to jointly review the Schedule.
2. If the Schedule is found to be acceptable, the schedule will then be approved by the University's Representative as the Baseline Construction Schedule (Contract Schedule).
3. If the Contractor or the University's Representative determines the Contract Schedule to be in need of revision, within 10 working days thereafter, the Contractor shall revise and resubmit the Schedule to the University's Representative for approval, and, upon acceptance thereof, the Schedule shall be approved as the Baseline Construction Schedule (Contract Schedule).

F. Distribution:

1. University's Representative, 3 copies.
2. Contractor's Superintendent.

G. Updating:

1. Contractor shall update the Contract Schedule reflecting progress as of the end of the month and shall submit to the University's Representative for approval by no later than the tenth day of the following month. The updates shall be made as follows:
 - a. The schedule update shall consist of updated CPM Schedule reports similar to the Baseline Construction Schedule. The CPM Schedule reports shall report progress based upon percent complete of actual time and remaining duration. If the General Contractor is behind schedule, or requests an extension to the Contract time, the Contract Schedule must be updated and submitted for review in support of the request. Contract Schedules must be updated any time that delays or a change in scheduled work occurs.
 - b. The updated Contract Schedule shall reflect an up-to-date status of the contract work as completed, and materials furnished and in permanent place that qualify for payment.

- c. The updated Contract Schedule shall reflect the true effect of all processed change orders for the progress month. Subject to the provisions stated in the General Conditions, the General Contractor will be granted an extension to the contract time for the cumulative effect any approved change orders have had on the critical path; refer to General Conditions for the prerequisites for entitlement to a time extension.
- d. The updated Contract Schedule shall include all delays for the progress month. Subject to the provisions stated in the General Conditions, the Contractor will be granted an extension to the contract time for the cumulative effect any excusable delay(s) had on the critical path. No time extension will be granted for a claimed delay, unless the General Contractor can demonstrate to the satisfaction of the University's Representative the claimed delay affected the controlling operation or operations of the project. To receive an extension to the contract time, the following conditions must be met:
 - 1) Written notice has been provided, within 7 days of the delay.
 - 2) The written notice meets the notice requirements as outlined in the General Conditions.
 - 3) The Contractor has met the conditions of the General Conditions, all of which are prerequisites for entitlement of an extension of the contract time. The Contractor may submit, with the written notification or with the updated Construction Schedule, a CPM sub-net sketch that delineates the activities that were affected by the delay and the effect the delay had on the critical path. No time extension will be granted if the Contractor has not met the requirements of the General Conditions, or if the Contractor has not satisfactorily demonstrated that the claimed delay affected the critical path. Accordingly, all delays not incorporated into the updated Construction Schedule shall be deemed denied by the University.
2. At the updating, in addition to the above, the Contractor shall provide short interval schedule reports, which include:
 - a. A bar graph spanning 1 month prior to the datum line to 2 months beyond the datum line.
 - b. A " Four-Week Look Ahead" or predicated status report, covering the work within the next 4 week period, with activities sorted by early start.
3. The Contractor shall provide an Accompanying Narrative Report as needed to explain changes to the schedule, changes to the critical path and shall include a list of critical activities that require action from the University's Representative. The Accompanying Narrative Report shall include a listing of all delays that affected the critical path and shall clearly explain the impact the claimed delay(s) had on the critical path and shall include an account audit of days lost/gained.
4. Other conditions under which additional schedule updating will be required are as follows:
 - a. When delay in completion of any work items or sequence of work items result in an indicated extension of the project completion.
 - b. When delays in submittals or deliveries or work stoppages known to the General Contractor are encountered that make re-planning or rescheduling of the work necessary.

- c. When the schedule does not represent the actual prosecution and progress of the work.
- 5. Subject to all other requirements of the Contract Documents, nothing in these requirements shall be deemed to be a usurpation of the Contractor's authority and responsibility to plan and schedule the Work.
- 6. Distribute copies as required for initial distribution and monthly distribution.

1.3 RECOVERY PLAN

- A. If Contractor is behind schedule by more than ten (10) calendar days for any stage of work, based on the updated Contract Schedule after incorporating all approved time extensions, Contractor shall submit to The University's Representative within five (5) working days of notification of such delay, a "Recovery Plan." The Recovery Plan shall be based on proposed revisions to Contract Schedule for the next sixty (60) calendar day period and shall show how Contractor intends to bring the work back on schedule. The Recovery Plan shall also include a written description of the measures that Contractor intends to take without additional cost to The University to regain schedule compliance. The Recovery Plan activities shall be identified according to their relationship to activities on the accepted schedule.
- B. Should Contractor fail to submit and execute such Recovery Plan, The University shall have the option to require Contractor to employ any or all measures that The University deems fit to regain schedule compliance without additional cost to The University.
- C. The Recovery Plan submitted by Contractor, upon acceptance by The University's Representative, shall be incorporated into the Contract Schedule during the next update.
- D. Contractor will be required to submit a Recovery Plan for each update that indicates that the work progress is more than ten (10) calendar days behind schedule.
- E. Should Contractor dispute the determination of The University's Representative regarding the status on Contract delay, such dispute shall not relieve the Contractor of the responsibility to comply with the requirements of this Section and other related Sections until the dispute is resolved per Article 4 of the General Conditions.

1.4 TIME CONTROL

- A. Set up control procedures so that approved schedules are adhered to. Contractor's responsibility is to properly notify University's Representative of anticipated and actual time delays (refer to General Conditions).
- B. Time extension requests shall be submitted in accordance with the provisions of General Conditions.
- C. The General Contractor's time extension request shall be reviewed and evaluated by the University's Representative. A request for the extension shall be deemed denied if not responded to by University's Representative within 21 days.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 31 45

SECTION 01 33 23
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Shop Drawings, Product Data, and Samples shall be submitted to the University's Representative only in connection with proposed substitutions or when specifically required by the Specifications. Contractor will, however, be required to certify in writing that materials to be provided will be as specified by individual Specification Sections. The 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 01 25 00 Product Options and Substitutions. Contractor shall be responsible for obtaining copies of Shop Drawings, Product Data, and Samples as it may require for its own use.

1.2 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 as well as all other drawings and descriptive data pertaining to materials, equipment, piping, duct, conduit systems, and methods of construction as 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 relationship to adjoining Work, and amplify design details of mechanical and electrical equipment in proper relationship to physical spaces in the structure.

B. Manufacturer's Instructions

- 1. 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, General Contractor shall procure and distribute the necessary copies of such instructions to the University's Representative and the General Contractor shall furnish, install, or perform the Work in strict accordance therewith.

C. Submittal Schedule

- 1. The minimum time required by University's Representative and University's Design Professional to review and process Shop Drawings, Product Data and Samples shall be 18 days after receipt.
- 2. The Contractor shall submit a schedule for submission of Shop Drawings, Product Data, and Samples (the "Submittal Schedule"). The schedule shall include the Contractor's time to process the submittal(s), and the time required

for review by the University's Representative and University's Design Professional. The schedule shall be agreed upon by the University's Representative, the University's Design Professional, and the Contractor in order that submittals will be available when needed by the construction process and so that each party can plan its workload in an orderly manner. All required submittals shall be initially submitted no later than 2 months after the Notice to Proceed.

3. Contractor shall prepare the Submittal Schedule in the form contained in the Submittal Schedule (Exhibit 6) and coordinate it with the Contract Schedule. No submittals will be processed prior to University's Representative and University's Design Professional receiving and approving the Submittal Schedule, unless an exception is made by the University's Representative.
4. In preparing the Submittal Schedule, the Contractor must first determine from the Contract Schedule the date the particular item is needed for the Work. Working backwards, the Contractor will add the required number of days for shipment, time for fabrication, and similar items to determine the date of the first submittal. Contractor shall be responsible for the impact to the schedule resulting from submittals that do not conform to contract requirements. Contractor shall make reasonable allowances in the Submittal Schedule for the re-submittal of items that do not conform to contract requirements.
5. The Submittal Schedule shall be adjusted to meet the needs of the construction process and the Contract Schedule. Submit 2 copies of the Submittal Schedule after it is completed and each time it is updated by the Contractor.

1.3 SHOP DRAWINGS

- A. Present information required on Shop Drawings in a clear and thorough manner. Identify details by reference to drawing and detail, schedule and/or room numbers shown and specified.
- B. The Contractor shall prepare Shop Drawings that comply with the Requirements of Section 01 78 39 Project As-Built Documents.

1.4 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. Manufacturer's standard schematic drawings and diagrams
 1. Modify the standard schematic drawings and other diagrams to delete information that is not applicable to the Work.
 2. Supplement standard information to provide information specifically applicable to the Work.
 3. Clearly indicate manufacturer's model or part number intended for Project.

C. Material Safety Data Sheets

1. Material Safety Data Sheets (MSDS) shall be submitted for all hazardous substances so defined by the State of California. MSDS shall also be provided for all substances furnished under this contract that are not available to the general public from retail outlets; e.g., paints, coatings, lacquers, varnishes, sealers, removers, thinners, solvents, adhesives, cleaners, acids, putty, fillers, disinfectants, fungicides, pesticides, gases, oils, lubricants, treatments, liquid-applied flooring, etc.

1.5 SAMPLES

A. 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 or as specified by the University's Representative.
3. Or as specified.

B. Field Samples and mock-ups

1. Erect at the Project site, at a location as directed by the University's Representative;
2. Size: As specified;
3. Fabricate each Sample and mock-up to be complete and fully finished;
4. Remove mock-ups at conclusion of the Work;
5. Or as specified.

1.6 LEED™ SUBMITTAL INFORMATION

A. All information noted in Section 01 81 13 LEED® Requirements shall be noted on Exhibit 49, LEED NC v3.0 Product Data Submittal Data Form of every submittal including , but not limited to:

1. Distance in miles from final assembly location to project site;
2. All recycled content information;
3. All FSC certified wood information;
4. All electric, natural gas and water efficiency information;
5. VOC and other LEED® related issues.

B. Any submittals not containing this information on the cover will be rejected.

1.7 CONTRACTOR'S REVIEW OF SUBMITTALS

- A. Review, edit 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. Contractor's stamp and signature shall indicate that the submittal has been reviewed by the Contractor for conformance with the Contract requirements. Submittals that do not comply with this paragraph shall not be reviewed.

- B. Determine and verify
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with Contract Documents.
- C. Coordinate each submittal with requirements of the Work and of the Contract Documents.
- D. Notify the University's Representative and University's Design Professional in writing, at time of submission, of any changes in the submittals from requirements of the Contract Documents.
- E. Do not proceed with fabrication or Work that requires submittal review approval.

1.8 SUBMITTAL REQUIREMENTS

- A. The Contractor shall:
 - 1. Submit items in a group or in a sequence which provide the University's Representative with sufficient information to review items of Work which require coordination with each other. Submissions that do not provide sufficient information to review items of Work requiring coordination with each other shall be returned to the Contractor for re-submittal.
 - 2. Submit submittals promptly in timely manner to avoid delay in the Work or in the Work of any Separate Contractor.
 - 3. Submit a completed Exhibit 23 Material Submittal Approval Form with every submittal.
 - 4. Submit new samples as required for initial submittal.
- B. Number of Submittals Required
 - 1. Shop Drawings: Submit blue line reproductions and an electronic file of shop drawings to the University's Representative. The University's Representative shall return 1 blue line reproduction or an electronic copy with review comments to the Contractor. Verify quantity required for each shop drawing prior to submission.
 - 2. Project Data and Non-Reproducible Submittals: Submit copies and an electronic file to the University's Representative. The University's Design Professional shall return 1 copy with review comments to the Contractor. Verify quantity required for each shop drawing prior to submission.
 - 3. Samples and Non-Reproducible Submittals: Submit number as specified in individual Specification Section(s) to University's Representative.
 - 4. University may require submittals to be submitted electronically in the format of AUTOCAD® (latest version available at date of Bid). Files must be ORIGINAL.DWG format. Electronic media must be CD-ROM. One set of original plots must be provided with the electronic media.
 - a. Drawings are to use a specified title block, orientation and north arrow provided by the University.
 - b. All actual Drawings are to be done on Model space and plot set up/title block are on Paper space.

- c. Shop Drawing size should be 30"x42" unless is requested differently by the University's Representative.
- d. All Cross references within the same AUTOCAD® Drawing must be bound.

C. Submittals shall contain:

- 1. A unique number. Submittal Numbering shall be by specification number with incremental numerical suffix as necessary for each resubmission. For example, the first submittal of a specification section will be 'XX XX XX-001'. The second submittal will be 'XX XX XX-001-2'.
- 2. Actual date of submission, date of submission as shown on Submittal Schedule, date response due, and dates of any previous submissions.
- 3. Project name and number.
- 4. Contract identification.
- 5. The names of:
 - a. Contractor.
 - b. Subcontractor.
 - c. Supplier.
 - d. Manufacturer.
 - e. Bid Package Number if applicable.
- 6. Identification of the product with the Specification Section number.
- 7. Field dimensions clearly identified as such.
- 8. Relation to adjacent or critical features of the Work or materials including interaction with work of other trades.
- 9. Reference standards such as American Society for Testing and Materials (ASTM) or Federal Specification (FS) numbers.
- 10. Identification of changes from requirements of the Contract Documents.
- 11. Identification of revisions on re-submittals. Note any departures from the Contract Documents or changes in previously reviewed submittals that were not commented upon by the University's Representative.
- 12. An 8 by 3 inch blank space for review stamps.
- 13. Contractor's stamp, initialed or signed, certifying to the review of the submittal; verification of materials field measurements and conditions; and compliance of the information within the submittal with requirements of the Work and of the Contract Documents.
- 14. Contractor shall submit submittal(s) with transmittal provided by the University's Representative.

