PROJECT MANUAL

November 1, 2011
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   NOT USED

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   NOT USED

**ADDITIONAL PROJECT SPECIFICATIONS:**
*HAZARDOUS MATERIALS AND DEMOLITION PROJECT SPECIFICATIONS*, as prepared by District Environmental Consultant, H2 Environmental Consulting Services, Inc.

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*If the following items are not returned at the time of the bid opening, the bidder will be declared nonresponsive
+Items which successful bidder must submit after the award
NOTICE CALLING FOR BIDS

District: SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT

Project: BID NO. 13: - Hangar 524 - Site Utility Severance and Demolition, Tustin, CA

Bid Deadline: 2:00 P.M., December 8, 2011

Mailing Address & Place of Bid Receipt: South Orange County Community College District Health Sciences Building, 3rd Floor, Room HS-357 Purchasing & Facilities Planning Department 28000 Marguerite Parkway Mission Viejo, CA 92692

NOTICE IS HEREBY GIVEN that the South Orange County Community College District, of Orange County, California, acting by and through its Governing Board, hereinafter referred to as "DISTRICT," will receive up to, but not later than, the above-stated time, sealed bids for the award of a contract for the above Project.

Project’s Preliminary Cost Estimate: ATEP Hangar 524 - Site Utility Severance and Demolition - $350,000.

Complete description, specifications and general conditions may be viewed at the Office of the Director of Facilities Planning and Purchasing Department at the above address, telephone (949) 582-4678 or previewed online at socccd.edu Interested bidders may purchase complete bid documents from Repro X-press, 18207 McDurmott St., Suite I, Irvine, CA 92614, Phone: (866) 364-8569, Fax: (949) 336-7757. Payment will not be refunded, and the Project Documents are not required to be returned.

There will be a mandatory job walk and conference at 1:00 am, December 1, 2011, starting in front of 15455 Lansdowne Road, Tustin, CA. Any bidder failing to attend the entire pre bid conference shall be deemed a non-responsive bidder and will have his bid returned unopened.

In accordance with the provisions of California Business and Professions Code Section 7028.15 and Public Contract Code Section 3300, the DISTRICT requires that the bidder possess the following classification of contractor’s license at the time the bid is submitted: Class B or C21, and ASB & HAZ. Any bidder not so licensed at the time of the bid opening will be rejected as non-responsive.

Time is of the essence. Failure to complete the work within the time set forth in the bid documents will result in the imposition of liquidated damages for each day of delay in the amount set forth in the Information for Bidders.

Each bid shall be accompanied by a bid security in the form of cash, a certified or cashier's check or bid bond in an amount not less than ten percent (10%) of the total bid price, payable to the DISTRICT. In the event the successful bidder fails to enter into the contract and execute the required documents, the bid security shall be forfeited. The successful bidder shall furnish a satisfactory Performance Bond and a Payment Bond in amounts not less than one hundred percent (100%) of the total bid price.

The DISTRICT reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process.
The California Department of Industrial Relations has determined the general prevailing rates of per diem wages for the locality in which the work is to be performed for the Project. Copies of these wage rate determinations, entitled Prevailing Wage Scale, are maintained at the DISTRICT office and are available at the following website: www.dir.ca.gov. It shall be mandatory upon the successful bidder to whom the contract is awarded, and upon any subcontractor listed, to pay not less than the said specified rates to all workers employed by them for the Project. These requirements will be enforced through our Labor Compliance consulting firm.

No bidder may withdraw any bid for a period of ninety (90) calendar days after the date set for the opening of bids.

The general prevailing rate of per diem wages is based upon a working day of eight (8) hours. The rate for holiday and overtime work shall be at least time and one-half.

Pursuant to Section 22300 of the Public Contract Code, the Agreement will contain provisions permitting the successful bidder to substitute securities for any monies withheld by the DISTRICT to ensure performance under the Agreement or permitting payment of retention earned directly into escrow.

Prequalification is a requirement for bidding this project. Prequalification documents will be distributed at the mandatory job walk and conference.

Brandy K. D’Lena
Director,
Facilities Planning & Purchasing

PUBLISH: THE REGISTER

November 10, 2011
&
November 17, 2011

ATTENTION: LEGAL AD DEPARTMENT

In order for our Department to process payment, you MUST send Proof of Advertisement (Affidavit) on the date of publication to:

South Orange County Community College District
ATTN: Facilities Planning & Purchasing
28000 Marguerite Parkway
Mission Viejo, CA  92692

NOTE: PLEASE CALL LINDA HALL AT (949) 348-6017 WHEN AD IS RECEIVED.
INFORMATION FOR BIDDERS

WARNING:
READ THIS DOCUMENT CAREFULLY. DO NOT ASSUME
THAT IT IS THE SAME AS OTHER SIMILAR DOCUMENTS
YOU MAY HAVE SEEN, EVEN IF FROM THE SAME DISTRICT.

1. Preparation of Bid Form. Bids shall be submitted on the prescribed Bid Form, completed in full. All bid items and statements shall be properly and legibly filled out. Numbers shall be stated both in words and in figures where so indicated, and where there is a conflict in the words and the figures, the words shall control over the numbers. The signatures of all persons shall be in longhand and in ink. Prices, wording and notations must be in ink or typewritten.

2. Form and Delivery of Bids. The bid must conform and be responsive to all Project Documents and shall be made on the Bid Form provided, and the complete bid, together with any and all additional materials as required, shall be enclosed in a sealed envelope, addressed and hand delivered or mailed to the DISTRICT at:

South Orange County Community College District
Health Science Building, 3rd Floor
28000 Marguerite Parkway
Mission Viejo, CA, 92692

and must be received on or before the bid deadline (Public Contract Code Section 20112) The envelope shall be plainly marked in the upper left hand corner with the bidder's name, the Project designation and the date and time for the opening of bids. It is the bidder's sole responsibility to ensure that its bid is received prior to the bid deadline. In accordance with Government Code Section 53068, any bid received after the scheduled closing time for receipt of bids shall be returned to the bidder unopened. At the time and place set forth for the opening of bids, the sealed bids will be opened and publicly read aloud. However, if prequalification of bidders is required pursuant to Public Contract Code Section 20111.5 only those sealed bids received from prequalified bidders shall be opened and publicly read aloud.

3. Bid Security. Each bid shall be accompanied by a bid security in the form of cash, a certified or cashier's check or bid bond in the amount of not less than ten percent (10%) of the total bid price payable to the DISTRICT and shall be given as a guarantee that the bidder, if awarded the contract, will execute the Agreement within ten (10) working days after notice of award of the contract, and will furnish, on the prescribed forms, a satisfactory Faithful Performance Bond in an amount not less than one hundred percent (100%) of the total bid price and separate Payment (labor and material) Bond in an amount not less than one hundred percent (100%) of the total bid price, furnish certificates and endorsements evidencing that the required insurance is in effect, the Workers’ Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, all within ten(10) working days of the notice of award of the contract or as otherwise requested in writing by the DISTRICT. It is understood and agreed that should bidder fail or refuse to return these documents as required by the DISTRICT, the bid security shall be forfeited to the DISTRICT. If the Bidder elects to furnish a bid bond as its Bid Security, the Bidder shall use the bid bond form included in the Project Documents.

4. Signature. Any signature required on Project Documents must be signed in the name of the bidder and must bear the signature of the person or persons duly authorized to sign these documents. Where indicated, if bidder is a corporation, the legal name of the corporation shall first be set forth, together with two signatures: one from among the chairman of the board, president or vice president and one from among the secretary, chief financial officer, or treasurer. Alternatively, the signature of other authorized officers or agents may be affixed, if duly authorized by the corporation. Such documents shall include the title of such signatories below the signature and shall bear the corporate seal. Where indicated, in the event that the bidder is a joint venture or partnership, there shall be submitted with the bid certifications signed by authorized officers of each of the parties to the joint venture or partnership, naming the individual who shall sign all necessary documents for the joint venture or partnership and, should the joint venture or partnership be the
successful bidder, who shall act in all matters relative to the Project for the joint venture or partnership. If bidder is an individual, his/her signature shall be placed on such documents.

5. **Modifications.** Changes in or additions to any of the bid documents, summary of the work bid upon, alternative proposals, or any other modifications which are not specifically called for by the DISTRICT may result in the DISTRICT’s rejection of the bid as being nonresponsive. No oral, telephonic, facsimile or electronic modification of any of the bid documents will be considered.

6. **Erasures, Inconsistent or Illegible Bids.** The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction is authenticated by affixing the initials of the person(s) signing the bid in the margin immediately adjacent to the correction. In the event of inconsistency between words and numbers in the bid, words shall control numbers. In the event that DISTRICT determines that any bid is unintelligible, illegible or ambiguous, the DISTRICT may reject such bid as being nonresponsive.

7. **Examination of Site and Project Documents.** At its own expense and prior to submitting its bid, each bidder shall examine all documents relating to the Project; visit the site and determine the local conditions which may in any way affect the performance of the work, including the general prevailing rates of per diem wages and other relevant cost factors; familiarize itself with all Federal, State and Local laws, ordinances, rules, regulations and codes affecting the performance of the work, including the cost of permits and licenses required for the work; make such surveys and investigations, including investigation of subsurface or latent physical conditions at the site or where work is to be performed, as it may deem necessary for performance of the work at its bid price; determine the character, quality, and quantities of the work to be performed and the materials and equipment to be provided; and correlate its observations, investigations, and determinations with all requirements of the Project. The Project Documents show and describe the existing conditions as they are believed to have been used in the design of the work and are only provided as information for the bidder. The DISTRICT is not making any warranties regarding said information. The DISTRICT shall not be liable for any loss sustained by the successful bidder resulting from any variance between the conditions and design data given in the Project Documents and the actual conditions revealed during the bidder's pre-bid examination or during the progress of the work. **Bidder agrees that the submission of a bid shall be incontrovertible evidence that the bidder has complied with all the requirements of this provision of the Information for Bidders.**

8. **Withdrawal of Bids.** Any bid may be withdrawn, either personally or by written request signed by the bidder, at any time prior to the scheduled closing time for receipt of bids. The bid security for a bid withdrawn prior to the scheduled closing time for receipt of bids, in accordance with this paragraph, shall be returned. No bidder may withdraw any bid for a period of ninety (90) calendar days after the date set for the opening of bids.