D. Resubmission Requirements

- 1. Shop Drawings and Product Data
 - a. Note any departures from the Contract Documents or changes in previously reviewed submittals that were not commented upon by the University's Representative.
 - b. University's Representative and the University's Design Professional will review a total of 2 submittals for the same item at no cost to the Contractor. The cost for the review of more than 2 submittals of the same item shall be deducted from the Contract Sum.
- 2. Samples: Submit samples as required for review/approval.

E. Distribution

1. Reproduce and distribute copies of Shop Drawings and Product Data that carry the University's Representative's review stamp, to the following locations:
 - a. Contractor's Project site file.
 - b. Record documents file maintained by the Contractor.
 - c. Separate General Contractors.
 - d. Subcontractors.
 - e. Supplier, manufacturer or fabricator.
 2. Distribute Samples that carry the University's Representative's review stamp as directed.
 3. Provide electronic copies of Shop Drawings and Product Data that have the final approved review stamp to the University's Representative for file.
- F. University's Representative and the University's Design Professional will review Contractor's submittals, such as Shop Drawings, Product Data and Samples, for the limited purpose of checking 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.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 33 23

**SECTION 01 35 00
SPECIAL REQUIREMENTS**

PART 1 - GENERAL

1.1 DEFINITION OF PROJECT SITE

- A. Contractor's use of the Project site for the Work and storage is restricted to the areas designated on the Drawings.
- B. The Project site is located in Merced County, 5200 N. Lake Rd, Merced, CA 95343.

1.2 WORK HOURS

- A. No Work shall be done outside of standard Monday through Friday 7:00 A.M. to 5:00 P.M. working hours, on holidays or weekends unless prior written approval has been obtained from the University's Representative.

1.3 SITE INGRESS AND EGRESS

- A. Contractor shall construct and maintain temporary access roads and laydown areas as shown on in the plans. All temporary access roads shall comply with all applicable laws, regulations & permit requirements.

1.4 SITE RESTRICTIONS

- A. OUT OF BOUNDS AREAS
 - a. Areas designated as Environmentally Sensitive by Designated Biologist.
 - b. Any area not explicitly noted as being within the Project Site.

1.5 ROADS

- A. Existing roads and existing or planned construction roads shall be used for construction access within the limits defined herein.
- B. Contractor shall take all necessary precaution to insure the safety of Visitors at all times.
- C. Contractor must obtain prior written approval from Madera County to block streets or parking areas at any time.
- D. The Contractor shall clear all roads, parking areas and sidewalks affected by the Contractor's operations. This will include the immediate removal of dust, dirt, or any other debris or detritus so that roads and sidewalks are maintained in a safe and usable condition.

1.6 PARKING

- A. The Contractor parking shall be limited to the area identified as Equipment Yard in the Contract Documents.

1.7 TRAFFIC CONTROL

- A. The Contractor shall adopt all practical means to minimize interference to traffic. Access to other facilities under construction shall be maintained at all times. The Contractor shall provide a schedule of any activity that will impact traffic, or any planned closing of the streets, for approval by the University's Representative and shall give a minimum of 14 working days notice before closing any street or access. Contractor is responsible for obtaining approval from Madera County before closing any street or access.
- B. Contractor shall furnish at Contractor's expense all barricades, lights, and other devices and means necessary to control traffic and shall maintain these devices at all times to protect the public and/or Work.
- C. It is the responsibility of the Contractor performing Work on or adjacent to a highway to install and maintain such devices as are necessary to provide safe passage for the traveling public through the Work, as well as for the safeguard of workers. Before Work begins, traffic control plans for handling traffic through a construction or maintenance Project shall be submitted to and approved by the University's Representative and public agency or authority having jurisdiction over the highway, in accordance with Chapter 5 of the CalTrans Traffic Manual.
- D. The Contractor shall comply with the provisions of 01 35 40 Environmental Mitigation and the provisions of 01 11 00.10 Natural Resource Avoidance and Minimization Measures.
- E. The Contractor shall ensure that all of the General Contractor's activities that affect traffic control, road use, materials delivery, equipment delivery, rights of way and preservation of 3rd party access rights are coordinated with those of all Separate Contractors.

1.8 SURROUNDING SITE CONDITION SURVEY

- A. Prior to commencing the Work, Contractor, Designated Biologist, and University's Representative shall tour the Project site together to examine and record damage to existing adjacent buildings, campus streets and city streets, bicycle paths, sidewalks, and all other 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. Any cracks, sags, or damage to the adjacent buildings and improvements not noted in the original survey, but subsequently discovered, shall be reported to the University's Representative.

1.9 INTERRUPTION OF BUILDING SERVICES – NOT USED

1.10 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 that are known to the University.

- B. Contractor shall locate all known existing installations before proceeding with construction operations that may cause damage to such installations. Existing installations shall be kept in service where possible and damage to them shall be repaired at no additional cost to the University.
- C. Existing underground structures and utilities shall be kept in service unless prior approval to interrupt or shutdown service is obtained from University's Representative. If damaged, they shall be repaired by the Contractor with no adjustment of Contract Sum or Contract Time.
- D. The Contractor shall coordinate all Work with the operations of separate Contractors as needed. This shall include, but not be limited to, the responsibility of the Contractor to coordinate with University's separate Site Infrastructure Phase 4 Contractor installing underground utilities, Ansel Adams and Ranchers Road street improvements, sidewalks and streetlights. Such coordination should take place prior to any excavation or trenching operations by the Contractor.
- E. If any other structures or utilities are encountered, the Contractor shall request University's Representative to provide direction on how to proceed with the Work.
- F. If any structure or utility is damaged by the Contractor, the Contractor shall take appropriate action to ensure the safety of persons and property.
- G. No Work is to be performed on energized electrical equipment unless scheduled with the University's Representative. The University reserves the right to specify specific conditions for all Work involving energized high-voltage electrical equipment.
- H. General Contractor shall uncover, prior to any earthwork for new construction, all existing piping where crossings, interferences or connections are shown on the Drawings, from 1 foot below proposed construction limit to the existing ground surface. Any variation in the actual elevations and the indicated elevations shall be brought to the University's Representative's attention. If the Contractor does not expose all existing utilities, General Contractor shall not be entitled to additional compensation for Work necessary to avoid interferences.
- I. If interferences occur at locations other than the general locations shown on the Drawings, and such utilities are damaged before their locations have been established, or create an interference, the Contractor shall notify the University's Representative and a method for repairing the damage or correcting the interference shall be supplied by the University's Representative. Payment for additional Work due to interferences not shown on the Drawings shall be in accordance with the General Conditions.
- J. Care shall be exercised to prevent damage to adjacent facilities including walks, streets, curbs, and gutters; where equipment will pass over these obstructions suitable planking shall be placed. Damaged facilities, due to the Contractor operations, shall be removed and replaced at the Contractor's expense.

1.11 PROTECTION OF PERSONNEL

- A. Contractor shall take proper precautions to ensure the safety of all persons at all times during the construction period.

1.12 PROJECT SITE SECURITY

- A. Contractor shall be responsible for ensuring all personnel comply with Project identity sticker requirements established by the University's Representative. Project identity stickers to be provided by the University.
- B. All persons working on the Project site shall receive a site safety briefing and Natural Resource Awareness Training from the University before being issued a Project identity sticker and prior to being allowed to start work.
- C. Keys required for access to the Project, if any, will be issued by the University's Representative to the General Contractor only. It will be General Contractor's responsibility to open areas for Subcontractors. Certain types of Projects may require more than one set of keys. Additional keys will be issued to General Contractor, if requested. General Contractor may not duplicate issued keys.
 - 1. At completion of Project, all keys shall be returned to University's Representative. Failure to return keys shall obligate General Contractor for all costs incurred due to necessary rekeying.

1.13 CONSTRUCTION STAGING & MULTIPLE CONSTRUCTION CONTRACTS

- A. The following describes the scheduling of the Work and the coordination required for the Work done by Separate Contractors:
 - 1. The University reserves the right to let other construction contracts.
 - 2. The following projects may be in progress at times during this project:
 - a. University of California Merced Classroom & Office Building
 - b. University of California Merced Central Plant & Telecom Upgrade
 - c. Artificial Kit Fox Dens
 - 3. Disagreements between the Contractor and other Separate Contractors about concurrent use of Work areas or access to the Project site which are not resolved by the participants shall be referred to the University's Representative and the Contractor agrees to abide by the University's Representative's determination as to concurrent use or priority of access and to perform its Work in compliance with the University's Representative's resolution at no additional cost to the University.
- B. All material and equipment for construction operations shall be brought in and the Work so conducted as to avoid any interference with existing University facilities or their normal operations, and with concurrent construction Work by other Separate Contractors.

1.14 FINAL EXAM SCHEDULE – NOT USED

1.15 WORK SITE DECORUM

- A. Extreme care to limit noise and odors shall be taken at all times. Loud or unnecessary conversation shall be avoided. The playing of radios tapes, or compact discs shall be strictly prohibited.
- B. Contractor shall control the conduct of its employees and those of its subcontractors and suppliers so as to prevent interaction initiated by said employees with University of California Merced students, staff, or other individuals (except those associated with the Project), on or adjacent to the Project site. Without limitation, unwanted interaction by these employees includes whistling at, motioning toward, or initiating conversations with passersby. In the event that any employee initiates such unwanted interaction, or utilizes profanity, Contractor shall, either upon request of University's Representative or on its own initiative, replace said employee with another of equivalent technical skill, at no additional cost to the University.
- C. Smoking is prohibited in and within 20 feet of any entrance, window, or air intake of all University buildings and in enclosed areas. Smoking will not be allowed in the construction area. Smoking will be allowed in a designated area within the construction storage yard only.
- D. Firearms are prohibited on Project site.
- E. Alcoholic beverages are prohibited on Project Site.
- F. Pets are prohibited on the Project site.

1.16 PUBLICITY

- A. Contractor shall not release any information, story, photograph, plan or drawing relating to the Project to anyone, including press or other public communications medium, except as submitted and approved for release by the University's Representative.

1.17 PROJECT SIGN

- A. No signs or advertisements will be permitted on the Project site, except with express permission of University's Representative.

1.18 JOB OFFICE

- A. Space on the Project Site is limited. Trailer space must be requested and approved by the University's Representative. Storage and office trailers are to be located in the temporary laydown area as shown on the Site Logistics Plan. Space will be allocated by the University's Representative. Contractor shall provide and maintain all temporary facilities as required for completion of the Project.

1.19 SALVAGE

- A. All material and equipment removed as part of this Project is the property of the Contractor and shall be removed from the Campus and legally disposed of, unless otherwise stated in the Contractor's "Scope of Work".

1.20 CLEANUP

- A. During the progress of the Work, the Contractor shall keep the Project site in a neat and clean condition that is free of debris to the satisfaction of the University's Representative. All materials and debris accumulated in conjunction with completing this Work shall be disposed of in the jobsite trash dumpsters provided by the Contractor and disposed of off campus. Contractor shall not use University refuse containers.

1.21 UNIVERSITY FURNISHED ITEMS – NOT USED

1.22 JOB CONDITIONS

- A. Protection: Where roof edge does not terminate in a parapet wall and/or where Work is in progress overhead and materials or objects could potentially fall, the Contractor is required to construct temporary covered pedestrian walkways over each building entrance. Walkway covers shall extend out 12 feet in length for the first floor and an additional 4 feet for each additional floor of the building. Walkway covers shall extend from face of building. Contractor shall be required to place and maintain yellow safety construction flagging or ropes with signage to prevent pedestrians from coming within 25 feet of Work in progress overhead and to route pedestrians in and out of building entrances.
- B. Safety Precautions: Perform Work in such a manner as to prevent damage to existing facilities to remain or to be salvaged. Hazardous Work shall not be left standing or hanging, but shall be knocked or pulled down to avoid damage or injury to employees or the public.
- C. Crane Operation, Staging and Storage
 - 1. Operator Training and Crane Certification: Prior to starting crane operations, General Contractor shall provide copies of operator's training and crane certification to the University's Representative.
 - 2. Crane Staging Area: Contractor shall be required to coordinate with the University's Representative a minimum of 5 working days in advance of loading and removal of materials from the roof. Contractor is responsible for providing necessary staging area for crane.
 - 3. Storage: Contractor shall not be allowed on-site crane storage unless with the prior written approval of the University's Representative.

1.23 NOT USED

1.24 PROJECT SITE SUPERINTENDENT

- A. Contractor shall employ a competent Project Site Superintendent/Foreman satisfactory to the University's Representative. The Project Site Superintendent/Foreman shall be in attendance at the Project site at all times during the performance of the Work. Project Site Superintendent/Foreman shall represent the Contractor and communications given to and received from the Project Site Supervisor shall be binding on Contractor.
- B. The Contractor shall submit to the University's Representative the qualifications of the Project Site Superintendent/Foreman prior to commencement of the Work. The University's Representative shall approve the Project Site Superintendent/Foreman based on his/her experience with projects similar to type, scope, size, and complexity.
- C. The Project Site Superintendent/Foreman approved for the Project by the University's Representative, must be able to proficiently read, write and verbally communicate in English. The Project Site Superintendent/Foreman 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 while Work is in progress.
- D. Failure to maintain a Project Site Superintendent/Foreman 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 Project Site Superintendent/Foreman is on the Project site. If, by virtue of issuance of said stop Work order, General Contractor fails to complete the Contract on time, General Contractor will be assessed Liquidated Damages in accordance with the Agreement.
- E. If the Project Site Superintendent/Foreman fails to perform to the satisfaction of the University's Representative, the University's Representative may, upon 15 days written notice, require the General Contractor to remove the Project Site Superintendent/Foreman from the Project and replace the Project Site Superintendent/Foreman with a replacement acceptable to the University's Representative.
- F. If the Contractor elects a replacement of the Project Site Superintendent/Foreman, such replacement shall be discussed with the University's Representative prior to actual replacement. The same criteria employed by the University's Representative to approve the initial Project Site Superintendent/Foreman shall also apply to the University's Representative's approval of any subsequent Project Site Superintendent/Foreman.

1.25 OTHER CONTRACTOR SITE PERSONNEL

- A. In addition to the Project Site Superintendent/Foreman, the Contractor shall provide site personnel of quality and quantity sufficient to carry out all of the on-site Contractor responsibilities described in the Contract Documents. See Instructions to Bidders for other site personnel requirements that may also be required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 35 00

SECTION 01 35 40
ENVIRONMENTAL MITIGATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Related Sections

1. ~~01 81 13 LEED® Requirements~~
2. ~~01 74 19 Site Waste Management Program~~
3. 01 35 43 Hazardous Materials Procedures

B. Requirements

1. The Environmental Mitigation requirements for this Project are recorded in this Specification Section. The mitigation measures may include, but are not limited to, procedures and standards to control:
 - a. Dust Palliation
 - (1) All construction, demolition, excavation, extraction or other earthmoving activities shall comply with the San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII - Fugitive PM10 Prohibitions.
 - (2) All disturbed areas, including storage piles, shall be sprinkled with water or other dust control agents/chemical stabilizers acceptable to SJVAPCD, or shall be covered with vegetative ground cover, so as to effectively prevent dust emissions. Additional watering or acceptable dust control agents/chemicals shall be applied during dry weather or windy days until dust emissions are not visible.
 - (3) Trucks hauling dirt and debris shall be effectively wetted and/or maintain not less than six inches freeboard and/or cover the top of the load to reduce wind blown dust or spills.
 - (4) Dirt or debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to the Project site shall be cleaned daily of construction related dirt or mud. The use of dry rotary brushes and blower devices is prohibited except where preceded by sufficient wetting to limit visible dust emissions and the prior written approval of the University's Representative.
 - (5) On-site stockpiles of excavated material shall be covered or watered.
 - (6) Traffic speeds on unpaved roads shall be limited to 15 mph.
 - (7) If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more calendar days, the area must comply with conditions for a stabilized surface area as defined in Rule 8011 of SJVAPCD and General Contractor shall comply with the record keeping requirements specified in Rule 8011 of SJVAPCD.

- b. Other Air Pollutants
 - (1) When feasible, construction equipment should use alternative fuel sources such as propane, natural gas or electricity.
 - (2) Minimize idling time of machinery to a maximum of 10 minutes when construction equipment is not in use.
 - (3) Construction equipment rated greater than 100 horsepower shall have, to the extent feasible, diesel exhaust controlled by use of catalyst-based diesel particulate filters.
 - (4) Use low-emission on-site station equipment.
- c. Noise
 - (1) Construction equipment shall be properly outfitted and maintained with adequate mufflers and other appropriate noise reduction devices to minimize construction-generated noise.
 - (2) Stationary noise sources such as generators or pumps shall be located away from noise sensitive land-uses and occupied buildings.
 - (3) Prior to construction activities, Contractor shall coordinate with the County Parks and Recreation Division to reduce the likelihood that planned events at the Lake Yosemite Park are adversely affected by project construction.
 - (4) Comply with all applicable sound ordinances as required.
 - (5) Should the Contractor need to generate construction noise adjacent to occupied buildings, the Contractor shall inform the University's Representative in writing 14 calendar days prior to generating the noise.
 - (6) The Contractor shall comply with the provisions of Section 01 35 00 Special Requirements with regard to Work Hours.
- d. Odors
 - (1) Work that causes excessive odors shall be performed only after coordination with the University's Representative. Filtering of air intakes to air handling units may be needed to prevent odors and vapors from entering buildings.
 - (2) Contractor shall provide 14 working days advance written notice to the University's Representative in order for advance notices to be forwarded to building occupants. Work stoppage may occur if advance notification has not been coordinated or if odors and vapors from the work are found to generate complaints from building occupants.
- e. Light
 - (1) The Contractor shall minimize up-light and light spill by focusing light sources and using shielding.
 - (2) No light sources shall be directed across the site boundaries.

1.2 ARCHAEOLOGICAL RESOURCES

A. GENERAL

- 1. If during the course of construction, evidence of deposits of historical or archaeological interest is found, the Contractor shall cease the Work affecting the

find and immediately notify the University's Representative and shall not disturb deposits until written notice from University's Representative is given to proceed.

2. Contractor will be compensated for lost time or changes in construction to avoid the find based upon normal change order procedures if Critical Path is affected.

B. Procedures

1. If a potentially significant archaeological find is identified during construction, the University may incorporate into the proposed project design measures that will minimize or eliminate direct impacts to the deposit. These may include avoidance of the site by inclusion in landscaping or open space, placement of fill over the site, and/or project redesign. If this is not feasible, or if such measures will not ensure the avoidance of impacts, the University will ensure that an archaeological testing program is carried out to assess the significance of the find.
2. If a find is determined to be significant, and if it cannot be preserved intact through project design measures, then the University will retain an archaeologist to design and carry out a treatment plan to document the data and/or preserve such scientific samples of the data for which the site is significant as may be appropriate, given the significance of the find.
3. Any significant finds that are recovered shall be retained by University and will be donated to an appropriate cultural or historical center. Unauthorized collection of artifacts is prohibited. If human remains are encountered, Work will be halted and the Merced County Coroner will be contacted immediately by the University's Representative. If human remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission. The Commission will then notify the person it believes to be the most likely descendant. That descendant will work with the University to develop a program for reinternment of the remains and any associated artifacts.

- C. When Native American archaeological, ethnographic, or spiritual resources are found, identification and handling of those resources will be conducted jointly by a University appointed Archaeologist and Native American representatives who are approved by the local Native American community as scholars of their cultural traditions. The Archaeologist shall either be certified by the Society of Professional Archaeologist, or meet the Federal Standards appearing in 36 CFR 61. If no approved Native American representative is available, persons who represent tribal government and/or organizations in the surrounding region shall be consulted. If historic archaeological resources are found, identification and handling of those resources will be conducted by historical archaeologists or architectural historians retained by the University.

1. If a potentially significant archaeological find is identified during construction, the University may incorporate into the proposed project design measures that will minimize or eliminate direct impacts to the deposit. These may include avoidance of the site by inclusion in landscaping or open space, placement of fill over the site, and/or project redesign. If this is not feasible, or if such measures will not ensure the avoidance of impacts, the University will ensure that an

- archaeological testing program is carried out to assess the significance of the find.
2. If a find is determined to be significant, and if it cannot be preserved intact through project design measures, then the University will retain an archaeologist to design and carry out a treatment plan to document the data and/or preserve such scientific samples of the data for which the site is significant as may be appropriate, given the significance of the find.
 3. Any significant finds that are recovered shall be retained by University and will be donated to an appropriate cultural or historical center. Unauthorized collection of artifacts is prohibited. If human remains are encountered, Work will be halted and the Merced County Coroner will be contacted immediately by the University's Representative. If human remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission. The Commission will then notify the person it believes to be the most likely descendant. That descendant will work with the University to develop a program for reinternment of the remains and any associated artifacts.
 4. When Native American archaeological, ethnographic, or spiritual resources are found, identification and handling of those resources will be conducted jointly by a University appointed Archaeologist and Native American representatives who are approved by the local Native American community as scholars of their cultural traditions. The Archaeologist shall either be certified by the Society of Professional Archaeologist, or meet the Federal Standards appearing in 36 CFR 61. If no approved Native American representative is available, persons who represent tribal government and/or organizations in the surrounding region shall be consulted. If historic archaeological resources are found, identification and handling of those resources will be conducted by historical archaeologists or architectural historians retained by the University.

1.3 PALEONTOLOGICAL RESOURCES

A. General

1. If during the course of construction, evidence of deposits of paleontological interest is found, the Contractor shall cease the Work affecting the find and immediately notify the University's Representative. Do not disturb deposits until written notice from University's Representative is given to proceed.
2. Contractor will be compensated for lost time or changes in construction to avoid the find based upon normal change order procedures if Critical Path is affected.

B. Procedures

1. Prior to project construction, construction personnel shall be informed by the Contractor of the potential for encountering significant paleontological resources.
2. If a potentially significant paleontological find is discovered, the Contractor shall cease all operations in the area of the find until a University appointed paleontologist has been afforded the opportunity to assess the significance of the find and implement appropriate measures to protect or scientifically remove the find.

3. Collection of fossil resources by other than the University's consulting paleontologist is prohibited.
4. A University appointed, qualified paleontologist may be intermittently present to inspect exposures of the Merhten Formation, North Merced Gravels, and Riverbank Formation during construction operations to ensure that paleontological resources are not destroyed by project construction.

1.4 NOXIOUS OR TOXIC MATERIALS

A. The Contractor shall ensure that:

1. No noxious or toxic materials shall be used in or around occupied buildings without prior approval of the University's Representative.
2. Chemical wastes shall be stored in covered metal containers and shall be removed from the premises daily.
3. There shall be no accumulations of wastes that create hazardous conditions.
4. Adequate ventilation is provided during use of volatile or noxious substances. Such materials shall only be used after 48 hours previous notification to the University's Representative and preferably on weekends or "down" periods.
5. Chemicals, such as mineral spirits, oil, or paint thinner, are not dumped into storm or sanitary drains or on University property or on any adjoining property.
6. Vehicle maintenance or servicing shall not spill oil or fuel onto the ground and if a spill occurs, it shall be cleaned up immediately and the soil disposed of according to local, State, and/or Federal requirements.
7. Chemical storage, including fuel and oil, shall be double contained.
8. The Contractor's Project Site Superintendent shall be trained in the prevention and correction of spills.
9. Contractor shall have immediate access to spill control equipment, such as absorbent, shovels, and containers.

1.5 REMOVAL AND DISPOSAL OF EXCESS SOIL

- A. All materials and debris accumulated in conjunction with completing this Work shall be disposed of legally by the Contractor off the Project Site. Contractor shall not use University refuse containers. Clear soil spoils shall be transported and deposited at a designated location as directed by the Designated Biologist.
- B. Contractor is to coordinate with University Representative and Designated Biologist to identify the location of a temporary staging area for storage of excavated soil on the Project Site. The intent of this area is to serve as a nearby storage area for excavated soil intended by the Contractor to be used for backfill or fill later in the project. This area is to be restored to original condition after its use is no longer required.

1.6 REMOVAL AND DISPOSAL OF WASTE MATERIALS

- A. All waste materials resulting from the process of clearing and construction shall be legally disposed of by the Contractor as follows:

1. All refuse and debris, concrete and other inert materials, combustible and incombustible substances, resulting from the processes of construction, shall be removed from the Project Site. The Contractor shall not use any refuse container belonging to the University. The Contractor shall provide debris boxes for the use of the Contractor and all of their Subcontractors and dispose all debris off-site excepting chemical and hazardous waste which shall be disposed of by the Subcontractor generating the waste. Contractor shall be responsible for depositing their waste into the debris boxes provided by the Contractor on a daily basis.
 2. Chemical Waste: All chemical waste, including solvents, oils or any other material that may be harmful to plant life, shall be disposed of in accordance with local, State and/or Federal regulations. Chemical waste shall not be stored on the University's property. At completion of Work, any contaminated soil shall be removed from the Project Site and replaced with good soil by the Contractor at no additional cost to the University.
- B. The Contractor shall not burn or bury rubbish or waste materials on the Project Site.
- C. During construction, the Contractor shall maintain buildings, premises and property free from accumulations of waste materials and rubbish. The Contractor shall legally dispose of such waste, rubbish and debris at reasonable intervals off the Project Site.

1.7 CONTROL OF NONNATIVE & INVASIVE PLANT SPECIES

- A. Contractor shall ensure that seeds from invasive plant species are not transported into the Campus site by earth moving equipment. At a minimum, the Contractor shall ensure that:
1. All earth moving equipment shall be washed down (wheels, under-carriage, bucket/bed, etc.) prior to being transported to the Project site. All earth moving equipment shall be clean and free of seeds or other plant material before being brought on site.
 2. The Contractor shall notify the University's Representative and Designated Biologist of the source location of all off-site fill material a minimum of 10 calendar days prior to importing material to the Project site and appropriate steps shall be taken to minimize the potential for invasive species to colonize areas disturbed during construction due to use of such fill.
 3. Any organic material used during project construction for erosion control, or any material used for hydroseeding or revegetating disturbed areas is certified free of invasive species.

1.8 PROTECTION OF SENSITIVE AREAS OUTSIDE PROJECT SITE BOUNDARY

- A. Contractor shall operate strictly within the confines of the Project Site as described in the plans.
- B. In no instances shall construction related vehicles or Contractor's personnel travel beyond the Project site boundary except on roads.

- C. In no instance shall the Contractor allow any material, whether solid or liquid, to migrate from the Project site across, except when said material is being removed from the Project site in accordance with the Contract Documents.