9. **Agreement and Bonds.** The Agreement which the successful bidder will be required to execute and the payment bond required in accordance with Civil Code Section 3247, are included in the Project Documents. The payment bond shall be in the amount not less than one hundred percent (100%) of the amount of the contract in accordance with Civil Code Section 3248. The successful bidder will also be required to furnish a separate faithful performance bond in the amount of one hundred percent (100%) of the contract and in the form included in the Project Documents, which shall remain in full force and effect through the guarantee period as specified in the General Conditions. All bond premiums shall be at bidder’s cost.

10. **Interpretation of Project Documents.** If any bidder is in doubt as to the true meaning of any part of the Project Documents, or finds discrepancies in, or omissions from the Project Documents, a written request for an interpretation or correction thereof must be submitted to the DISTRICT no later than four (4) days before bid deadline. No requests shall be considered after this time. The bidder submitting the written request shall be responsible for its prompt delivery. Any interpretation or correction of the Project Documents will be made solely at DISTRICT’s discretion and only by written addendum duly issued by the DISTRICT, and a copy of such addendum will be hand delivered or mailed or faxed to each bidder known to have received a set of the Project Documents. No person is authorized to make any oral interpretation of any provision in the Project Documents, nor shall any oral interpretation of Project Documents be binding on the DISTRICT. If there are discrepancies of any kind in the Project Documents, the interpretation of the
DISTRICT shall prevail. Submittal of a bid without a request for clarification shall be incontrovertible evidence that the bidder has determined that the project documents are acceptable and sufficient for bidding and completing the work; that bidder is capable of reading, following and completing the work in accordance with the project documents and that bidder agrees that the project can and will be completed according to the DISTRICT’s timelines and according to the progress schedule to be submitted by the successful bidder incorporating the DISTRICT’s timelines for completion of the project.

11. **Bidders Interested in More Than One Bid.** No person, firm or corporation shall be allowed to make, or file, or be interested in more than one bid for the same work unless alternate bids are specifically called for by the DISTRICT. A person, firm, or corporation that has submitted a subproposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a proposal or quoting prices to other bidders or submitting a bid on the Project.

12. **Award of Contract.** The DISTRICT reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding process. The award of the contract, if made by the DISTRICT, will be by action of the Governing Board and to the lowest responsive and responsible bidder. If two identical low bids are received from responsive and responsible bidders, the DISTRICT will determine which bid will be accepted pursuant to Public Contract Code Section 20117. In the event an award of the contract is made to a bidder, and such bidder fails or refuses to execute the Agreement and provide the required documents within fifteen (15) working days after the notice of award of the contract to bidder, the DISTRICT may award the contract to the next lowest responsive and responsible bidder or reject all bidders.

13. **Alternate Bids.** If alternate bids are called for, the DISTRICT will award the contract to the lowest responsive and responsible bidder in a manner that prevents any information that would identify any of the bidders from being revealed to the DISTRICT before the ranking of all bidders from lowest to highest has been determined.

14. **Competency of Bidders.** In selecting the lowest responsive and responsible bidder, consideration will be given not only to the financial standing but also to the general competency of the bidder for the performance of the Project. By submitting a bid, each bidder agrees that the DISTRICT, in determining the successful bidder and its eligibility for the award, may consider the bidder’s experience and facilities, conduct and performance under other contracts, financial condition, reputation in the industry, and other factors which could affect the bidder’s performance of the Project. To this end, each bid shall be supported by a statement of the bidder’s experience on the form entitled “INFORMATION REQUIRED OF BIDDER.”

The DISTRICT may also consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the work. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by the DISTRICT. In this regard, the DISTRICT may conduct such investigations as the DISTRICT deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications and financial ability of the bidder, proposed subcontractors, and other persons and organizations to do the work to the DISTRICT’s satisfaction within the prescribed time. The DISTRICT reserves the right to reject the bid of any bidder who does not pass any such evaluation to the satisfaction of the DISTRICT.

15. **Bidder's Prequalification.** Only Bid Proposals submitted by Prequalified Bidders will be considered. A Bid Proposal submitted by a Bidder who is not prequalified will be deemed a non-responsive Bid Proposal and will be rejected by the District. A Bidder who has not completed the Prequalification Application and has not been deemed a "Qualified Bidder" must complete the Prequalification Application and submit the Prequalification Application to the District (via the Construction Manager) by the date and in the manner set forth in the Prequalification Application. The failure to submit a completed Prequalification Application on or prior to such date will render the Bid Proposal of the Bidder untimely submitting a completed Prequalification Application to be non-responsive and rejected. If the District determines that any information provided by a Bidder in the Prequalification Application is false or misleading, or is incomplete so as to be false or misleading, the District may reject the Bid Proposal submitted by such Bidder as being non-responsive.
16. **Listing Subcontractors.** Each bidder shall submit, on the form furnished with the Project Documents, a list of the proposed subcontractors on this Project as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100, et seq.). If alternate bids are called for and the bidder intends to use different or additional subcontractors, a separate list of subcontractors must be submitted for each such alternate bid. If the bidder fails to specify a subcontractor for any portion of the work in excess of one half (1/2) of one percent (1%) of the bidder’s total bid, the bidder agrees that he/she is fully qualified to perform that work and agrees to perform that portion of the work. Violation of this requirement (including the procurement of a subcontractor for the Project if no subcontractor is specified) can result in the DISTRICT invoking the remedies of Public Contract Code Sections 4110 and 4111.

17. **Insurance and Workers' Compensation.** The successful bidder shall be required to furnish certificates and endorsements evidencing that the required insurance is in effect. DISTRICT may request that such certificates and endorsements are completed on DISTRICT provided forms. In accordance with the provisions of Section 3700 of the Labor Code, the successful bidder shall secure the payment of compensation to all employees. The successful bidder who has been awarded the contract shall sign and file with DISTRICT prior to performing the work, the Workers’ Compensation Certificate included as a part of the Project Documents. Labor Code Section 1861.

18. **Contractor's License.** If, at the time and date of the contract execution, bidder is not properly licensed to perform the Project in accordance with Division 3, Chapter 9, of the Business and Professions Code and the Project Documents, such bid will be rejected as nonresponsive. (Public Contract Code Section 3300) Pursuant to Business and Professions Code Section 7028.15, no payment shall be made for work or materials under the contract unless and until the Registrar of Contractors verifies to the DISTRICT that the bidder was properly licensed at the time the bid was submitted. Any bidder not so licensed is subject to penalties under the law and the contract will be considered void and DISTRICT shall have the right to bring an action against the unlicensed bidder awarded the contract for recovery of all compensation paid under the contract. (Business and Professions Code Section 7031(b)) If the license classification specified hereinafter is that of a "specialty contractor" as defined in Section 7058 of the Business and Professions Code, the specialty contractor awarded the contract for this work shall construct a majority of the work, in accordance with the provisions of Business and Professions Code Section 7059. The bidder may not use the contractor license of a third party for this bid.

19. **Anti-Discrimination.** In connection with all work performed under this Project, there shall be no unlawful discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, marital status, physical disability, mental disability, or medical condition. The successful bidder agrees to comply with applicable Federal and State laws including, but not limited to, the California Fair Employment and Housing Act, beginning with Government Code Section 12900 and Labor Code Section 1735. In addition, the successful bidder agrees to require like compliance by any subcontractors employed on the Project by such bidder.

20. **Hold Harmless and Indemnification.** The successful bidder awarded the contract will be required to indemnify and hold harmless the DISTRICT, its Governing Board, officers, agents, and employees as set forth in the Agreement.

21. **Substitutions.** Should the bidder wish to request any substitution for the materials, process, service, or equipment specified, the bidder shall be required to comply with Article 30 of the General Conditions.

22. **Surety Qualifications for Bonds.** Bidders shall ensure all surety companies have a minimum rating of "A-VIII," as rated by the current edition of Best's Key Rating Guide, published by A.M. Best Company, Oldwick, New Jersey 08858. Only California admitted surety insurers will be acceptable for the issuance of bonds. (Code of Civil Procedure Section 995.311) DISTRICT shall verify the status of the surety by one of the following ways: (1) printing out information from the website of the California Department of Insurance confirming the surety is an admitted surety insurer and attaching it to the bond, or (2) obtaining a certificate from the county clerk for the county in which the DISTRICT is located that confirms the surety is an admitted surety insurer and attaching it to the bond. Any admitted...
surety insurer who cannot satisfy the minimum rating specified above, but who satisfies the following requirements set forth in Code of Civil Procedure Section 995.660 shall be accepted and approved for the issuance of bonds:

(a) There must be on file in the office of the county clerk, for the county in which the DISTRICT is located, an unrevoked appointment, power of attorney, bylaws, or other instrument, duly certified by the proper authority and attested by the seal of the insurer authorizing the person who executed the bond to do so for and on behalf of the insurer within ten (10) calendar days of the insurer’s receipt of a request to submit such document from the DISTRICT, and an original or certified copy of the document must be submitted to the DISTRICT.

(b) A certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner must be submitted to the DISTRICT within ten (10) calendar days of the insurer’s receipt of a request to submit such document from the DISTRICT.

(c) A certificate from the clerk of the county that the certificate of authority of the insurer has not been surrendered, revoked, cancelled, annulled, or suspended, and in the event it has, whether renewed authority has been granted must be submitted to DISTRICT within ten (10) calendar days of the insurer’s receipt of a request to submit such document from the DISTRICT.