1.9 NATURAL RESOURCE AWARENESS TRAINING FOR CONSTRUCTION PERSONNEL

A. Training Program

1. Prior to working on the Project site, all construction personnel shall attend a training program provided by the University Representative on Monday and Wednesday mornings at 7:30am or when agreeable with University's Representative. The training will include at minimum, a description of the species at risk and their habitat, the importance of the species and their habitat, the general measures being implemented to conserve the sensitive areas/species, and the boundaries within which the project may be accomplished.
2. The training shall be conducted in English and shall consist of a presentation and the distribution of appropriate literature. The Contractor shall ensure that all Subcontractor and Contractor supplier personnel attend a training session before they start working at the Project site.
3. The Contractor shall ensure that the following site regulations, which will be identified in the Training program, are adhered to:
 - a. All food related items shall be properly disposed of, and signs indicating that the feeding of wildlife is prohibited shall be placed at the Project site.
 - b. Vehicle traffic shall occur primarily between dawn and dusk, and shall be limited to 20 mph to reduce the potential for wildlife road mortality.
 - c. Any trench or pit shall be constructed in such a way as to provide ramps of either fill or planks to prevent kit fox and other species from becoming entrapped.
 - d. Pipes, culverts, etc. greater than four inches in diameter shall be stored in such a way as to prohibit foxes or other species from using these areas as temporary refuge. In addition, these structures shall be thoroughly inspected each morning for kit fox or other species.
 - e. No firearms shall be allowed on University Property.
 - f. No pets shall be permitted on University Property.
 - g. The use of pesticides on the Project site by the General Contractor, including but not limited to rodenticides, insecticides and herbicides, is prohibited unless prior written approval of the University's Representative is obtained.
 - h. Construction vehicles shall be limited to a maximum speed of 10 mph in the vicinity of breeding ponds of California tiger salamander during the salamander movement period. The location of the breeding ponds and dates of the movement period shall be identified by the University's Representative.

1.10 AUTHORITY OF THE UNIVERSITY'S REPRESENTATIVE TO SUSPEND WORK

- A. The University's Representative has the authority to suspend construction work when such work causes or threatens to cause harm to sensitive habitat or species.
- B. Contractor will be fully responsible for any and all damages and sanctions placed against the Project for any violations of these requirements.

1.11 SURFACE WATER CONTROL

- A. All portions of the Work shall be kept free of standing water at all times during construction of the Work herein specified. Where required, temporary drainage ditches, berms, or pumping systems shall be constructed to divert drainage water away from the Project site and the resultant water shall be carried to the nearest water course approved by the University's Representative and disposed of without erosion to the surrounding area. Care shall be taken to prevent silting of the water courses. Silt that is deposited, as a result of the Work in this Project, shall be removed and disposed of by the Contractor, at the Contractor's expense and to the satisfaction of the University's Representative. The General Contractor shall follow CALTRANS "Handbook of Practices, Storm Water Pollution Practice."

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 35 40

SECTION 01 35 43
HAZARDOUS MATERIALS PROCEDURES

PART 1 - GENERAL

1.1 CONTRACTOR'S RESPONSIBILITY

- A. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), lead, or other hazardous substances that have not been rendered harmless, Contractor shall immediately stop work in the area affected and report the condition to the 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, PCB, lead, or other hazardous substances and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos, PCB, lead, or other hazardous substances, or when such materials have been rendered harmless.
- B. Disclose any hazardous substance or condition exposed during the Work to the University's Representative for decision or remedy.
- C. In no event, shall the Contractor install materials that contain asbestos, PCB, lead or other known hazardous materials without specific prior written approval by the University's Representative.
- D. Disposal of lighting ballasts containing PCB's shall be accomplished by the University. The Contractor shall coordinate with the University's Representative regarding a date, location and time for delivery to a location on Campus to be designated.
- E. Regulated Carcinogens by California Code of Regulations (CCR) Title 8, Section 5200 et seq.
 - 1. Products containing chemicals regulated as carcinogens by California Occupational Safety and Health Act (COSHA) are not allowed for use on University projects. The COSHA regulated carcinogens are:
 - a. 2-Acetylaminofluorene, 5209
 - b. 4-Aminodiphenyl
 - c. Benzidine (and its salts)
 - d. 3,3'-Dichlorobenzidine (and its salts)
 - e. 4-Dimethylaminoazobenzene
 - f. alpha-Naphthylamine
 - g. beta-Naphthylamine
 - h. 4-Nitrobiphenyl
 - i. N-Nitrosodimethylamine
 - j. beta-Propiolactone
 - k. bis-Chloromethyl ether
 - l. Methyl chloromethyl ether
 - m. Ethyleneimine
 - n. Methylene Chloride, 5202
 - o. Methylenedianiline (MDA), 1535, 5200
 - p. Cadmium, 1532, 5207
 - q. Asbestos, 1529, 5208, 5208.1, 8358
 - r. Vinyl Chloride, 5210

- s. Coke Oven Emissions, 5211
- t. 1,2-Dibromo-3-Chloropropane (DBCP), 5212
- u. Acrylonitrile, 5213
- v. Inorganic Arsenic, 5214
- w. 4,4'-Methylenebis(2-Chloroaniline) (MBOCA), 5215
- x. Formaldehyde, 5217
- y. Benzene, 5218
- z. Ethylene Dibromide (EDB), 5219
- aa. Ethylene Oxide (EtO), 5220
- bb. 1,3 Butadiene, 5201
- 2. Case-by-case exceptions may be considered for products containing the following COSHA recognized carcinogens:
 - a. Methylene Chloride, 5202
 - b. Cadmium, 1532, 5207
 - c. Inorganic Arsenic, 5214
 - d. Formaldehyde, 5217
 - e. Benzene, 5218
- 3. Case-by-case exceptions may only be made when suitable alternative products are not available. Such exceptions are subject to approval by the University's Representative.
- 4. Exceptions require that the Contractor shall have an established carcinogen program as required by COSHA and shall submit to University's Representative, a copy of the COSHA Confirmation of Report for COSHA carcinogens.
- 5. When exceptions are granted the Contractor is responsible for providing to the University's Representative a copy of the semi-annual Confirmation of Report received from COSHA or, in lieu of that, a copy of the Contractor's semi-annual report as submitted to COSHA at periods not to exceed 6 months, or at project closeout, whichever occurs first.

1.2 ASBESTOS IN BUILDINGS NOTIFICATION

- A. California Health and Safety Code, Section 25915, Chapter 10.4, Division 20 requires UC Merced employees and contractors working for the campus to be notified of the presence of asbestos in buildings constructed prior to 1979. For information about asbestos in specific buildings, contact the University's Representative.
- B. It is important to note that the presence of asbestos does not mean you have been exposed to asbestos. Exposure strictly refers to the inhalation or ingestion of friable asbestos particles. Asbestos becomes friable through drilling, sanding or similar destructive processes usually associated with remodeling or demolition work. Intact, bonded, sealed and undisturbed asbestos does not pose a hazard.
- C. Contractors who disturb or potentially disturb friable or non-friable asbestos must comply with all Federal State and Local rules and regulations regarding hazardous materials.

1.3 LEAD BASED PAINT IN BUILDINGS

- A. The California Department of Health Services requires the certification of employees and supervisors performing lead related construction activities in residential and public buildings, as defined in Title 17, California Code of Regulations, Division 1, Chapter 8. Lead related construction work is defined in Title 17 as any construction, alteration,

painting, demolition, salvage, renovation, repair, or maintenance of any residential or public building, including preparation and cleanup, that, by using or disturbing lead containing material or soil, may result in significant exposure of adults or children to lead.

- B. It is important to note that the presence of lead does not mean you have been exposed to lead. Exposure strictly refers to the inhalation or ingestion of lead dust. Lead becomes dust through drilling, sanding or similar destructive processes usually associated with remodeling or demolition work. Intact, bonded, sealed and undisturbed lead does not pose a hazard.
- C. For information about lead in specific buildings, contact the University Representative
- D. Contractors who disturb or potentially disturb lead must comply with all Federal State and Local rules and regulations regarding hazardous materials.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 35 43

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 CODES, AGENCIES, AND REFERENCES

- 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. Americans with Disabilities Act - Title II.
 2. California Environmental Quality Act.
 3. California Health and Safety Code.
 4. National Fire Protection Association (NFPA).
 5. Federal Occupational Safety and Health Administration.
 6. Federal Clean Water Act, including but not limited to the Storm Water Pollution Prevention requirements.
 7. Federal Endangered Species Act.
 8. Federal Clean Air Act.
 9. Porter-Cologne Water Quality Act, State of California
 10. Endangered Species Act, State of California
 11. California Fish & Game Code, Section 1600, et. seq.
 12. Resource Conservation and Recovery Act (RCRA) and the California Hazardous Waste Control Law.
 13. Comprehensive Environmental Response and Cleanup Liability Act (CERCLA)
 14. California Building Code (CBC)

1.2 STANDARDS AND CODES

- A. Applicable laws, codes, rules, regulations, ordinances and standards
1. Code of Federal Regulations
 - a. Title 33, Navigation and Navigable Waters
 - b. Title 40, Protection of Environment
 - c. Title 50, Wildlife and Fisheries
 2. California Code of Regulations (CCR)
 - a. Title 8, Industrial Relations/Elevators
 - b. Title 14, Natural Resources
 - c. Title 17, Public Health
 - d. Title 19, Public Safety

- e. Title 20, Public Utilities and Energy
 - f. Title 21, Public Works
 - g. Title 22, Environmental Health
 - h. Title 23, Waters
 - i. Title 24, California Building Standards Code
 - 1) Part 2, California Building Code 2010
 - 2) Part 3, California Electric Code 2010
 - 3) Part 4, California Mechanical Code 2010
 - 4) Part 5, California Plumbing Code 2010
 - 5) Part 6, California Energy Code 2010
 - 6) Part 9, California Fire Code 2010
 - 7) Part 11 California Green Building Standards Code 2010
 - 8) Part 12, California State Reference Standards 2010
 - j. Title 27 Environmental Protection 2007
3. San Joaquin Valley Air Pollution Control District Regulation #8 2004

1.3 REFERENCES

- 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 (Exhibit 9) or Field Order (Exhibit 8), as applicable.

1.4 CONFLICTS

- A. Unless otherwise directed by the University's Representative, if a conflict exists between referenced regulatory requirements and the Contract Documents, the Contractor shall refer the matter to the University's Representative for further instruction.
- B. Nothing stated in this Section of the Specifications or other Sections of the Specifications, the other Contract Documents or the Bidding Documents or shown on the Drawings shall be construed as allowing Work that is not in strict compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinances, codes and standards.

1.5 TRENCHING AND SHORING

- A. All Work shall be in full accordance, but not necessarily limited to the following codes and regulations: Titles as listed in Section 1.2 Standards and Codes above, State of California, California Code of Regulations (CCR), California Occupational Safety and Health Administration (OSHA).
1. Pursuant to Labor Code 6707, the General Contractor shall include in the bid all costs incident to the provisions of adequate sheeting, shoring, bracing or equivalent method for the protection of life or limb that shall conform to applicable Federal and State safety orders.

2. Before beginning any excavation 5 feet or more in depth, the Contractor shall submit to the University's Representative a detailed Drawing showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation. The proposed design shall comply with the standards established by the State of California Construction Safety Orders, Title 8 and Title 24 of the California Code of Regulations (CCR). If the design varies from such shoring system standards, the Drawing 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 the Contractor. The cost of required engineering services shall be borne by the Contractor and shall be deemed to have been included in the Contract Sum for the Work as stated in the Agreement.
3. Neither the review nor approval of any Drawing showing the design of shoring, bracing, sloping, or other provisions for worker protection, shall relieve the Contractor from the obligation to comply with construction State of California Construction Safety Order and Title 24 of the California Code of Regulations (CCR) for the design and construction of such protective Work, and the Contractor shall indemnify the University and the 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. The Contractor shall defend the University, its officers, employees, Design Professional and agents and the University's Representative in any litigation or proceeding brought with respect to the failure of such protective systems.
4. All Work including any temporary construction shall be in full compliance with the latest orders of the Division of Industrial Safety of the State of California and all codes and regulations as called for hereinafter in these specifications.

1.6 REGULATORY NOTIFICATIONS

- A. Submit all required notifications to Federal, State of California, State in which disposal facility is located if not in California, regional, and local agencies with regulatory responsibilities associated with the Work activities that are included in the Contract. All notifications shall be served in writing, in the form required by the agency requiring notification, and in a timely manner so as not to negatively impact the Project schedule. Serve notifications at least 10 working days in advance (or earlier if required by agency) of activity requiring notice. The Contractor shall serve all required notifications in writing to all governmental and quasi-government agencies having notification requirements pertaining to any portion of the Work included in the Project.
- B. Contractor shall comply with the State General Construction Activity Storm water Permit National Pollutant Discharge Eliminate System (NPDES) for the campus and comply with the University's Storm Water Pollution Prevention Plan.