(d) Copies of the insurer’s most recent annual statement and quarterly statement filed with the California Department of Insurance must be submitted to the DISTRICT within ten (10) calendar days of the insurer’s receipt of a request to submit the statements.

23. Liquidated Damages. All work must be completed within the time limits set forth in the Project Documents. It is agreed that damages for the failure to complete the Project described herein within the time limits required are impossible to ascertain. Should the work not be completed within the specified time for completion, the successful bidder awarded the contract shall be liable for liquidated damages, payable to the DISTRICT, in an amount of One Thousand Dollars ($1,000.00) for each consecutive calendar day of delay in completion. Such damages shall be deducted from any payments due or to become due to the successful bidder. Government Code Section 53069.85, Civil Code Section 1671.

24. Drug-Free Workplace Certification. Pursuant to Government Code Sections 8350, et seq., the successful bidder will be required to execute a Drug-Free Workplace Certification upon execution of the Agreement. The bidder will be required to take positive measures outlined in the certification in order to ensure the presence of a drug-free workplace. Failure to abide with the conditions set forth in the Drug-Free Workplace Act could result in penalties including termination of the Agreement or suspension of payment thereunder.

25. Noncollusion Affidavit. In accordance with the provisions of Section 7106 of the Public Contract Code, each bid must be accompanied by a noncollusion affidavit properly notarized.

26. Escrow Agreement. Public Contract Code Section 22300 permits the substitution of securities for any monies withheld by a public agency to ensure performance under a contract. At the request and expense of the successful bidder awarded the contract, securities equivalent to the amount withheld as retention shall be deposited with the DISTRICT, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the successful bidder. The DISTRICT retains the sole discretion to approve the bank selected by the successful bidder to serve as escrow agent. Upon satisfactory completion of the contract, the securities shall be returned to the successful bidder. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The successful bidder shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the successful bidder may request DISTRICT to make payment of earned retentions directly to the escrow agent at the expense of the successful bidder. Also at the successful bidder's expense, the successful bidder may direct investment of the payments into securities, and the successful bidder shall receive interest earned on such investment upon the same conditions as provided for securities deposited by successful bidder. Upon
satisfactory completion of the contract, successful bidder shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300.

The successful bidder who elects to receive interest on monies withheld in retention by the DISTRICT shall, at the request of any subcontractor performing more than five percent (5%) of the successful bidder’s total bid, make that option available to the subcontractor regarding any monies withheld in retention by the successful bidder from the subcontractor. If the successful bidder elects to receive interest on any monies withheld in retention by the DISTRICT, then the subcontractor shall receive the identical rate of interest received by the successful bidder on any retention monies withheld from the subcontractor by the successful bidder, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the successful bidder elects to substitute securities in lieu of retention, then, by mutual consent of the successful bidder and subcontractor, the subcontractor may substitute securities in exchange for the release of monies held in retention by the successful bidder. Public Contract Code Section 22300(d)(1).

The successful bidder wishing to utilize Public Contract Code Section 22300 and enter into an Escrow Agreement shall complete and execute the form Escrow Agreement included in the Project Documents and submit it to the DISTRICT.

27. Change Orders. All change order requests must be submitted in the form set forth in the Project Documents and pursuant to Article 60 of the General Conditions. The amount of allowable charges submitted pursuant to a change order shall be limited to the charges allowed under Article 60 of the General Conditions. Indirect, consequential and incidental costs, project management costs, extended home office and field office overhead, administrative costs and profit and other charges not specifically authorized under Article 60 of the General Conditions will not be allowed.

28. Tobacco-Free Policy. The successful bidder shall agree to enforce a tobacco-free work site.

29. Lead. Pursuant to the Lead-Safe Schools Protection Act (Education Code Sections 32240, et seq.) and other applicable law, the successful bidder shall not use lead-based paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or the modernization or renovation of any existing school facility.

30. The number of executed copies of the Agreement, the Faithful Performance Bond, and the Payment Bond required is THREE (3).
BID FORM

Name of Bidder: ____________________________________________________________

To: South Orange County Community College District, acting by and through its Governing Board, herein called the "DISTRICT."

1. The undersigned Bidder, having become familiarized with all the following documents including but not limited to the Notice Calling for Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractors Form, Information Required of Bidder, all prequalification forms pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Affidavit, Workers’ Compensation Certificate, Faithful Performance Bond, Payment Bond, Agreement, Escrow Agreement, Drug-Free Workplace Certification, Criminal Records Check Certification, Change Order Forms, Shop Drawing Transmittal Form, all insurance requirements, Guarantee forms, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, Disabled Veteran Business Enterprises Certification, if applicable, General Conditions and Supplemental Conditions, if any, Special Conditions, if any, drawings, specifications, and all modifications, addenda and amendments, if any (hereinafter Project Documents), the local conditions affecting the performance of the work and the cost of the work at the place where the work is to be done, hereby proposes and agrees to be bound by all the terms and conditions of the Project Documents and agrees to perform, within the time stipulated, the work, including all of its component parts, and everything required to be performed, and to provide and furnish and pay for any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the work and complete in a good workmanlike manner all of the work required in accordance with laws, codes, regulations, ordinances and any other legal requirements governing the work, in connection with the following:

   Project: ATEP - Hangar 524 - Site Utility Severance and Demolition
   Project No.: Bid No. # 13

all in strict conformity with the Project Documents, including Addenda Nos. ____, _____. ____ and _____, on file at the office of the Director of Facilities Planning and Purchasing of said DISTRICT for the following sums:

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<tr>
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<th>Numeric</th>
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<tbody>
<tr>
<td>BASE BID FOR HANGAR 524 @ ATEP</td>
<td>$__________ /100 $__________</td>
</tr>
<tr>
<td>ALLOWANCE: Refer to Supplemental Conditions</td>
<td>$ Twenty Thousand and no/100________________________</td>
</tr>
<tr>
<td>BID TOTAL (INCLUDING ALLOWANCE)</td>
<td>$__________</td>
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</table>
assumption of all obligations, duties, and responsibilities necessary to the successful completion of the Project, and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the work, and the furnishing of tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform and complete the work, all as per the requirements of the Project Documents, whether or not expressly listed or designated.

2. It is understood that the DISTRICT reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process. Bidder agrees that this bid shall remain open and not be withdrawn for the period specified in the Information for Bidders.

3. The required bid security is attached.

4. The required list(s) of proposed subcontractors is attached hereto, and the undersigned represents and warrants that such list(s) is complete and in compliance with the Subletting and Subcontracting Fair Practices Act. Public Contract Code Sections 4100, et seq.

5. It is understood and agreed that if written notice of the award of a contract is mailed, faxed, or delivered to the bidder, the bidder will execute and deliver to the DISTRICT the Agreement and will also furnish and deliver to the DISTRICT the Faithful Performance Bond and a separate Payment Bond as specified, and certificates and endorsements of insurance, the Workers’ Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, within 10 working days of the notice of award of the contract, or as otherwise requested in writing by the DISTRICT. It is understood that should bidder fail or refuse to return these documents as required by the DISTRICT, the bid security shall be forfeited to the DISTRICT. The bidder further agrees that the work shall be commenced by the bidder, if awarded the contract, on or before the fifth day after receiving the DISTRICT's Notice to Proceed, and shall be completed by the bidder in the time specified by the DISTRICT.

6. Communications conveying notice of award of the contract, requests for additional information or other correspondence should be addressed to the bidder at the address stated below.

7. The name(s) of all persons interested in the bid as principals are as follows:

8. In submitting this bid, the bidder offers and agrees that if the bid is accepted, it will assign to DISTRICT all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Business & Professions Code Section 16700, et seq.) arising from purchases of goods, materials, or services by the bidder for sale to the DISTRICT pursuant to the bid. Such assignment shall be made and become effective at the time the DISTRICT tenders final payment under the contract. (Public Contract Code Section 7103.5; Government Code Section 4450, 4451 and 4552).

9. The undersigned hereby warrants that the bidder has an appropriate license, License No. ______________, Class _____, at the time of the bid opening, that such license entitles bidder to provide the work, that such license will be in full force and effect throughout the duration of performance of this Project. Bidder shall be nonresponsive if the Bidder is not licensed as required by the DISTRICT at the time of the bid opening. Any and all subcontractors to be employed by the undersigned shall have appropriate licenses at the time of the bid opening.

10. The bidder hereby certifies that it is, and at all times during the performance of work hereunder shall be, in full compliance with the provisions of the Immigration Reform and Control Act of 1986 ("IRCA") in the hiring of its
employees, and the bidder shall indemnify, hold harmless and defend the DISTRICT against any and all actions, proceedings, penalties or claims arising out of the bidder's failure to comply strictly with the IRCA.

11. It is understood and agreed that if requested by the DISTRICT, the bidder shall furnish a notarized financial statement, references, and other information required by the DISTRICT sufficiently comprehensive to permit an appraisal of bidder's ability to perform the Project.

12. The undersigned hereby warrants that all work, except work of a maintenance period, shall be completed within 90 consecutive calendar days from the date specified on the Notice to Proceed issued by the District. Time is of the essence. The undersigned agrees that failure to complete the work within the time set forth herein will result in the imposition of liquidated damages for each consecutive calendar day of delay in the amount of One Thousand Dollars ($1,000.00). (Government Code Section 53069.85)

13. The required non-collusion affidavit properly notarized is attached as required by Public Contract Code Section 7106. Bidder understands and agrees that failure to submit a completed and signed affidavit will render the bidder automatically nonresponsive.

14. It is understood and agreed that all change order requests must be submitted in the form set forth in the Project Documents and pursuant to Article 60 of the General Conditions. The amount of allowable charges submitted pursuant to a change order shall be limited to the charges allowed under Article 60 of the General Conditions. Indirect, consequential and incidental costs, project management costs, extended home office and field office overhead, administrative costs and profit and other charges not specifically authorized under Article 60 of the General Conditions will not be allowed.