1.7 NOTIFICATIONS, CERTIFICATES AND UNIFORM HAZARADOUS WASTE MANIFEST

A. Permits

1. Contractor will not be required to obtain a County of Merced building permit.

B. Designated Campus Fire Marshal (DCFM)

1. Contractor shall be responsible for issuing in writing to the University's Representative the following notifications prior to starting site Work:
 - a. Hazardous Condition Notification - Hot Work (Exhibit 30): must be coordinated before starting any hot work (welding, burning, or cutting, etc.) involving use of gas or electric welding equipment. Contractor shall report to the University's Representative, at the beginning and 30 minutes prior to the end of each shift that such "hot" work takes place
 - b. Hazardous Conditions Notification-General: for the storage or use of any flammable liquid in excess of 10 gallons or in any confined area where vapors can be ignited. The General Contractor shall report to the University's Representative at the beginning and 30 minutes prior to the end of each shift that such work takes place
 - c. Hazardous Condition Notification-Special Conditions: Coordinate in advance with the University's Representative before restricting access to or blocking of any building exit or Work that will require the shutdown of building fire protection or alarm systems. The General Contractor shall report to the University's Representative at the beginning and 30 minutes prior to the end of each shift that such work takes place
 - d. At the end of the Work, the Contractor must submit Automatic Sprinkler Systems-Material and Test Certificate for Aboveground Piping and Automatic Sprinkler Systems- Material and Test Certificate for Underground Piping for approval by the University (Exhibits 20 and 21). The Automatic Sprinkler underground and aboveground will not be accepted until these certificates have been completed and submitted.
 - e. At completion of the Work, provide a fire alarm certifications NFPA 72 certificate of completion.

C. Prior to commencing clearing, excavation and trenching, Contractor shall locate all known existing installations before proceeding with construction operations that may cause damage to such installation. Existing installations shall be kept in service where possible and damage to them shall be repaired at no additional cost to the University.

D. Uniform Hazardous Waste Manifest: Contractor shall be responsible for coordination with the University's Representative for obtaining a Uniform Hazardous Waste Manifest prior to removal of asbestos containing materials, polychlorinated biphenyl (PCB), or other hazardous materials from the Project site. Manifest will be provided by the University's Representative. Only the University's Representative will be allowed to sign individual manifests on behalf of the Contractor / University.

1.8 CIVIL OR CRIMINAL PENALTIES OR FINES

A. Contractor shall be liable for the payment of any and all civil or criminal penalties or fines imposed by the U.S. Fish & Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), California Department of Fish & Game (CDFG), Central Valley Regional Water Quality Control Board (CVRWQCB) or any other applicable regulatory agency for Contractor's violations of the federal Endangered Species Act (ESA), Clean Water Act (CWA), California Endangered Species Act (CESA), Porter-Cologne Water Quality Control Act (Porter-Cologne);

any regulation promulgated to implement said statutes; the UC Merced Biological Opinion; or any applicable authorization issued by the USFWS, USACE, CDFG, CVRWQCB, or other applicable federal, state or local regulatory agency.

- B. In the event Contractor is found liable for civil actions under the abovementioned statutes, regulations, permits or authorizations, Contractor shall be responsible for the payment of any civil penalties imposed by any applicable regulatory agency. Penalties may vary according to the applicable statute, including but not limited to, penalties of up to \$50,000 per day of violation of the CWA, \$25,000 for each ESA violation, and \$15,000 per day of violation of Porter-Cologne.
- C. In the event Contractor is convicted of criminal actions under the abovementioned statutes, regulations, permits or authorizations, Contractor shall be responsible for satisfying applicable terms of imprisonment and the payment of any criminal fines imposed by the regulatory agency. Fines may vary according to the applicable statute, including but not limited to, fines of \$250,000 per day of violation of the CWA, \$50,000 for each ESA violation, and \$15,000 per day of violation of Porter-Cologne.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01410

SECTION 01 42 13
ABBREVIATIONS, SYMBOLS & DEFINITIONS

PART 1 - GENERAL

1.1 ABBREVIATIONS

A. The following abbreviations of organizations may be used in the Contract Documents:

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers' Association
AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials
ABAG	Association of Bay Area Governments
ABPA	Acoustical and Board Products Association
ABPTA	American Bearing Power Transmission Association
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
ADA	Americans with Disabilities Act of 1990
ADAAG	American with Disabilities Act Accessibility Guidelines
ADC	Air Diffusion Council
AFBMA	Anti-Friction Bearing Manufacturers Association
AFI	Air Filter Institute
AGA	American Gas Association
AF&PA	American Forest and Paper Association
AGC	Associated General Contractors of America
AHA	American Hardboard Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AIMA	Acoustical and Insulation Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALSC	American Lumber Standards Committee
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
AOAC	Association of Official Analytical Chemists
APA	American Plywood Association
API	American Petroleum Institute
AQMD	Air Quality Management District
ARI	Air-Conditioning and Refrigeration Institute
ASA	American Standards Association
ASAH	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers

ASME	American Society of Mechanical Engineers Association
ASTM	American Society for Testing and Materials
AWCI	Association of Wall and Ceiling Industries
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers' Association
BICSI	Building Industry Consulting Service International
BOCA	Building Officials and Code Administrators
CAC	California Administrative Code
CARB	California Air Resources Board
CBC	California Building Code
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CDA	Copper Development Association, Inc.
CDFG	California Department Fish and Game
CE	Corps of Engineers (U.S. Dept. of the Army)
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response and Cleanup Liability Act
CESO	California Elevator Safety Order
CFC	
CGA	Compressed Gas Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturer's Institute
CLPA	California Lathing and Plastering Association
CMC	California Mechanical Code
CMM	State of California, Business, Transportation and Housing Agency, Department of Transportation "Materials Manual"
COSHA	California Occupational Safety and Health Act
CPC	California Plumbing Code
CPSC	Consumer Product Safety Commission
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards of NBS (U.S. Dept. of Commerce)
CSS	State of California, Business, Transportation and Housing Agency, Department of Transportation "Standard Specifications"
CTI	Cooling Tower Institute
CVRWQCB	Central Valley Regional Water Quality Control Board
DCFM	Designated Campus Fire Marshal
DHI	Door & Hardware Institute
DHS	California Department of Health Services
DSA	Division of State Architect
DSA/AC	Division of State Architect, Access Compliance Section

EIA	Electronic Industrial Alliance
EPA	Environmental Protection Agency
ESO	Electrical Safety Orders of Division of Industrial Safety, Title 8, CAC
ETL	Electrical Testing Laboratories
FCC	Federal Communications Commission
FFDA	Federal Food and Drug Administration
FGMA	Flat Glass Marketing Association
FIA	Factory Insurance Association
FM	Factory Mutual System, Factory Mutual Engineering Corporation
FS	Federal Specifications
FSC	Forest Stewardship Council
GA	Gypsum Association
GFI	Ground Fault Interrupter
HCP	Habitat Conservation Plan
HEPA	High Efficiency Particulate Air
HI	Hydronics Institute
HMI	Hoists Manufacturers Institute
HMMA	Hollow Metal Manufacturers Association
HPMA	Hardwood Plywood Manufacturers Association
IAPMO	International Association of Plumbing and Mechanical Officials
IAQ	Indoor Air Quality
IBEW	International Brotherhood of Electrical Workers
IBR	Institute of Boiler and Radiator Manufacturers
ICBO	International Conference of Building Officials
ICC	
ICEA	Insulated Cable Engineering Association
IEC	International Electrotechnical Commission
IEQ	Indoor Environmental Quality
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society of North America
IGCC	Insulating Glass Certification Council
IPCEA	Insulated Power Cable Engineers' Association
ISA	Instrument Society of America
ISO	International Standards Organization
ITU	International Telecommunications Union
LEED®	Leadership in Energy & Environmental Design
LIA	Lead Industries Association
MBMA	Metal Building Manufacturer's Association
MIA	Marble Institute of America
MID	Merced Irrigation District
MIL	U.S. Government, Military Specification
MLSFA	Metal Lath/Steel Framing Association
MM	State of California, Business, Transportation and Housing Agency, Department of Transportation "Materials Manual"
MSS	Manufacturers Standardization Society of Valves and Fittings Industry
NAAB	National Association of Air Balance
NAAMM	The National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers

NBFU	National Board of Fire Underwriters
NBGQA	National Building Granite Quarries Association, Inc.
NBHA	National Builders' Hardware Association
NBS	National Bureau of Standards
NCCP	National Communities Conservation Plan
NCMA	National Concrete Masonry Association
NCPWB	National Certified Pipe Welding Bureau
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Protection Act
NETA	National Electrical Testing Association
NFPA	National Fire Protection Association
NHLA	National Hardwood Lumber Association
NIOSH	National Institute of Occupational Safety and Health
NPA	National Particleboard Association
NPDES	National Pollutant Discharge Eliminate System
NRC	Noise Reduction Coefficient
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association, Inc.
NWWDA	National Wood Window and Door Association
OSHA	Office of Safety and Health Act
OSHPD	Office of Statewide Health Planning and Development
PCA	Portland Cement Association
PCB	Polychlorinated Biphenyl
PCI	Precast/Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PI	Perlite Institute
PS	Product Standard of United States Department of Commerce
RCRA	Resource Conservation & Recovery Act
RCSC	Research Council on Structural Connection
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
RUS	U.S. Department of Agriculture, Rural Utilities Service
SJVAPCD	San Joaquin Valley Air Pollution Control District
SAE	Society of Automotive Engineers
SBC	State Building Code
SBS	State Building Standards Electrical Code, Title 24, Part 3
SCS	Scientific Certification Systems
SDI	Steel Door Institute
SFM	State of California, Office of State Fire Marshal
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal & Air Conditioning Contractors' National Association, Inc.
SPIB	Southern Pine Inspection Bureau (Grading Rules)
SPR	Simplified Practice Recommendation

SSPC	Society for Protective Coatings
STC	Sound Transmission Coefficient
SWI	Sealant and Waterproofers Institute
SWPPP	Storm Water Pollution Prevention Plan
TCA	Tile Council of America, Inc.
TIA	Telecommunications Industry Association
UBC	Uniform Building Code
UCM	University of California Merced
UCMFM	University of California Merced Facilities Management
UFAS	Uniform Federal Accessibility Standards
UHMW	Ultra-High Molecular Weight
UL	Underwriters' Laboratories, Inc.
USA	Underground Service Alert
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGBC	United States Green Building Council
USS	United States Standards
USSG	United States Steel Gauge
WAPA	Western Area Power Authority
WCLIB	West Coast Lumber Inspection Bureau
WH	Warnock Hersey
WIC	Woodwork Institute of California
WLPDIA	Western Lath/Plaster/Drywall Industries Association
WRSI	Western Concrete Reinforcing Steel Institute
WWPA	Western Wood Products Association
WWPOA	Western Wood Preserving Operators Association
WWTP	Waste Water Treatment Plant

B. Additional abbreviations, used on the Drawings, are listed thereon.

1.2 SYMBOLS

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

1.3 DEFINITIONS

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

1. AS DIRECTED - "As directed by the University's Representative."
2. AS REQUIRED - "As required by Applicable Code Requirements; by good building practice; by the condition prevailing; by the Contract."
3. AS SELECTED - "As selected by the University's Representative."
4. BY OTHERS - Work on this Project that is outside the scope of Work to be performed by the CM/Contractor under this Contract, but that will be performed by the University, Separate Contractors, or other means.
5. EQUAL - Of same quality, appearance, and utility to that specified, as determined by the University's Representative. The CM/Contractor bears the burden of proof of quality.

6. FABRICATED - Items specifically assembled or made out of selected materials to meet individual design requirements.
7. FURNISH - "Supply only, not install (unless required to be provided or installed elsewhere in the Contract Documents)."
8. INSTALL - "Install or apply only, not furnish."
9. MANUFACTURED – Applies to standard units usually mass-produced.
10. OFF SITE - Outside the Work area as shown on the Drawings or the property lines.
11. PROJECT SITE - Geographical location of the Project.
12. PROVIDE - "Furnish and install."
13. SHOWN - "As indicated on the Drawings."
14. SPECIFIED - "As written in the Contract Documents."
15. SUBMIT - "Submit to University's Representative."
16. OFCI - UNIVERSITY-FURNISHED, CONTRACTOR INSTALLED - "To be furnished by University and installed by CM/Contractor as part of the Work. Scope of work includes receipt, off-loading, inspection, on-site storage of material and protection after installation until acceptance."

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 42 13

SECTION 01 51 00
TEMPORARY UTILITIES
AS IT APPLIES

PART 1 - GENERAL

1.1 REQUIREMENTS

- A. Contractor shall provide and maintain temporary utilities for construction operations and related necessary temporary structures. Remove them when they are no longer needed.
- B. Contractor shall pay for connections/disconnections of all temporary utilities; e.g., gas, water, power, and telephone.
- C. Contractor shall pay for connections for water and electricity to Project site sources.
- D. University does not guarantee amounts of water and electricity available from existing sources, nor will the University be responsible for interruptions in service.
- E. Contractor shall maintain and operate systems to provide continuous service.
- F. Contractor shall modify and extend systems as required.
- G. Materials may be new or used, but shall be adequate for the required purposes. Their use and methods of installation shall not create unsafe conditions or violate requirements of Applicable Codes Requirements.

1.2 REMOVAL AND RECONDITIONING

- A. Contractor shall remove all temporary services installed as a requirement of these Contract Documents. Restore utilities to their original condition at the completion of Work.
- B. Contractor shall legally and properly dispose of all debris resulting from removal and reconditioning operations.
- C. Contractor shall patch and repair building elements as required by temporary utility removals.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

- A. Contractor shall install and use temporary utilities in accordance with latest version of the following:
 - 1. California Electrical Code.
 - 2. Federal, State, and local codes and regulations.
 - 3. Utility company requirements.

1.4 TEMPORARY ELECTRICITY

- A. If adequate spare power source is available nearby, Contractor may coordinate for such power for construction. University will not provide electricity free of charge. Contractor

shall meter temporary electricity and will be charged based on average rates.

1.5 TEMPORARY FIRE PROTECTION

- A. Contractor shall conform to the rules, regulations, and instructions of the University and the Local Department and such agencies having jurisdiction or identified by the University's Representative. Contractor shall:
1. Ensure that no burning shall be done on Project site.
 2. Provide and maintain fire protection equipment including extinguishers, fire hoses, and other equipment as necessary for proper fire protection during the course of the Work.
 3. Use fire protection equipment only for extinguishing fires.
 4. Locate fire extinguishers in field offices, storage sheds, tool houses, other temporary buildings, and throughout the Project site.
- B. In the area under construction demolition, Contractor will provide at least 1 multi-purpose dry chemical fire extinguisher for each 3,000-square feet of building floor area. Locate fire extinguishers so that a person never has to walk more than 75 feet to obtain one. Fire extinguisher minimum size must be 4A:20BC (10 pound ABC). Use fire protection equipment only for fighting fires. Any additional fire extinguishers required for your scope of work are to be provided by Contractor.
- C. Contractor shall assigned a qualified person with authority to maintain fire protection equipment, institute fire prevention measures, be a liaison with the University's Representative, Local Fire Department and such agencies having jurisdiction or identified by the University's Representative, and direct the prompt removal of combustible and waste materials from the Project site. Prior to start of Work, Contractor shall organize a mandatory safety meeting. The attendees at this meeting shall at a minimum include the University's Representative, a representative of the Local Fire Department, the Contractor's Project Site Superintendent and the Contractor's Fire Liaison.
- D. Contractor shall instruct all subcontractors in the site fire prevention measures, the location of fire extinguishers and the procedures for dealing with fire on site.
- E. Call 9-1-1 and pull fire alarm box when applicable, for any emergency. Report the exact location (building name and street intersection) and nature of the emergency. Contractor is responsible for and will be billed for fire response charges (actual cost of personnel and equipment) for any false alarm and needless call.
- F. Refer to Section 01 41 00 Regulatory Requirements for permits required.
- G. Vehicles or storage of materials on Project site must not obstruct, block or damage or render useless any fire hydrants, fire department connection, fire alarm box or fire access roadway. Any necessary road closures or disruption to utilities shall be requested through the University's Representative as stated in Section 01 35 00 Special Requirements.
- ~~H. Do not tamper with or work on any fire alarm or fire protection system without first gaining authorization from the University's Representative. System shutdown requests~~

~~shall require a minimum of 48 hours advance notice. Contact University's Representative for any such requests.~~

1.6 TEMPORARY HEAT, VENTILATION AND AIR CONDITIONING

- ~~A. Contractor shall provide temporary heat and ventilation as required by the Instructions to Bidders and as required to maintain adequate environmental conditions to meet specified minimum conditions for installation of materials; and to protect equipment, materials, and finishes from damage due to temperature or humidity for all work. The use of temporary heating appliances will require a Hazardous Condition Permit as specified in Section 01 41 00 Regulatory Requirements.~~
- ~~B. Contractor shall provide adequate forced ventilation of enclosed areas to cure installed materials, to prevent excessive humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases for their own work.~~

1.7 TEMPORARY SANITARY FACILITIES

- A. Portable Chemical Toilets and maintenance will be provided by Contractor.
- B. Permanent toilet facilities within an existing building shall not be used without written authorization of the University.

1.8 TEMPORARY TELEPHONE SERVICE

- A. Contractor shall provide a mobile phone on-site at all times for effective University's Representative communications with the Contractors field personnel.

1.9 TEMPORARY WATER

- A. University will not provide water free of charge. Contractor shall meter temporary water and will be charged based on average rates.
- B. Water may be taken from local systems in such quantities and at such times as they are available. If this is done, Contractor shall provide all equipment, including metering, connections, and other materials necessary for extending the utility lines to where they will be used. Coordinate the installation with University's Representative. Contractor shall pay for connections and removal of connections to the local water and power mains.
- C. If water is obtained from a City fire hydrant, the hydrant valve shall not be used as a control valve. Use hydrant wrench; do not use pipe wrench. Contractor shall provide all valving necessary to control the flow of water.
- D. Contractor shall:
 - 1. Use a reduced pressure backflow preventer shall be used at any connection to University's system, including fire hydrants.
 - 2. Install according to California Administrative Code, Title 17, Section 7603(c), and test immediately after installation by a certified tester in accordance with Title 17, CAC, Section 7605(d).
 - 3. Install piping with taps located so that water is available throughout the Project site by the use of hoses. Protect piping and fittings against freezing.

4. Provide water for human consumption in accordance with the regulatory requirements for potable water.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 51 00

SECTION 01 56 00
TEMPORARY BARRIERS AND ENCLOSURES

PART 1 - GENERAL

1.1 TEMPORARY FACILITIES

- A. Contractor shall provide and maintain the following temporary facilities as required for prosecution of the Contract:
 - 1. All scaffolding, staging, runways, and similar equipment necessary to complete work is to be provided by Contractor.
 - 2. Temporary rigging, rubbish chutes, ladders between floors and similar equipment shall be provided by Contractor
 - 3. Barricades, lights and similar safety precautions shall be provided by the Contractor.
 - 4. All materials and equipment required to safely accomplish Work under this Section shall be in conformance with requirements of California Occupational Safety and Health act (COSHA), Chapter 5 of CalTrans Traffic Manual and other State and Federal Codes and regulations where applicable.
- B. Codes: All temporary Work and facilities shall conform to the above requirements that pertain to operation, safety and fire hazard.
- C. Removal: Upon completion of the Work, and before the final payment, the responsible Contractor shall remove all temporary Work and facilities to put the Project site in the condition required by the Contract Documents with no additional cost to the University.

1.2 TEMPORARY PROJECT CONSTRUCTION FENCE

- A. No Contractor shall place any signs, advertisements, notices, or graphic materials on construction fencing that have not been approved in advance by University's Representative.
- B. Fencing shall be provided and maintained by Contractor.
- C. Contractor is responsible for any damage caused by Contractor's Operations.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 56 00

SECTION 01 57 23
STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.1 SCOPE

- A. Discharge of pollutants (any substance, material, or waste other than clear, uncontaminated storm water) from the project into the storm drain system is strictly prohibited by the Central Valley Regional Water Quality Control Board's (CVRWQCB) Water Quality Control Plan (Basin Plan).
- B. Contractor to provide all material, labor, and equipment for installation, implementation, and maintenance of all surface-water pollution prevention measures. This work includes the following:
 - 1. Furnishing, placing, and installing effective measures for preventing runoff of soil, silts, gravel, hazardous chemicals or other materials prohibited by the CVRWQCB from entering the storm water drainage system.
 - 2. Management of on-site construction materials in such a manner as to prevent said materials from contacting storm water or wash water and running off into the storm drain system.
 - 3. Complying with applicable standards and regulations specified herein.
 - 4. Maintain 1 copy of the most current revised Storm Water Pollution Protection Plan (SWPPP) at the Contractor's work site.
 - 5. Review any changes in the SWPPP plan each week at the weekly meetings with University's Representative and others. At each weekly meeting, the Contractor shall submit a numbered checklist of the current status of each prevention measure on the job site.
- C. In this section, the term "storm drain system" shall include storm water conduits, storm drain inlets and other storm drain structures, street gutters, channels, ditches, and the Fairfield Canal and Little Lake.
- D. Sanitary sewer discharge regulations are intended to provide protection of the sanitary sewer system and the University's or local Waste Water Treatment Plant (WWTP). In this section, "sanitary sewer" shall include any sanitary sewer manhole, clean out, sewer laterals or other connection to the WWTP.
- E. Contractor shall have storm water pollution prevention measures in place and conduct inspections year-round. It is the responsibility of the Contractor to be prepared for a rain event in the non-rainy season, and to be aware of weather predictions. The University is not responsible for informing the Contractor of rain predictions.
- F. Sanitary sewer blockages can result in a back-up and discharge to the storm drain system. Contractor shall immediately notify the University's Representative if they become aware of a clogged sanitary sewer associated with the Project.

- G. Contractor shall not allow any non-storm water from the Project to enter the storm drain system. Examples of non-storm water include water used for dust suppression, pipe flushing and testing, and domestic supply water used to wash streets, painting and drywall equipment, vehicles, or other uses.
- H. Water resulting from de-watering an excavation may be discharged to a storm drain only if it is free of pollutants, including sediment. Contractor shall use methods such as a settling basin or filter to ensure that dewatering discharges are free of pollutants.

1.2 REGULATIONS AND STANDARDS

- A. Contractor shall comply with the following applicable regulations, including all applicable amendments:
 - 1. Clean Water Act, United States Environmental Protection Agency, and Porter-Cologne Water Quality Act, State of California.
 - 2. Central Valley Regional Water Quality Control Board's Basin Plan, 1998 Edition.
 - 3. Waste Discharge Requirements Order No. 2010-0014-DWQ (National Pollutant Discharge Elimination System (NPDES) Permit No. CAS000002) These Orders are referred to as the General Permit.
 - 4. NPDES Phase II General Municipal Permit requirements.
- B. Contractor shall comply with the following standards and guidelines on storm drain pollution prevention:
 - 1. California Stormwater Quality Association Handbooks – Construction, Municipal, Industrial and Commercial, and New Development and Redevelopment. These documents can be viewed and downloaded from the Association's website at <http://www.cabmphandbooks.org>.

1.3 SUBMITTALS

- A. Submittals shall comply with requirements specified in Section 01 33 23 Shop Drawings, Product Data and Samples.
- B. Submit a New Construction Project Information Form (Exhibit 19) to University's Representative. This form is required for compliance with the campus-wide permit with the CVRWQCB for discharges of storm water associated with construction activities.
- C. Review the University's Storm Water Pollution Prevention Plan (SWPPP) prior to ground breaking. The SWPPP contains all required elements specified in the General Permit using the SWPPP Template in Appendix B of the California Stormwater Quality Association – Stormwater Best Management Practice Handbook for Construction. This template can be downloaded from the California Stormwater Quality Association website at <http://www.cabmphandbooks.org/Construction.asp>. The SWPPP has been developed and revised as necessary to meet the following objectives:
 - 1. To identify pollutant sources that may affect the quality of storm water discharges associated with construction activity from the construction site.
 - 2. To identify non-storm water discharges.

3. To identify, construct, and implement storm water pollution prevention measures (Best Management Practices, or BMPs) to reduce or eliminate pollutants in storm water discharges from the construction site, both during construction and after construction is completed.
 4. To develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).
 5. Contractor shall notify the University whenever there is a change in construction, operations or site conditions that may affect the discharge of pollutants to surface waters so that the SWPPP can be amended. All amendments should be dated and directly attached to the SWPPP.
 6. The SWPPP shall include a site map and site-specific written plans that describes pollution sources for the construction activity and the methods that will be used for erosion and sediment control, hazardous materials management, and any other construction activity that are sources of pollution. The list of topics to be covered in the plan are included in Part 3 Execution of this Section.
- D. Site work shall not commence until the SWPPP has been reviewed and accepted by the University's Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide materials as required for execution of the Work.

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall provide qualified personnel that will implement the University's SWPPP. The Contractor will choose the best available performance-based technology and methods to prevent storm water pollution for construction site activity. The method(s) chosen shall be appropriate for each specific site condition.
- B. The University will provide a Qualified SWPPP Practitioner (QSP) to make all required inspections and complete inspection checklist, using a form provided by the State Water Board or Regional Water Board. Contractor shall make all necessary corrections or changes noted on the inspection checklist.

3.2 SWPPP TOPICS

- A. Following are topics addressed in the SWPPP:
1. Introduction/Site Description:
 - a. The SWPPP shall include basic information about the project including: size of site, type of construction, location of site, project start date and estimated completion

date. The site description shall be updated to reflect changes in conditions which may reflect.