15. The Information Required of Bidder form has been fully completed and is attached hereto.
The undersigned hereby declares that all of the representations of this bid are made under penalty of perjury under the laws of the State of California.

**Individual**

Name: ____________________________

Signed by: ________________________

Print Name: _______________________

Date: ____________________________

Business Address: __________________

__________________________________

Telephone: _________________________

*******************************************************************************

**Partnership**

Name: ____________________________

Signed by: ________________________

Print Name: _______________________

Date: ____________________________

Business Address: __________________

__________________________________

Telephone: _________________________

*******************************************************************************

**Corporation**

Name: ____________________________

(a _________ Corporation¹)

________________________________________________________________________

¹ A corporation awarded the contract shall furnish evidence of its corporate existence and evidence that the officer signing the Agreement and bonds is duly authorized to do so.
Business Address: ________________________________

______________________________________________

Telephone: ________________________________

Signed by: __________________________, President, Date: __________

Print Name: __________________________ President

Signed by: __________________________, Secretary, Date: __________

Print Name: __________________________, Secretary

[Seal]
Joint Venture: Name: ________________________________

Signed by: ________________________________, Joint Venture

Print Name: ________________________________

Date: ________________________________

Business Address: ________________________________

__________________________________________

Telephone: ________________________________

Other Parties to If an individual: ________________________________

Joint Venture: (Name)

Signed by: ________________________________

Print Name: ________________________________

Date: ________________________________

Doing Business as: ________________________________

Business Address: ________________________________

__________________________________________

Telephone: ________________________________
If a Partnership: ________________________________

(Name)

Signed by: ________________________________, Partner

Print Name: ________________________________

Date: ________________________________

Business Address: ________________________________

______________________________________________

Telephone: ________________________________

If a Corporation: ________________________________

(a________________ Corporation)

Signed By: ________________________________ Date: ______________

Print Name: ________________________________

Title: ________________________________

Date: ________________________________

Business Address: ________________________________

______________________________________________

Telephone: ________________________________
Bid Bond No.: _____

BID BOND

KNOW ALL PERSONS BY THESE PRESENT, that we______________________________,
as Principal, and ________________________ as Surety, a California admitted surety insurer, are held
and firmly bound unto the South Orange County Community College District, hereinafter called the DISTRICT, in the
sum of ______ PERCENT (___%) OF THE TOTAL AMOUNT OF THE BID of the Principal submitted to the said
DISTRICT for the work described below for the payment of which sum in lawful money of the United States, well and
truly to be made, we jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is such that whereas the Principal has submitted the accompanying bid dated
, 200__, for ________________________________

______________________________

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the
opening of the same, or, if no period be specified, within sixty (60) days after said opening; and if the Principal is awarded
the contract, and shall within the period specified therefore, or, if no period be specified, within 10 working days after the
notice of award of the contract, or as otherwise requested in writing by the DISTRICT, enter into a written contract with
the DISTRICT, in accordance with the bid as accepted and give bonds with good and sufficient surety or sureties, as may
be required for the faithful performance and proper fulfillment of such contract and for the payment for labor and
materials used for the performance of the contract, furnish certificates and endorsements evidencing the required
insurance is in effect and furnish and deliver to the DISTRICT the Workers’ Compensation Certificate, Drug-Free Work
Place Certification, the Criminal Records Check Certification, Contractor’s Certificate Regarding Non-Asbestos
Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, then the above
obligation shall be void and of no effect, otherwise the bond amount shall be forfeited to the DISTRICT.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition
to the terms of the contract or the call for bids, or to the work to be performed thereunder, or the specifications
accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any
such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to
the specifications.

In the event suit is brought upon this bond by the DISTRICT and judgment is recovered, the Surety shall pay all
costs incurred by the DISTRICT in such suit, including reasonable attorney's fees to be fixed by the court.

IN WITNESS HEREOF, the parties have executed this bond under their several seals this __ day of ___, 200__,
the name and corporate seal of each corporate party being hereto affixed and duly signed by its undersigned authorized
representative.

(Corporate Seal of
Principal, if
Corporation)

Principal (Proper Name of Bidder)
DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 et. seq.) and any amendments thereof, each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the bidder (prime contractor) in or about the construction of the work or improvement to be performed under this contract or a subcontractor licensed by the State of California who, under subcontract to the bidder (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 one percent of the bidder's (prime contractor's) total bid and (b) the portion of the work which will be done by each subcontractor. The bidder (prime contractor) shall list only one subcontractor for each such portion as is defined by the bidder (prime contractor) in this bid.

If a bidder (prime contractor) fails to specify a subcontractor or if a bidder (prime contractor) specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the bidder's (prime contractor's) total bid, bidder shall be deemed to have agreed that bidder is fully qualified to perform that portion, and that bidder alone shall perform that portion. Violation of this requirement (including the procurement of a subcontractor for the Project if no subcontractor is specified) can result in the DISTRICT invoking the remedies of Public Contract Code Sections 4110 and 4111.

No bidder (prime contractor) whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the bidder's (prime contractor's) total bid as to which the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act. Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the bidder's (prime contractor's) total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, only after a finding reduced to writing as a public record of the DISTRICT awarding this contract setting forth the facts constituting the emergency or necessity.
<table>
<thead>
<tr>
<th>Type of Trade, Labor or Service</th>
<th>Name &amp; License # of Subcontractor, License Expiration Date (Indicate if a Disabled Veteran Business Enterprise)</th>
<th>Complete Address (Name of City is not sufficient) and Telephone No.</th>
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Bidder agrees that within twenty-four (24) hours of the bid opening, Bidder shall provide the DISTRICT with the license number (if applicable), expiration date of license, complete address and telephone numbers of each listed subcontractor if such information is not available at the time of the bid opening.
Dated: ____________________

Name of Bidder

By: ________________________

(Signature of Bidder)

Print Name: ____________________

Address: _______________________

Telephone: ______________________

FAX: ________________________
INFORMATION REQUIRED OF BIDDER

The Bidder shall furnish all the following information. Bidder shall carefully read and answer all questions to ensure completeness and accuracy. Failure to comply with this requirement may cause rejection of the bid. Additional sheets may be attached if necessary. "You" or "your" as used herein refers to the bidder and any of its owners, officers, directors, shareholders, principals, responsible managing officer (RMO) or responsible managing employee (RME). DISTRICT has discretion to request additional information depending on the Project.

(1) Bidder name and address (Post Office Box Number not sufficient):

________________________________________________________

________________________________________________________

________________________________________________________

(2) Telephone: ____________________ Fax No.: ____________________

Electronic Mail: __________________________________________

(3) Individual _____ Partnership ________ Corporation ________ Joint Venture ________ (check one)

(4) Bidder’s License No. ____________________________________

Name of License holder ____________________________________

(5) Have you ever been licensed under a different name or different license number?

Yes ___ No ___ If “Yes,” give name and license number.

________________________________________________________

________________________________________________________

(6) Names and titles of all your owners, officers, principals, responsible managing officers and responsible managing employees:

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<th>Name</th>
<th>Title</th>
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(7) Number of years as a contractor in this type of construction work: _______________________

Schools Legal Service of O.C.  
May 2002
(8) Person who inspected work site:

Name and Title: ________________________________

Date of Inspection: ________________________________

(9) How many years experience have you had in school construction work?

(a) as a general contractor? ________________________________

(b) as a subcontractor? ________________________________

(10) How many years experience have you had in public construction work?

(a) as a general contractor? ________________________________

(b) as a subcontractor? ________________________________

(11) Have you ever been terminated from a school or any public construction project prior to the completion of the project? Yes ______ No ________ If the answer is “Yes,” give dates, names and addresses of school/public agency and details.

________________________________________________________________________

________________________________________________________________________

(12) Have you ever been barred from bidding on any school or public construction project? Yes ____ No ____

If the answer is “Yes,” give dates, names and addresses of school/public agency and details.

________________________________________________________________________

________________________________________________________________________

(13) Have you ever defaulted on any school or public construction project that resulted in a claim to a surety? Yes ______ No ________ If the answer is “Yes,” give dates, names and addresses of school/public agency and details.

________________________________________________________________________

________________________________________________________________________

(14) Have you been assessed damages (i.e., liquidated damages) for any public construction project in the past ten (10) years? Yes ________ No ________ If the answer is “Yes,” give dates, names, and addresses of public agency and details.

________________________________________________________________________

________________________________________________________________________
(15) Have you ever brought any claim(s) against a public agency? Yes _____ No ____ If the answer is “Yes,” please explain in detail name of public agency, nature of the claim and outcome.

(16) Have you ever failed to complete a school or public construction project in the last ten (10) years? Yes _______ No ________ If the answer is “Yes,” provide name of public agency and details

(17) Have you been in litigation or arbitration or dispute of any kind on a question or questions relating to a public construction project during the past ten (10) years? Yes _____ No ____ If the answer is “Yes,” provide name of public agency and details.

(18) List the names, addresses and telephone numbers of three Architects or Engineers whose jobs you have worked on in the past five (5) years.

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<tr>
<th>Name</th>
<th>Address</th>
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(19) Do you now or have you ever had any direct or indirect business, financial or other connection with any officer, employee or consultant of the DISTRICT or Architect?

Yes _______ No ________ If so, please elaborate.

(20) List at least five (5) of your most recent school construction projects.
(2)__________________________

(3)__________________________

(4)__________________________

(5)__________________________

(21) Are you currently under contract for another project? Yes ________ No ________ If the answer is “Yes,” please provide the following information:

(a) Project Number 1:
Name of Project: ________________________________
Detailed Description: ________________________________

______________________________________________

Name of Project Owner: ________________________________
Contract Amount: ________________________________
Completion Date: ________________________________

(b) Project Number 2:
Name of Project: ________________________________
Detailed Description: ________________________________

______________________________________________

Name of Project Owner: ________________________________
Contract Amount: ________________________________
Completion Date: ________________________________

(c) Project Number 3:
Name of Project: ________________________________
Detailed Description: ________________________________

______________________________________________

Name of Project Owner: ________________________________
(d) Project Number 4:

Name of Project: ___________________________________________________________

Detailed Description: ________________________________________________________

Name of Project Owner: _____________________________________________________

Contract Amount: __________________________________________________________

Completion Date: __________________________________________________________

(e) Project Number 5:

Name of Project: __________________________________________________________

Detailed Description: ________________________________________________________

Name of Project Owner: _____________________________________________________

Contract Amount: __________________________________________________________

Completion Date: __________________________________________________________

(22) Are there projects not listed above that will be undertaken during the duration of DISTRICT’s Project? Yes ______ No ________ If the answer is “Yes,” please provide the following information:

(a) Project Number 1:

Name of Project: __________________________________________________________

Detailed Description: ________________________________________________________

Name of Project Owner: _____________________________________________________

Contract Amount: __________________________________________________________
Completion Date: _______________________________________________________

(b) Project Number 2:

Name of Project: _______________________________________________________

Detailed Description: _________________________________________________

_____________________________________________________________________

Name of Project Owner: _______________________________________________

Contract Amount: _____________________________________________________

Completion Date: _____________________________________________________

(c) Project Number 3:

Name of Project: _____________________________________________________

Detailed Description: _________________________________________________

_____________________________________________________________________

Name of Project Owner: _______________________________________________

Contract Amount: _____________________________________________________

Completion Date: _____________________________________________________

(d) Project Number 4:

Name of Project: _____________________________________________________

Detailed Description: _________________________________________________

_____________________________________________________________________

Name of Project Owner: _______________________________________________

Contract Amount: _____________________________________________________

Completion Date: _____________________________________________________

(e) Project Number 5:

Name of Project: _____________________________________________________

Detailed Description: _________________________________________________

_____________________________________________________________________

Schools Legal Service of O.C.  Bid Forms
May 2002  Page 28
Name of Project Owner:____________________________________________________

Contract Amount:________________________________________________________

Completion Date:__________________________________________________________

(23) Additional information required:________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

(24) List of References - Public construction projects of similar nature in a school/community college/university within the last five (5) years. DISTRICT has discretion to require more than five (5) references.

1. Name:______________________________________________________________

Address and Telephone:________________________

__________________________________________________________

Contact Person:_______________________________________________________

Description of Project:_______________________________________________

Dates of commencement and completion of Project:_______________________

Contract Amount:______________________________________________________

Architect:____________________________________________________________

Architect’s Address and Telephone:_______________________________________

__________________________________________________________

DSA or public agency inspector:____________________________________________

Address and Telephone:__________________________________________________

__________________________________________________________

2. Name:______________________________________________________________

Address and Telephone:__________________________________________________
| Contact Person: | ________________________________ |
| Description of Project: | ____________________________________ |
| Dates of commencement and completion of Project: | ________________________________ |
| Contract Amount: | ________________________________ |
| Architect: | ________________________________ |
| Architect’s Address and Telephone: | ____________________________________ |
| DSA or public agency inspector: | ________________________________ |
| Address and Telephone: | ____________________________________ |

3. **Name:**

| Contact Person: | ________________________________ |
| Description of Project: | ____________________________________ |
| Dates of commencement and completion of Project: | ________________________________ |
| Contract Amount: | ________________________________ |
| Architect: | ________________________________ |
| Architect’s Address and Telephone: | ____________________________________ |
| DSA or public agency inspector: | ________________________________ |
| Address and Telephone: | ____________________________________ |
4. Name:___________________________________________________________
   Address and Telephone: ___________________________________________
   Contact Person: _________________________________________________
   Description of Project: ___________________________________________
   Dates of commencement and completion of Project: 
   ___________________________  ___________________________
   Contract Amount: _______________________________________________
   Architect: _______________________________________________________
   Architect’s Address and Telephone: _________________________________
   ___________________________  ___________________________
   DSA or public agency inspector: __________________________________
   Address and Telephone: __________________________________________
   ___________________________  ___________________________

5. Name:___________________________________________________________
   Address and Telephone: ___________________________________________
   Contact Person: _________________________________________________
   Description of Project: ___________________________________________
   Dates of commencement and completion of Project: 
   ___________________________  ___________________________
   Contract Amount: _______________________________________________
   Architect: _______________________________________________________
   Architect’s Address and Telephone: _________________________________
   ___________________________  ___________________________
   DSA or public agency inspector: __________________________________
Address and Telephone:__________________________________________________________

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing responses to the Information Required of Bidder are true and correct.

________________________________________
Signature

________________________________________
Print Name

________________________________________
Title

________________________________________
Date

Note: DISTRICT may wish to expand the scope of the “Information Required of Bidder” form and include additional questions.
NONCOLLUSION AFFIDAVIT

(State of California)

(County of ____________________)

, being first duly sworn, deposes and says that he or she is ______________________
of ______________________, the party making the foregoing bid, that the 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.

______________________________
Signature of Bidder

NOTARY FOR NONCOLLUSION AFFIDAVIT

Subscribed and sworn to (or affirmed) before me this ______ day of ________, 20____.

______________________________
Signature of Notary

[SEAL OF NOTARY]

Typed Name of Notary
"Every employer except the state shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.

(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer or as one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees.

(c) For any county, city, city and county, municipal corporation, public district, public agency or any political subdivision of the state, including each member of a pooling arrangement under a joint exercise of powers agreement (but not the state itself), by securing from the Director of Industrial Relations a certificate of consent to self-insure against workers' compensation claims, which certificate may be given upon furnishing proof satisfactory to the director of ability to administer workers' compensation claims properly, and to pay workers' compensation claims that may become due to its employees. On or before March 31, 1979, a political subdivision of the state which, on December 31, 1978, was uninsured for its liability to pay compensation, shall file a properly completed and executed application for a certificate of consent to self-insure against workers' compensation claims. The certificate shall be issued and be subject to the provisions of Section 3702."

I am aware of the provisions of Labor Code Section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

Name of the Contractor

By: __________________________

Signature

______________________________

Print Name

______________________________

Title

______________________________

Date

(In accordance with Article 5 [commencing at Section 1860], Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under the contract.)
FAITHFUL PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENT:

WHEREAS, the SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT of Orange County, California (hereinafter referred to as "DISTRICT"), awarded ____________________________ (hereinafter referred to as the "Contractor/Principal") the contract for the work described as

__________________________

NOW, THEREFORE, we the undersigned Contractor, as Principal, and Surety, a California admitted surety insurer are held and firmly bound to the DISTRICT for one hundred percent (100%) of the total amount payable by the DISTRICT under the terms of the contract awarded by the DISTRICT to the Contractor/Principal, lawful money of the United States of America, for payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bonded Contractor/Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions, and agreements in the said contract which is attached hereto and incorporated herein by reference and any alteration and/or amendments thereof, made as therein provided, including, but not limited to, the provisions regarding contract duration and liquidated damages, all within the time and in the manner therein designated in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the contract, the above obligation shall hold good for a period of One (1) year(s) after the acceptance of the work by DISTRICT, during which time if Contractor/Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the DISTRICT from loss or damage made evident during the period of One (1) year(s) from the date of completion of the work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. The obligation of Surety hereunder shall continue so long as any obligation of Contractor remains.

Whenever Contractor/Principal shall be, and is declared by the DISTRICT to be, in default under the contract, the DISTRICT having performed the DISTRICT's obligations thereunder, the Surety shall promptly remedy the default, or shall promptly:

1. Complete the contract in accordance with its terms and conditions; or

2. Obtain a bid or bids for completing the contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a contract between such bidder and the DISTRICT, and make available as work progresses sufficient funds to pay the cost of completion less the balance of the contract price, but not exceeding, including other costs
and damages for which Surety may be liable hereunder, the amount set forth above. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor/Principal by the DISTRICT under the contract and any modifications thereto, less the amount previously properly paid by the DISTRICT to the Contractor/Principal.

Surety expressly agrees that the DISTRICT may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal. Surety shall not utilize Contractor/Principal in completing the contract nor shall Surety accept a bid from Contractor/Principal for completion of the work if the DISTRICT, when declaring the Contractor/Principal in default, notifies Surety of the DISTRICT's objection to Contractor's/Principal's further participation in the completion of the work.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the DISTRICT named herein or the successors or assigns of the DISTRICT. Any suit under this bond must be instituted within the applicable statute of limitations period.

FURTHER, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or modification of the Project documents, or of the work to be performed thereunder, shall in any way affect its obligations on this bond; and it does hereby waive notice of any change, extension of time, alteration or modification of the Project documents or of work to be performed thereunder.

Contractor/Principal and Surety agree that if the DISTRICT is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay DISTRICT's reasonable attorney's fees and costs incurred, with or without suit, in addition to the above amount.
IN WITNESS WHEREOF, we have hereunto set our hands and seals this __________ day of ________, 20__.  

CORPORATE SEAL, IF APPLICABLE, AND NOTARIAL ACKNOWLEDGEMENT OF CONTRACTOR

By: _____________________________________________________________

Signature

___________________________

Print Name and Title

SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY

___________________________

Surety

By: _____________________________________________________________

Signature

(Mailing Address, Telephone No. and Facsimile No. of Surety)

___________________________

Print Name and Title

________________________________________________________________

________________________________________________________________

(Attach Attorney-in-Fact Certificate and Required Acknowledgement)
PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENT:

WHEREAS, the SOUTH ORANGE COUNTY COMMUNITY COLLEGE DISTRICT of Orange County, California ("hereinafter referred to as DISTRICT"), has awarded to ______________, hereinafter referred to as the "Contractor/Principal" a contract for the work described as ________________.