2. Maps:
 - a. The General Permit has specific map requirements, including a topographic map showing the location of nearby surface water bodies and the discharge location(s) for the site. A detailed site map is also required, which shall identify areas of soil disturbance, location of surface water bodies, areas of existing surface vegetation, location of sediment or pollutant control measures, site drainage patterns, areas used for storage of soils, waste, or materials, vehicle and equipment parking or service areas, existing paved areas and location of post-construction controls. The maps shall be updated as needed to reflect changes as the project progresses. The approved map and plan shall be kept onsite for reference by the Contractor, University's Representative or governmental agencies.
3. Description of Site and Soil Types:
 - a. Include the following estimates:
 - 1) The size of the construction site (in acres) ;
 - 2) The runoff coefficient of the site before and after construction;
 - 3) The percentage of the area of construction that is impervious before and after construction) .
4. Pollutant Sources:
 - a. List and describe pollutants that are likely to be present in storm water discharges from the site, such as sediment, waste materials, concrete, etc. Describe the locations of storage or use of such materials and the measures to prevent pollution.
5. Toxic Materials:
 - a. Describe all toxic materials that will be used during construction, such as adhesives, paint, petroleum products, pesticides, and vehicle fluids. Describe the locations of storage or use of such materials and the measures to prevent pollution.
6. Erosion and Sediment Control:
 - a. Provide a description of erosion and sediment control measures that will be used on the site, and correlate the description with the site map. Areas requiring erosion control measures are exposed soil, such as stockpiles, bare soil, sloped soil, and any area of disturbed soil. Erosion control measures include paving, tarp placement, soil blankets, mulching, seeding, hydro-mulching, and spreading straw. Sediment control measures include drain inlet protection, filter fabric, geo-textile silt fencing, gravel placement, gravel or sand bag placement, and straw wattle placement. This list is not all inclusive and the Contractor should refer to the resources listed in this section to identify the best measures for the project. Describe measures to reduce the tracking of sediment from the site. Describe waste disposal practices and methods to prevent waste materials from polluting storm water. Indicate the location of concrete washout areas. 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.
7. Non-Storm Water Management:

- a. Describe all non-storm water discharges that may occur on site. Examples of non-storm water discharges include irrigation runoff, street cleaning, spills, or leakage from storage tanks. Non-storm water discharges should be eliminated or reduced to the extent feasible. Discharges from dewatering are allowed only if they are free of pollutants, including sediment.
8. Maintenance, Inspection and Repair of Controls:
 - a. Structural pollution controls require ongoing inspection, maintenance and repair. Contractor shall maintain all pollution control measures to achieve compliance with the SWPPP and General Permit. Describe procedures for responding to failure of any structural controls and indicate the persons responsible for inspection, maintenance and repair.
9. Spill Prevention and Control:
 - a. Measures to prevent, control and respond to spills shall be described in the SWPPP. Contractor shall take precautions to prevent accidental spills of pollutants, including hazardous materials brought onsite by the Contractor. However, in the event of a spill, the Contractor shall be responsible for the following:
 - 1) Immediately contain and prevent leaks and spills of prohibited pollutants from entering the storm drain system. Clean up the spill and label the contained material. Store the container in a safe place and contact the University's Representative prior to disposal of the waste by the Contractor. Contractor shall keep a spill kit on site at all times for this purpose. The Contractor shall also keep a sampling kit, with the spill kit. At a minimum, three appropriate vials for sampling.
 - 2) Contractor shall comply with all federal, state, and local hazardous waste requirements. Ensure that no spilled materials are washed into the streets, gutters, storm drains, or creeks.
 - 3) Report any hazardous or unknown material spills immediately to the University's Representative and the University of California, Merced Office of Environment, Health and Safety. If a spill occurs after hours or on a weekend, call (209) 658-8487 and Merced County Department of Public Health, Division of Environmental Health at (209) 381-1090.
10. Post-Construction Stormwater Management
 - a. Describe all the control practices to reduce pollutants in storm water discharges after the construction activities are completed at the site. Post construction BMPs include: minimizing land disturbance, minimizing impervious surfaces, treatment of storm water runoff using filtration, use of efficient irrigation systems, and planting to reduce erodable surfaces.
11. Personnel:
 - a. Identify and describe the training of the personnel responsible for the implementation and monitoring of the SWPPP and BMPs. Documentation of training shall be available upon the request of the University's Representative or a regulatory agency.
12. Notification List:
 - a. Provide the company's name, address and telephone number, along with a contact person's name and telephone number for everyone responsible for implementation

of the SWPPP. The Contractor shall inform all subcontractors (if any) of the water pollution prevention requirements contained in this specification and the site-specific SWPPP and include appropriate subcontract provisions to ensure that these requirements are met.

13. Monitoring and Reporting:

- a. The SWPPP shall describe the monitoring program to ensure compliance with the General Permit. The monitoring plan shall include site inspections and the University's QSP shall conduct inspections of the construction site weekly, prior to anticipated storm events, during extended storm events, and after actual storm events to identify areas contributing to a discharge of storm water associated with construction activity. The name(s) and contact number(s) of the assigned QSP inspection personnel shall be listed in the SWPPP. Weekly and pre-storm inspections are to ensure that BMPs are properly installed and maintained; post-storm inspections are to assure that the BMPs have functioned adequately. The Contractor should also be inspecting BMPs regularly, prior to and after storm events to insure they are installed and maintained. During extended storm events, inspections by the QSP shall be required each 24-hour period. BMPs shall be evaluated for adequacy and proper implementation and whether additional BMPs are required in accordance with the terms of the General Permit.
- b. Inspections by the QSP must be documented and the records maintained onsite for review by the University's Representative or regulatory agencies. If instances of non-compliance with the General Permit are identified, the Contractor shall notify the University's Representative immediately. Corrective measures should be implemented immediately following discovery of an exceedance of water quality standards or other instance of non-compliance.

3.3 ENVIRONMENTAL ENFORCEMENT

- A. The CVRWQCB has authority to enforce, through codified regulations, any portions of this Section that 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. Contract compliance action by the University shall not be construed to void or suspend any enforcement actions by these or other regulatory agencies.
- B. Contractor shall notify the University's Representative within 24 hours after issuance of any citation(s) issued by any regulatory agency and shall be responsible for all fines and costs necessary to correct the conditions listed in the citation(s) to include all legal fees and University expenses.

END OF SECTION 01351

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS

- A. All material and equipment incorporated in the Work shall be:
 - 1. New.
 - 2. In a condition acceptable to the University's Representative.
 - 3. Suitable for intended use.
 - 4. Clean, dry, and undamaged.

1.2 TRANSPORTATION AND HANDLING

- A. Arrange for delivery of materials and equipment to minimize length of on site storage prior to installation.
- B. All common carrier deliveries shall be marked for the Contractor. Identify location of Project site by Project name, street address, etc.
- C. University will not receive deliveries on behalf of the Contractor.
- D. Deliver manufactured products and materials in their original unbroken containers or bundles, clearly labeled with manufacturer's name, brand, and grade seal or model number and labels intact until time of use.
- E. Handle materials and equipment in a manner to avoid damage to products and their finishes.
- F. Promptly remove damaged or defective products from the Project site and replace at no additional cost to the University.

1.3 STORAGE AND PROTECTION

- A. Other than Project site, storage space may not be available.
- B. Store manufactured products in accordance with manufacturers' instructions and with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weather tight enclosures.
 - 2. Maintain temperature and humidity in accordance with manufacturers' recommendations.
- C. Exterior Storage
 - 1. Store materials and equipment above ground on blocking or skids to prevent soiling, staining, and damage.
 - 2. Cover products that are subject to damage by the elements with impervious protective sheet coverings. Provide adequate ventilation to prevent condensation.

3. Store sand, rock, or aggregate material in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- D. Arrange storage to allow adequate inspection.
- E. Periodically inspect stored products to assure that products are maintained under specified conditions and are free from damage and deterioration.
- F. Protection 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.

1.4 UNDERWRITERS' LABORATORIES LABEL

- A. Materials and equipment, for which Underwriters' Laboratories, Inc. (UL) standards have been established and their label service is available, shall bear the appropriate UL Label.

1.5 MANUFACTURERS' TRADE MARKS AND NAMES

- A. 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 with no adjustment of the Contract Sum.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 60 00

SECTION 01 71 23
FIELD ENGINEERING

PART 1 - GENERAL

1.1 PREPARATION

- A. Lay out and install all Work to lines and grades in accordance with Contract Documents.

1.2 LAYOUTS AND MEASUREMENTS

- A. Contractor shall provide all survey Work required for horizontal and vertical location of all Work in this Project as applies to their scope of work.
- B. Contractor shall be responsible for paying for the replacement and reestablishment of control stakes, monuments, and lines furnished by the University that are destroyed or disturbed by Contractor's construction activities.
- C. Contractor shall furnish the University's Representative, prior to Project acceptance, 2 complete sets of the field notes for the survey Work and cut sheets in addition to 2 sets of drawings marked showing all deviations from Project alignment and grades as applies to their scope of work.

1.3 SURVEY REFERENCE POINTS

- A. Contractor shall locate and protect control points prior to beginning the Work, and preserve all permanent reference points throughout construction operations. Contractor shall:
 - 1. Not change reference points without prior approval of the University's Representative.
 - 2. Report to the University's Representative when any reference point is lost, destroyed, or requires relocation due to necessary changes in grades or locations.

1.4 PROJECT SURVEY REQUIREMENTS

- A. Contractor shall establish lines and levels, locate, and lay out for own work.
- B. Contractor shall provide layouts as Work proceeds to assure compliance with required schedules, lines, levels, and tolerances for own work.

1.5 RECORDS

- A. Contractor are required to maintain a complete and accurate log of all control and survey Work as it progresses for own work.

1.6 SUBMITTALS

- A. Upon request by the University's Representative, Contractor shall submit documentation to verify accuracy of field engineering Work.

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PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 71 23

**SECTION 01 73 35
SELECTIVE DEMOLITION**

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Extent of demolition will be shown on Drawings.
- B. No demolition shall commence until prior written approval is obtained from the University's Representative.
- C. Unless otherwise indicated, demolished materials become Contractor's property. Remove from Project site.
- D. Items indicated to be removed and salvaged remain University's property. Remove, clean, and deliver to University's designated storage area.
- E. Comply with Environmental Protection Agency (EPA) regulations and disposal regulations of authorities having jurisdiction.
- F. Prior to starting demolition of any, comply with requirements listed in Section 01 41 00 Regulatory Requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DEMOLITION

- A. Maintain and protect existing utilities to remain in service before proceeding with demolition, providing bypass connections to other buildings on the system.
- B. Locate, identify, shut off, disconnect, and cap off utility services to be demolished.
- C. Conduct demolition operations and remove debris to prevent injury to people and damage to adjacent buildings and site improvements.
- D. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
- E. Promptly patch and repair holes and damaged surfaces of building caused by demolition. Restore ex-posed finishes of patched areas and extend finish restoration into remaining adjoining construction.
- F. Promptly remove demolished materials from University's property and legally dispose of them. Do not burn demolished materials.

END OF SECTION 01 73 35

SECTION 01 77 00
CLOSEOUT PROCEDURES, FINAL CLEANING, AND EXTRA MATERIAL

PART 1 - GENERAL

1.1 FINAL COMPLETION

- A. When Work is complete, submit written certification to University's Representative that:
 - 1. Work has been inspected by the General Contractor for compliance with the Contract Documents.
 - 2. Work has been completed in accordance with the Contract Documents.
 - 3. Equipment and systems have been tested in presence of the University's Representative and are operational.
 - 4. Work is complete and ready for final inspection.

1.2 PREPARATION FOR FINAL INSPECTION

- A. Perform final cleaning as specified below.
- B. In accordance with Section 01 78 36 Guarantees, Warranties, Bonds, Service & Maintenance Contracts, assemble guarantees/warranties with service and maintenance contracts, operating and maintenance instructions, and other items as specified, and submit to the University's Representative.

1.3 FINAL CLEANING

- A. Upon completion of the Work, the General Contractor shall promptly remove from the Project site and Project site vicinity (including roofs):
 - 1. All of General Contractor's equipment
 - 2. All temporary structures
 - 3. All surplus material, including construction debris, lumber, etc.
 - 4. Remove waste, surplus materials and rubbish from Project site, including roof areas.
- B. The entire Project site shall be left in a neat and clean condition to the satisfaction of the University's Representative.
- C. The General Contractor shall execute final cleaning prior to final inspection. Cleaning shall be by experienced professional cleaners.
- D. The General Contractor shall:
 - 1. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish glass and glossy surfaces, vacuum carpeted and soft surfaces, broom clean other interior spaces.

2. Clean equipment and fixtures to a sanitary condition, clean permanent filters and replace disposable filters of mechanical equipment operated during construction.
3. Clean ducts, blowers and coils if units were operated without filters during construction.
4. Vacuum and wipe sides of electrical panels and cabinetwork.
5. Comply with manufacturer's instructions for cleaning.
6. Clean each surface or unit to condition expected from normal, commercial building cleaning and maintenance program.
7. Clean Project site, sweep paved areas, rake clean ground surfaces.
8. Remove stains, dirt, finger marks, etc., from wall and ceiling surfaces and trim.
9. Disinfect, clean and polish all plumbing fixtures.
10. Use cleaning materials and methods that will not create hazards to health or property or cause damage to products or Work.
11. Remove temporary tapes, wrapping, coatings, paper labels, and similar items. Dust, mop, wash or wipe exposed and semi-exposed surfaces as necessary to leave work in new, clean condition.

1.4 RESTORATION OF DAMAGED WORK

- A. Restore or replace, as specified or directed by the University's Representative, materials and finishes damaged from movement of equipment or other operations by General Contractor at no additional cost to the University.
- B. Restoration shall be equal to original Work, and finishes shall match appearance of existing adjacent Work.

1.5 REMEDIAL WORK

- A. Remedial Work necessary owing to faulty workmanship or materials shall be performed by the General Contractor at no additional cost to the University.
- B. Work shall be coordinated with University's Representative and performed at such time and in such manner to cause minimal interruption and inconvenience to University's operations.

1.6 EXTRA MATERIAL

- A. In the various Sections, where additional or extra material is required to be delivered to the University, obtain from the University's Representative, to whom the material is to be delivered, a signed receipt stating the nature of the material, the quantity, and the place and date. Deliver such receipts to the University's Representative upon completion of the Work.
- B. In addition to required parts listed in other Sections of the Specification, provide any special programming software and database tools necessary to operate systems.

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PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 77 00

November 1, 2004

Revision: 1
LF/SF:01 77 00

CLOSEOUT PROCEDURES, FINAL CLEANING, AND EXTRA
MATERIAL

01 77 00 – Page 3

SECTION 01 78 36
GUARANTEES, WARRANTIES, BONDS, SERVICE & MAINTENANCE CONTRACTS

PART 1 - GENERAL

1.1 GUARANTEES

- A. Guarantees from Subcontractors shall not limit Contractor's warranties and guarantees to the University. The Contractor shall cause warranties of Subcontractors to be made directly to the University. If such warranties are made to the Contractor, Contractor shall assign such warranties to the University prior to final payment.
- B. At a minimum, the Contractor shall warrant that all work installed under this Contract is free of defect and will remain in good working order for a period of one year for all surface improvements and five years for all underground work. If warranties specified elsewhere in these documents are for a longer period of time than that specified in this section, the longer warranties shall apply.

1.2 FORM OF GUARANTEE

- A. Submit written guarantees, in the form of Guarantee/Warranty Form (Exhibit 16) in accordance with Section 01 33 23 Shop Drawings, Product Data and Samples.

1.3 SUBMITTAL REQUIREMENTS

- A. Assemble required guarantees, bonds, and service and maintenance contracts.
- B. Number: 1 signed original and 2 copies.
- 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, telephone number and name of principal.
 - 3. Scope.
 - 4. Identifying name, serial number or part number.
 - 5. Proper procedure in case of failure.
 - 6. Circumstances that might affect the validity of guarantee or bond.

1.4 FORM OF SUBMITTAL

- A. Prepare in duplicate packets.
- B. Format
 - 1. On sheets 8-1/2 by 11 inches 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. Project No.

- b. Title of Project.
 - c. Name of Contractor.
- C. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers.
- D. Time of Submittals
 - 1. Within 10 days after date of Substantial Completion, prior to request for final payment.
 - 2. For Work activities, where Final Completion is delayed beyond the date of Substantial Completion, provide updated submittal within 10 calendar days after Final Completion, listing the date of Final Completion as the start of the Guarantee To Repair Period.

1.5 SUBMITTALS REQUIRED

- A. Submit guarantees, bonds, and service and maintenance contracts specified in the individual Specification Sections.
- B. Compile all warranties from the specified individual Specification Sections. Submit those in a commercial, 3-ring binder with durable and cleanable plastic covers.

1.6 SPARE PARTS AND MAINTENANCE MATERIAL

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to Project site and place in location as directed by the University's Representative and obtain receipt prior to final payment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 78 36

SECTION 01 78 39
PROJECT AS-BUILT DOCUMENTS
AS IT APPLIES

PART 1 - GENERAL

1.1 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store Project as-built documents and samples in the Contractor's office in a location completely separate from documents used for construction. The location shall be approved by the University's Representative.
- B. Maintain as-built documents in order and in a clean, dry, legible condition.
- C. Do not use as-built documents for construction.

1.2 AS-BUILT DOCUMENTS

A. As-built Drawings

- 1. The Contractor shall maintain on the Project site at all times in a clean, dry legible condition, 1 set of all Drawings and 1 set of all Shop Drawings. These Drawings shall be used to record as-built conditions on a day-to-day basis, and shall be kept current, and shall be available for inspection by the University's Representative during normal working hours.
- 2. The Contractor shall obtain weekly written confirmation from the University's Representative that the as-built conditions are adequately represented in the As-built Drawings.
- ~~3. On three (3) occasions to be determined by the University's Representative, the Contractor shall prepare in both AUTOCAD® format (latest version available at date of bid) and PDF Format on CD-ROM digital images of the current As-built Drawings. The image files shall be in format ORIGINAL.DWG and DRAWING NUMBER.PDF. The Contractor may scan the As-built Drawings or use a digital camera or any other appropriate means so long as the resulting image is legible when viewed from the CD-ROM using a computer. All cross references within the same AUTOCAD® drawing must be bound.~~
- 4. Record the following types of information on As-built Drawings
 - a. Location of Work buried under or outside the building, such as plumbing and electrical lines and conduits. Provide horizontal and vertical dimensions from fixed points. Record all locations of underground Work, points of connection, valves, manholes, catch basins, capped stub outs, invert elevations, etc.
 - b. ~~Locations of all significant Work concealed inside the building, the locations of which were changed by the Contractor from those shown on the Drawings.~~
 - c. Locations of all items, not necessarily concealed but varying from the locations shown on the Drawings.
 - d. All changes in size, location, and other features of installation not shown on Drawings.
 - ~~e. Sufficient information such that Work concealed in the building may be located with reasonable ease and accuracy. This may be accomplished by dimension or by stating the relationship to the spaces in the building~~

- ~~near which the Work was installed. The University's Representative's decision on what constitutes sufficient information shall be final.~~
- f. ~~All electrical and control installations to indicate terminal points, wire numbers/circuit numbers, panel designations, device identification, and/or sequence of operations.~~
 - g. Record existing below-grade utilities if they are exposed by the project or are located within the Project boundary on the as-built drawings.
 - h. Provide dimension from a designated reference point for all below-grade utilities, provide and record on the as-built drawing the exact dimension from an existing designated reference point relative to the campus bench mark elevation.
- 5. Additional drawings shall be provided as required to properly describe changes.
 - 6. Upon completion of the Work, the As-built Drawings shall be certified by the Contractor to represent the true, as-built conditions and shall be given to the University's Representative as described in Subsection 1.3.

B. Specifications and Addenda

- 1. Record the following:
 - a. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 - b. Changes made by Addenda, Change Order (Exhibit 9), or Field Order (Exhibit 8), and clarifications and interpretations made by Letter of Instruction (Exhibit 26).
 - c. Provide two (2) hard copies of the specifications and addenda ten (10) days after Final Completion.

C. Large-Scale Layout Drawings

- ~~1. Division 22 Plumbing, Division 23 Heating, Ventilating, and Air Conditioning (HVAC) and Division 26 Electrical of the Specifications require the preparation of large-scale, detailed Layout Drawings of the Work of those Divisions. 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 Sections, are used to check, coordinate, and integrate the Work of the various Sections.~~

D. Project Photographs

- 1. At appropriate intervals but not less than once a month, the Contractor shall submit digital site photographs on CD-ROM to the University's Representative. These photographs shall:
 - a. Use format NAME.JPG
 - ~~b. Show the completed installation of all pipes, ducts, cable trays and other mechanical, electrical and plumbing services before they are covered and hidden from view. This shall include, but not be limited to, services cast into concrete elements; buried services covered by ground slabs; services in walls hidden by sheetrock, tile, or plaster; services above ceilings.~~
- 2. The CD-ROM containing the photographs shall also contain an electronic file with enough information to identify the exact location of the element shown in each photograph. The electronic file shall:
 - a. Be in Microsoft Word or Excel format.

- b. Cross reference to the name of each photograph.
- c. Identify the location and direction of each photograph. As a minimum, this shall include element identification, grid reference, floor number if applicable and cardinal direction photographer was facing when photograph was taken.
- d. Identify the date of the photograph.

1.3 PROJECT LEGACY DOCUMENTS

A. AS-BUILT DRAWINGS

- 1. The Contractor shall submit to the University's Representative, 10 calendar days after Final Completion, fully updated As-built Drawings and Shop Drawings. These Drawings shall be prepared from the As-built Drawings.
- 2. The As-Built Drawings shall be in electronic format, AUTOCAD® latest version available at date of bid. File shall be ORIGINAL.DWG format and PDF format. Electronic media shall be CD-ROM. The General Contractor shall provide two (2) hard copies of the drawings on 24 pound 96 Bright Bond paper or better quality and two (2) copies on CD-ROMs. Each CD-ROM shall contain all of the electronic Drawing files.
- 3. The Contractor's AUTOCAD® As-Built Drawings may be based on AUTOCAD® Design Drawings provided by the University or the University's Design Professional so long as for each drawing:
 - a. Any lines added to the Design Drawing in model space by the Contractor shall be in AUTOCAD® layers not currently used by the Design Drawings. The Contractor shall not use more than five (5) layers for added lines.
 - b. Any lines deleted from the Design Drawing in model space by the Contractor shall be copied into a single layer not currently used by the Design Drawings.
 - c. The Contractor's As-Built Drawings based on the Design Drawings shall therefore contain:
 - (1) The lines on the Design Drawings in the same AUTOCAD® layers as the Design Drawings (not changed by the Contractor).
 - (2) A single AUTOCAD® layer containing the lines on Design Drawings deleted by the Contractor.
 - (3) Not more than five (5) AUTOCAD® layers containing the lines added by the Contractor to the Design Drawing.
- 4. AUTOCAD® As-Built Drawings not based on AUTOCAD® Design Drawings provided by the University or the University's Design Professional, shall be configured as follows:
 - a. Title block and plot set-up shall be in Paper space.
 - b. All other drawing data shall be in Model space.
 - c. Each drawing shall contain a title block and orientation/north arrow approved by the University's Representative.

B. SHOP DRAWINGS

- 1. The Contractor shall submit to the University's Representative, 10 calendar days after Final Completion, fully updated Shop Drawings.
Contractor shall:

- a. Provide 2 hard copies of the Shop Drawings on 24 pound, 96 Bright Bond paper.
- b. Provide 2 CD-ROMs, each of which contains all drawing data if the Contractor used Computer Aided Drafting software to prepare the Shop Drawings.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 78 39

SECTION 01 92 00
OPERATING AND MAINTENANCE

PART 1 - GENERAL

1.1 WORK INCLUDED

- 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 Specification Sections.
- C. Instruct University's personnel in the maintenance and operation of equipment and systems.

1.2 FORM OF SUBMITTAL

- A. Prepare data in the form of an instructional manual for use by University's personnel in both electronic and hard copy formats.
 - 1. Electronic Format
 - a. The Contractor may scan the documents using word searchable software or any other appropriate means so long as the resulting image is legible and word searchable when viewed from the provided CD-ROM using a computer.
 - 2. Hard Copy Format
 - a. Size: 8-1/2 by 11 inches.
 - b. Paper: 20 lb minimum, white, for typed pages.
 - c. Text: Manufacturers' printed or neatly typewritten data.
 - d. Drawings
 - (1) Provide reinforced punched binder tab that is bound with the text.
 - (2) Fold larger drawings to the size of the text pages.
 - e. Provide flyleaf for each separate product or each piece of operating equipment.
 - (1) Provide typed description of products and major component parts of equipment.
 - (2) Provide indexed tabs.
 - f. Cover: Identify each volume with typed or printed title "Operating and Maintenance Instructions". List the following:
 - (1) Project No.
 - (2) Title of Project.
 - (3) Identify general subject matter covered in the volume.
 - g. Binders
 - (1) Commercial quality three-ring binders with durable and cleanable plastic covers.
 - (2) When multiple binders are used, correlate the data into related groups.

3. Submit Operations and Maintenance manual on or before 75 percent progress payment submittal.

1.3 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. Subcontractor or installer.
 - b. Maintenance contractor, 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, serial number, part number and any other identifying symbols necessary.
5. Identify the location of the installed product.

B. Product Data

1. Include only those sheets that 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 that might affect the validity of warranties or bonds.

1.4 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit 2 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, shutdown, and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 3. Systems Demonstration
 - a. Prior to final inspection, demonstrate operation of each system to University's Representative and University personnel. All work, required for each system to be fully functional, shall be complete and the system shall be fully operational prior to the demonstration.
 - b. Instruct designated personnel in operation, adjustment, and maintenance of equipment and systems, using operation and maintenance data as basis of instruction.
 4. Maintenance procedures
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair, and reassembly.
 - d. Aligning, adjusting, and checking
 5. Preventative Maintenance (PM) Schedule
 - a. A tabular listing of all systems and equipment within the facility which require preventative maintenance, to include:
 - (1) System or equipment name.
 - (2) System or equipment number.
 - (3) PM activity to be performed on that system or piece of equipment.
 - (4) Consumable materials required for performance of the PM activity, such as lubricants, including the specification and quantity needed.
 - (5) Frequency of performance of PM activity.
 - (6) Date of performance of first round of each PM activity relative to facility commissioning and acceptance by the University.
 - b. The requirements of this section cannot be met merely by the supply of Operating & Maintenance manuals from equipment vendors. The extraction of recommended preventative maintenance activities from vendor manuals for all equipment and incorporation onto a summary table as described above is required.
 6. Servicing and lubricating schedule, with list of lubricants required.
 7. Manufacturer's printed operating and maintenance instructions.
 8. Description of sequence of operation by control manufacturer.
 9. 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.
 - 10. As-installed control diagrams by controls manufacturer.
 - 11. General Contractor and Subcontractors' coordination drawings and as-built color-coded piping diagrams.
 - 12. Charts of valve tag numbers, with the location and function of each valve.
 - 13. Other data as required in the various Specification 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 panel boards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 - 3. As-built 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 Specification Sections.
- D. Prepare and include additional data as may be required for instruction of the University's personnel.
- E. Additional requirements for operating and maintenance data as specified in the individual Specification Sections.
- F. Provide complete information for products specified in the individual Specification Sections.

1.5 SUBMITTAL REQUIREMENTS

- A. Submit 2 copies of the preliminary draft of proposed formats and outlines of content prior to preparation of data, 75 days prior to final inspection. University's Representative will review the draft and return 1 copy with comments.

- B. Submit 1 copy of the completed data in final form 45 days prior to final inspection. A copy will be returned with comments after final inspection. No final inspection will be made until the required data has been submitted and found to be satisfactory.
- C. Submit specified number of copies of approved data in final form 10 calendar days after final inspection but not later than 10 days prior to Owner Training.

1.6 INSTRUCTIONS OF UNIVERSITY'S PERSONNEL

- A. Work requiring instruction of the University's personnel is specified in the individual Specification Sections.
- B. Schedule the instructional meeting or meetings 2 weeks after instructional manuals have been submitted, reviewed, and accepted by the University's Representative.
- C. Upon the University's taking Beneficial Occupancy or after Final Completion (whichever is earlier), fully qualified representatives of the manufacturers shall fully instruct the University's Representative and University personnel in the operation, adjustment, and maintenance of all equipment and systems.
- D. Basis of Instruction: Operating and maintenance manual. Review contents of manual with University personnel in full detail to explain all aspects of operations and maintenance.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 92 00