WHEREAS, said Contractor/Principal is required by Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 3247) of the California Civil Code to furnish a bond in connection with said contract;

NOW, THEREFORE, we, the Contractor/Principal and ________________ , as Surety, a California admitted surety insurer, are held firmly bound unto the DISTRICT for one hundred percent (100%) of the total amount payable by the DISTRICT under the terms of the contract awarded by the DISTRICT to the Contractor/Principal lawful money of the United States of America for the payment of which sum 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 said Contractor/Principal, his/her or its heirs, executors, administrators, successors, or assigns, or a subcontractor, shall fail to pay any person or persons named in Civil Code Section 3181 or fail to pay for any materials, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind, or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Section 13020 of the Unemployment Insurance Code with respect to work and labor thereon of any kind, then said Surety will pay for the same, in or to an amount not exceeding the amount hereinabove set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fees as shall be fixed by the court, awarded and taxed as provided in Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 3247) of the California Civil Code.

This bond shall inure to the benefit of any of the persons named in Section 3181 of the California Civil Code, so as to give a right of action to such person or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement hereinabove described or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement hereinabove described, nor by any rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and
under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the DISTRICT and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 3110 and 3112 of the California Civil Code, and has not been paid the full amount of his/her or its claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

Any claims under this bond may be addressed to:

__________________________________________________________________________
(Name and address of Surety)

__________________________________________________________________________
(Name and address of agent or representative in California, if different from above)

__________________________________________________________________________
(Telephone and facsimile number of Surety or agent or representative in California)
IN WITNESS HEREOF, we have hereto set our hands and seals on this ______ day of ________, 20

______________________________
Contractor/Principal

By: ____________________________
Signature

Print Name and Title

______________________________
Surety

By: ____________________________
Signature

Print Name and Title

(Mailing Address, Telephone and
Facsimile No. of Surety)

______________________________
______________________________

(Attach Attorney-in-Fact Certificate and
Required Acknowledgement)
AGREEMENT

THIS AGREEMENT, dated the ______ day of __________, 20__, in the County of Orange, State of California, is by and between South Orange County Community College District, (hereinafter referred to as "DISTRICT"), and ____________________________, (hereinafter referred to as "CONTRACTOR").

The DISTRICT and the CONTRACTOR, for the consideration stated herein, agree as follows:

1. CONTRACTOR agrees to complete the Project known as ______________________________ according to all the terms and conditions set forth in the Project Documents, including but not limited to the Notice Calling For Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractors, Information Required of Bidders, all prequalification forms submitted pursuant to Public Contract Code Section 20111.5, if any, Non-collision Affidavit, Workers' Compensation Certificate, Faithful Performance Bond, Payment Bond, Escrow Agreement, if applicable, Drug-Free Workplace Certification, Change Orders, Shop Drawing Transmittals, Insurance Certificates, and all modifications, addenda and amendments thereto by this reference incorporated herein. The Project Documents are complementary, and what is called for by any one shall be as binding as if called for by all.

2. CONTRACTOR shall perform within the time set forth in Paragraph 4 of this Agreement everything required to be performed, and shall provide, furnish and pay for all the labor, materials, necessary tools, expendable equipment, and all taxes, utility and transportation services required for construction of the Project. All of said work shall be performed and completed in a good workmanlike manner in strict accordance with the drawings, specifications and all provisions of this Agreement as hereinafter defined and in accordance with applicable laws, codes, regulations, ordinances and any other legal requirements governing the Project. The CONTRACTOR shall be liable to the DISTRICT for any damages arising as a result of failure to fully comply with this obligation, and the CONTRACTOR shall not be excused with respect to any failure to so comply by any act or omission of the Architect, Engineer, Inspector, Division of State Architect, or representative of any of them, unless such act or omission actually prevents the CONTRACTOR from fully complying with the requirements of the Project Documents, and unless the CONTRACTOR protests at the time of such alleged prevention that the act or omission is preventing the CONTRACTOR from fully complying with the Project Documents. Such protest shall not be effective unless reduced to writing and filed with the DISTRICT within three (3) working days of the date of occurrence of the act or omission preventing the CONTRACTOR from fully complying with the Project Documents.

3. DISTRICT shall pay to the CONTRACTOR, as full consideration for the faithful performance of this Agreement, subject to any additions or deductions as provided in the Project Documents, the sum of ____________________________ Dollars ($_____________)

4. The work shall be commenced on or before the ___________ (______) day after receiving the DISTRICT'S Notice to Proceed and shall be completed within ______________ (______) consecutive calendar days from the date specified in the Notice to Proceed.

5. **Time is of the essence.** If the work is not completed in accordance with Paragraph 4 above, it is understood that the DISTRICT will suffer damage. It being impractical and infeasible to determine the amount of
actual damage, in accordance with Government Code Section 53069.85, it is agreed that CONTRACTOR shall pay to DISTRICT as fixed and liquidated damages, and not as a penalty, the sum of_______Dollars($_______) for each calendar day of delay until work is completed and accepted. Time extensions may be granted by the DISTRICT as provided in Article 64 of the General Conditions. Liquidated damages shall be imposed as set forth in Article 64 of the General Conditions.

6. Termination for Cause or Non-appropriation. In the event CONTRACTOR defaults in the performance of the Agreement as set forth in General Conditions Article 13(a) or if there is a non-appropriation of funds or insufficient funds as set forth in General Conditions Article 13(d), then this Agreement shall terminate or be suspended as set forth in General Conditions Article 13.

Termination for Convenience. DISTRICT has discretion to terminate this Agreement at any time and require CONTRACTOR to cease all work on the Project by providing CONTRACTOR written notice of termination specifying the desired date of termination. Upon receipt of written notice from DISTRICT of such termination for DISTRICT’s convenience, CONTRACTOR shall:

(i) Cease operations as directed by DISTRICT in the notice;

(ii) Take any actions necessary, or that DISTRICT may direct, for the protection and preservation of the work; and

(iii) Not terminate any insurance provisions required by the Project Documents.

In case of such termination for DISTRICT’s convenience, CONTRACTOR shall be entitled to receive payment from DISTRICT for work satisfactorily executed and for proven loss with respect to materials, equipment, and tools, including overhead and profit for that portion of the work completed. In the case of Termination for Convenience, DISTRICT shall have the right to accept assignment of subcontractors. The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the DISTRICT.

7. The CONTRACTOR agrees to and does hereby indemnify and hold harmless the DISTRICT, its Governing Board, officers, agents, and employees from every claim or demand made, and every liability, loss, damage, or expense, of any nature whatsoever, which may be incurred by reason of:

(a) Any injury to or death of any person(s) or damage to, loss or theft of any property sustained by the CONTRACTOR or any person, firm or corporation employed by the CONTRACTOR, either directly or by independent contract, upon or in connection with the work called for in this AGREEMENT, except for liability resulting from the sole active negligence, or willful misconduct of the DISTRICT.

(b) Any injury to or death of any person(s) or damage, loss or theft of any property caused by any act, neglect, default or omission of the CONTRACTOR, or any person, firm, or corporation employed by the CONTRACTOR, either directly or by independent contract, arising out of, or in any way connected with the work covered by this Agreement, whether said injury or damage occurs either on or off DISTRICT property, if the liability arose due to the negligence or willful misconduct of anyone employed by the CONTRACTOR, either directly or by independent contract,

The CONTRACTOR, at CONTRACTOR’S own expense, cost, and risk shall defend any and all actions, suits, or other proceedings that may be brought or instituted against the DISTRICT, its Governing Board, officers, agents or employees, on any such claim, demand or liability, and shall pay or satisfy any judgment that may be rendered...
against the DISTRICT, its Governing Board, officers, agents or employees in any action, suit or other proceedings as a result thereof.

To the fullest extent permitted by law, the CONTRACTOR, at the CONTRACTOR’s sole cost and expense, agrees to fully defend, indemnify and hold harmless, the DISTRICT, including but not limited to any of its governing board members, officers, employees, Construction Manager, Architect, and all other Agents and Representatives, from and against any and all claims, actions, demands, costs, judgments, liens, penalties, liabilities, damages, losses, anticipated losses of revenues, and expenses, including any fees of accountants, attorneys or other professionals, arising out of, in connection with, resulting from or related to, or claimed to be arising out of, in connection with, resulting from or related to any act or omission by the CONTRACTOR or any of its officers, agents, employees, subcontractors, sub-subcontractors, any person performing any of the work pursuant to a direct or indirect contract with the CONTRACTOR or individual entities comprising the CONTRACTOR, in connection with or relating to, or claimed to be in connection with or relating to the work, this Agreement, or the Project, including but not limited to any costs or liabilities arising out of or in connection with:

(a) failure to comply with any applicable law, statute, code, ordinance, regulation, permit or orders;
(b) any misrepresentation, misstatement or omission with respect to any statement made in the Project Documents or any document furnished by the CONTRACTOR in connection therewith;
(c) any breach of duty, obligation or requirement under the Project Documents;
(d) any failure to coordinate the work of other contractors;
(e) any failure to provide notice to any party as required under the Project Documents;
(f) any failure to act in such a manner as to protect the DISTRICT and the Project from loss, cost, expense or liability; or
(g) any failure to protect the property of any utility company or property owner.

This indemnity shall survive termination of the contract or final payment thereunder. This indemnity is in addition to any other rights or remedies which the DISTRICT may have under the law or under the Project Documents. In the event of any claim or demand made against any party which is entitled to be indemnified hereunder, the DISTRICT may in its sole discretion reserve, retain or apply any monies due to the CONTRACTOR under the Project Documents for the purpose of resolving such claims; provided, however, that the DISTRICT may release such funds if the CONTRACTOR provides the DISTRICT with reasonable assurance of protection of the DISTRICT’s interests. The DISTRICT shall in its sole discretion determine whether such assurances are reasonable.

8. CONTRACTOR shall take out, prior to commencing the work, and maintain, during the life of this Agreement, and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain the insurance coverages set forth below and in Articles 16, 17, 18 and 19 of the General Conditions. CONTRACTOR agrees to provide all evidences of coverage required by DISTRICT including certificates of insurance and endorsements.

Public Liability Insurance for injuries including accidental death, to any one person in an amount not less than $2,000,000
Subcontractors of every tier $1,000,000

and
Subject to the same limit for each person on account of one accident,
in an amount not less than $2,000,000

Subcontractors of every tier $1,000,000

Property Damage Insurance
in an amount not less than $2,000,000

Subcontractors of every tier $1,000,000

Course of Construction
Insurance without exclusion or limitation in an
amount not less than $2,000,000

Excess Liability Insurance (Contractor only) $2,000,000

Insurance Covering Special Hazards: The following special hazards shall be covered by rider or riders to above-mentioned public liability insurance or property damage insurance policy or policies of insurance, or by special policies of insurance in amounts as follows:

Automotive and truck where operated in amounts as above

Material hoist where used in amounts as above
Waiver Of Subrogation

Contractor waives (to the extent permitted by law) any right to recover against the District, and its respective elected officials, officers, employees, agents, and representatives for damages to the Work, any part thereof, or any and all claims arising by reason of any of the foregoing, but only to the extent that such damages and/or claims are covered by property insurance and only to the extent of such coverage (which shall exclude deductible amounts) actually carried by the District.

The provisions of this section are intended to restrict each party to recovery against insurance carriers only to the extent of such coverage and waive fully and for the benefit of each, any rights and/or claims which might give rise to a right of subrogation in any insurance carrier. The District and the Contractor shall each obtain in all policies of insurance carried by either of them, a waiver by the insurance companies there under of all rights of recovery by way of subrogation for any damages or claims covered by the insurance.

Additional Insured Endorsement Requirements.

Pollution Legal Liability Insurance Terms

The Contractor shall obtain at its sole cost and expense and maintain in effect from the inception of the Contract until the District’s filing of a Notice of Completion and with an extended reporting period of not less than five (5) years after the Notice of Completion, Pollution Legal Liability Insurance which provided financial protection and assurance for benefit of the District, for all claims, losses, expenses, and costs related to or arising from pollution conditions, including those related to asbestos containing materials, lead based paint, PCB’s and petroleum products and their derivatives that are creates, released or conveyed through the Contractor’s or the Contractor’s agents’ activities and performance under the contract, including negligence or failure to perform project.

Contractor shall provide to the District and the City of Tustin within ten (10) working days after the Notice of Award of the contract evidence of the aforementioned insurance with insurer endorsements, which must meet the requirements of this Article. An Acord Certificate will be accepted solely as evidence of the name of the insurers and the amounts of insurance. Failure to comply with these requirements will result in annulment of the award, forfeiture of the proposal guarantee, and the District will pursue award to the next qualified responsive bidder. Contractor is advised that insurance requirements are non-negotiable and the District will not consider waiving insurance requirements. There are no exceptions.

Contractor shall provide District and the City of Tustin with a Certificate of Insurance form which evidences the required insurance. This certificate shall be submitted with the contract documents and shall cover risks associated with personal injury, property damage, defense costs, and remediation costs, in an aggregate amount of not less than $5,000,000.00 and with a self-insured retention amount not in excess of $100,000.00 per claim. Such insurance contract shall name the District, the City of Tustin, the Tustin Public Financing Authority, and the Tustin Community Redevelopment Agency and the Department of the Navy (only for those portions of the project within the boundaries of the properties listed as “Lease – LIFOC”) as additional insured, without any limitations on coverage different from those provided for the Contractor. Such policy shall provide that the carrier waives any right of subrogation against the City of Tustin, the Tustin Public Financing Authority, and the Tustin Community Redevelopment Agency and the Department of the Navy. Such policy shall not be cancellable by the Contractor without the prior written consent of the District and the City of Tustin, and shall have the premium paid at inception and 100 percent earned at that time. Contractor shall provide evidence of its ability to satisfy multiple self-insured retention amounts (Multiple SIRs would be the SIR for each claim, so if there were 5 claims, the Contractor would have to satisfy the $100,000.00 SIR 5 times).
The Contractor shall name, on any policy of insurance required the District, their officers, employees, Construction Manager, Architect, and all other Agents and Representatives as additional insureds. Subcontractors and shall name the Contractor, the District, their officers, employees, Construction Manager, Architect, and all other Agents and Representatives as additional insureds. The Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The insurance provided by the Contractor must be designated in the policy as primary to any insurance obtained by the District. The amount of the insurer’s liability shall not be reduced by the existence of such other insurance.

9. Public Contract Code Section 22300 permits the substitution of securities for any retention monies withheld by the DISTRICT to ensure performance under this Agreement. At the request and expense of the CONTRACTOR, securities equivalent to the monies withheld shall be deposited with the DISTRICT, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the CONTRACTOR. The DISTRICT retains the sole discretion to approve the bank selected by the CONTRACTOR to serve as escrow agent. Upon satisfactory completion of the Agreement, the securities shall be returned to the CONTRACTOR. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the CONTRACTOR may request DISTRICT to make payment of earned retention monies directly to the escrow agent at the expense of the CONTRACTOR. Also at the CONTRACTOR's expense, the CONTRACTOR may direct investment of the payments into securities, and the CONTRACTOR shall receive interest earned on such investment upon the same conditions as provided for securities deposited by CONTRACTOR. Upon satisfactory completion of the Agreement, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300.

10. If CONTRACTOR is a corporation, the undersigned hereby represents and warrants that the corporation is duly incorporated and in good standing in the State of____________________, and that____________________, whose title is____________________, is authorized to act for and bind the corporation.

11. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

12. This Agreement constitutes the entire agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties and pursuant to action of the Governing Board of the District. This Agreement shall be governed by the laws of the State of California.
IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

DISTRICT

By: ________________________________
    Signature

Print Name

Title

CONTRACTOR

By: ________________________________
    Signature

Print Name

Title

Contractor's License No.

Tax ID/Social Security No.

(CORPORATE SEAL OF CONTRACTOR,
if corporation)
ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into, as of _________________, 20______, by and between South Orange County Community College District, whose address is 28000 Marguerite Parkway, Mission Viejo, CA 92692 hereinafter called "DISTRICT;" ____________________________, whose address is ____________________________, hereinafter called "Contractor;" and, ____________________________, whose address is ____________________________, hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the DISTRICT, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by DISTRICT pursuant to the Agreement entered into between the DISTRICT and Contractor for ____________________________, in the amount of ________________, dated ________________, (hereinafter referred to as the "Agreement"). Alternatively, on written request of the Contractor, the DISTRICT shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for retention earnings, the Escrow Agent shall notify the DISTRICT within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Agreement between the DISTRICT and Contractor. Securities shall be held in the name of DISTRICT, and shall designate the Contractor as the beneficial owner.

(2) The DISTRICT shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the DISTRICT makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the DISTRICT pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the DISTRICT. These expenses and payment terms shall be determined by the DISTRICT, Contractor and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the DISTRICT.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the DISTRICT to the Escrow Agent that DISTRICT consents to the withdrawal of the amount sought to be withdrawn by Contractor.
(7) The DISTRICT shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days' written notice to the Escrow Agent from the DISTRICT of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the DISTRICT.

(8) Upon receipt of written notification from the DISTRICT certifying that the Agreement is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Agreement, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the DISTRICT and the Contractor pursuant to Sections (5) to (8), inclusive, of this Escrow Agreement and the DISTRICT and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the DISTRICT and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of DISTRICT: On behalf of Contractor:

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<tr>
<td>Name</td>
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<td>Signature</td>
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<td>Address</td>
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</tbody>
</table>
On behalf of Escrow Agent:

Title

Name

Signature

Address

At the time the Escrow Account is opened, the DISTRICT and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Escrow Agreement.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

DISTRICT

Title

Name

Signature

CONTRACTOR

Title

Name

Signature

Escrow Agent

Title

Name

Signature
GuARANTEE

Guarantee for ________________. We hereby guarantee that the ________________, which we have installed in ________________, has been done in accordance with the Project Documents and that the work as installed will fulfill the requirements included in the Project Documents. The undersigned agrees to repair or replace any or all of such work, together with any other adjacent work which may be displaced in connection with such repair or replacement, that may prove to be defective in workmanship or material within a period of one (1) year from the date of completion of the Project, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of the undersigned's or undersigned surety’s failure to commence and pursue with diligence said repairs or replacements within ten (10) calendar days after being notified in writing by the DISTRICT, the undersigned authorizes the DISTRICT to proceed to have said defects repaired or replaced and made good at the expense of the undersigned and surety who hereby agree to pay the costs and charges therefore immediately upon demand. (General Conditions Article 47(d))

__________________________________________

Name of Contractor

By: ________________________________________

Signature of Contractor

__________________________________________

Print Name

__________________________________________

Title

Contractor shall provide copy of this Guarantee to Contractor’s surety.
Guarantee (continued)

Name of Subcontractor
(if work performed by subcontractor)

By: ________________________________
Signature of Subcontractor

______________________________
Print Name

______________________________
Title

Representatives to be contacted for service:

Name: ________________________________

Address: ________________________________
_____________________________________

Telephone: ________________________________
SHOP DRAWING TRANSMITTAL

The procedure governing shop drawing submittals is contained in the General Conditions. In addition, all Supplemental Conditions, Special Conditions and Specifications must be followed by the CONTRACTOR.

Failure to comply with all requirements will constitute grounds for return of the shop drawing for proper resubmittal. CONTRACTOR shall sequentially number each submittal.

Date: ___________________________    Submittal No.: ___________________________

From: ___________________________    To: ___________________________

Project Name: ___________________________

This is a(n):  

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<tr>
<th>Original</th>
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<tr>
<td>Submittal</td>
<td>2nd Submittal</td>
</tr>
</tbody>
</table>

Subject of Submittal: ___________________________  
Equipment Designation: ___________________________  
Specification Section(s): ___________________________

Complete either (a) or (b)  

Check One:

(a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions)

(b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (listed on attached sheet)

(continued on next page)
The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings that does not conform to the Project Documents. This shop drawing has been coordinated with all other shop drawings received to date by CONTRACTOR and this duty of coordination has not been delegated to subcontractors, material suppliers, the ARCHITECT, or the engineers on this Project.

Signature of Contractor or Supplier
This Drug-Free Workplace Certification is required pursuant to Government Code Sections 8350, et seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract for the procurement of any property or services from any State agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract awarded by a State agency may be subject to suspension of payments or termination of the contract and the contractor may be subject to debarment from future contracting, if the state agency determines that specified acts have occurred.

Pursuant to Government Code Section 8355, every person or organization awarded a contract from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

a) publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition;

b) establishing a drug-free awareness program to inform employees about all of the following:
   1) the dangers of drug abuse in the workplace;
   2) the person's or organization's policy of maintaining a drug-free workplace;
   3) the availability of drug counseling, rehabilitation and employee-assistance programs;
   4) the penalties that may be imposed upon employees for drug abuse violations;

c) requiring that each employee engaged in the performance of the contract be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code Section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the contract be given a copy of the statement required by Section 8355(a) and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the DISTRICT determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of Section 8355, that the contract awarded herein is subject to suspension of payments, termination, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of Section 8350, et seq.
I acknowledge that I am aware of the provisions of Government Code Section 8350, et seq. and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

NAME OF CONTRACTOR

Signature

Print Name

Title

Date
CHANGE ORDER NO.__________ (ADDITIVE)

PROJECT: ____________________________________________________________

TO: __________________________________________________________________

You are hereby directed to provide the extra work necessary to comply with this Change Order.

DESCRIPTION OF CHANGE: ____________________________________________

COST (This cost shall not be exceeded.):

Original contract price: $ ________________
Change Order amount: $ ________________
New contract price: $ ________________

TIME FOR COMPLETION:

Original completion date: __________________
Time for completion of Change Order: __________________
New completion date: __________________

Contractor agrees to perform the above-described work in accordance with the above terms and in compliance with applicable sections of the Project Documents. The amount of the charges under this Change Order is limited to the charges allowed under Article 60 of the General Conditions. The adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order shall constitute the entire compensation and/or adjustment in the contract time due Contractor arising out of the change in the work covered by this Change Order, unless otherwise provided in this Change Order.

No additions or deletions to this Change Order shall be allowed, except with written permission of District. Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising from this Change Order.

(continued on next page)
This Change Order is hereby agreed to, accepted and approved.

CONTRACTOR

By: ________________________________
Signature

Print Name

Title

Date

ARCHITECT

By: ________________________________
Signature

Print Name

Title

Date

DISTRICT

By: ________________________________
Signature

Print Name

Title

Date
CHANGE ORDER NO. _______________ (DEDUCTIVE)

PROJECT: ________________________________

TO: ________________________________

You are hereby directed to comply with this Change Order.

DESCRIPTION OF CHANGE: ________________________________

COST (This cost shall be deleted.):

- Original contract price: $ _______________
- Change Order amount: $ _______________
- New contract price: $ _______________

TIME FOR COMPLETION:

- Original completion date: _______________
- Time for completion of Change Order: _______________
- New completion date: _______________

Contractor agrees to deduct the above-described work in accordance with the above terms and in compliance with applicable sections of the Project Documents. Contractor agrees to the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order.

No additions or deletions to this Change Order shall be allowed, except with written permission of District. Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising from this Change Order.

(continued on next page)
This Change Order is hereby agreed to, accepted and approved.

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CONTRACTOR’S CERTIFICATE REGARDING NON-ASBESTOS CONTAINING MATERIALS

Per Article 70 of the General Conditions.

Certification for _______________________. We hereby certify that no Asbestos, or Asbestos Containing Materials shall be used in this Project or in any tools, devices, clothing, or equipment used to affect the __________ on which we have installed in the South Orange County Community College District under Project/Bid No. __________.

(a) The Contractor further certifies that he/she has instructed his/her employees with respect to the above mentioned standards, hazards, risks and liabilities.

(b) Asbestos and/or asbestos containing material shall be defined as all items containing but not limited to chrysotile, corcidolite, amosite, anthopyllite, tremolite and actinolite.

(c) Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos containing material.

(d) Any disputes involving the question of whether or not material contains asbestos shall be settled by electron microscopy. The costs of any such tests shall be paid by the Contractor if the material is found to contain asbestos.

(e) All work or materials found to contain asbestos or work or material installed with asbestos containing equipment will be immediately rejected and this work will be removed at no additional cost to the District.

_________________________________________  __________________________________________
Date                                      Name of Contractor

By: ______________________________________
    Signature

_________________________________________
Print Name

_________________________________________
Title
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ARTICLE 1.  DEFINITIONS

(a)  Action of the Governing Board is a vote of a majority of the members in a lawful meeting.

(b)  Addenda are the changes in plans, specifications, drawings, and/or Project Documents which have been authorized in writing by the DISTRICT or ARCHITECT, and which alter, explain, or clarify the Project Documents prior to the bid deadline.

(c)  Agents & Representatives includes all project participants holding contract with the DISTRICT other than the CONTRACTOR.

(d)  Agreement includes collectively all Project Documents.

(e)  Approval means written authorization by ARCHITECT or DISTRICT.

(f)  CONTRACTOR or DISTRICT are those mentioned as such in the Agreement. They are treated throughout the Project Documents as if they are of singular number and neuter gender.

(g)  Day shall be defined as business day unless otherwise noted.

(h)  DISTRICT is the Governing Board or its duly authorized representative.

(h)  Locality in which the work is performed means the county and city in which the work is done.

(i)  Project is the planned undertaking as provided for in the Project Documents by DISTRICT and CONTRACTOR.

(j)  Project Documents includes collectively, to wit: Notice Calling for Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractor form, Information Required of Bidder, all prequalification forms submitted pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Affidavit, Workers’ Compensation Certificate, Faithful Performance Bond, Payment Bond, Agreement, Escrow Agreement, Drug-Free Workplace Certification, Change Order forms, Shop Drawing Transmittals form, Insurance Certificates and Endorsements, Guarantee form, Contractor’s Certificate Regarding Non-Asbestos Containing Materials, General Conditions, Supplemental Conditions, if any, Special Conditions, if any, Drawings, Specifications, and all modifications, addenda and amendments thereto. The Project Documents are complementary, and what is called for by any one shall be as binding as if called for by all.

(k)  Provide shall include "provide complete in place," that is, "furnish and install."

(l)  Safety Orders are those issued by the Division of Industrial Safety and OSHA safety and health standards for construction.

(m)  Standards, Rules, and Regulations referred to are recognized printed standards and shall be considered as one and a part of these specifications within limits specified.

(n)  Subcontractor, as used herein, includes those having a direct contractual relationship with CONTRACTOR and one who furnishes material worked to a special design according to plans, drawings, and specifications, but does not include one who merely furnishes material not so worked.
(o) **Surety** is the person, firm, or corporation that executes as a California admitted surety insurer, the CONTRACTOR's Bid Security, faithful performance bond and payment bond.

(p) **Work** of the CONTRACTOR or subcontractor includes labor or materials (including, without limitation, equipment and appliances) or both, incorporated in, or to be incorporated in the Project.

(q) **Workers** includes laborer, worker, or mechanic.

(r) **Working day** is defined as business day.

### ARTICLE 2. STATUS OF CONTRACTOR

(a) CONTRACTOR is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it performs the services required of it by the terms of the Project Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the DISTRICT and CONTRACTOR or any of CONTRACTOR's agents or employees. CONTRACTOR assumes exclusively the responsibility for the acts of its employees as they relate to the services to be provided during the course and scope of their employment. CONTRACTOR, its agents and employees shall not be entitled to any rights or privileges of DISTRICT employees and shall not be considered in any manner to be DISTRICT employees. DISTRICT shall be permitted to monitor the activities of the CONTRACTOR to determine compliance with the terms of the Project Documents.

(b) Contractors are required by law to be licensed and regulated by the Contractors' State License Board. Any CONTRACTOR not so licensed is subject to penalties under the law, and the contract will be considered void pursuant to Section 7028.7 of the Business and Professions Code. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, 9821 Business Park Drive, P. O. Box 26000, Sacramento, CA 95826.

### ARTICLE 3. CHANGE IN NAME AND NATURE OF CONTRACTOR'S LEGAL ENTITY

Before CONTRACTOR makes any change in the name or legal nature of the CONTRACTOR's entity, CONTRACTOR shall first notify the DISTRICT in writing and cooperate with DISTRICT in making such changes as the DISTRICT may request in the Project Documents.

### ARTICLE 4. CONTRACTOR'S SUPERVISION, PROSECUTION AND PROGRESS

(a) During progress of the work, CONTRACTOR shall keep on the work site a competent superintendent satisfactory to DISTRICT. Before commencing the work herein, CONTRACTOR shall give written notice to DISTRICT and ARCHITECT of the name, qualifications and experience of such superintendent. If Superintendent is found unsatisfactory by DISTRICT, CONTRACTOR shall replace the Superintendent with one acceptable to the DISTRICT. Superintendent shall not be changed except with written consent of DISTRICT, unless a superintendent proves to be unsatisfactory to CONTRACTOR and ceases to be in its employ, in which case, CONTRACTOR shall notify DISTRICT and ARCHITECT in writing and replace said Superintendent with one acceptable to the DISTRICT. Superintendent shall represent CONTRACTOR and all directions given to Superintendent shall be as binding as if given to CONTRACTOR.

(b) CONTRACTOR shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the work in accordance with the Project Documents. CONTRACTOR shall carefully study and compare all plans, drawings, specifications, and
other instructions and shall at once report to ARCHITECT any error, inconsistency or omission which CONTRACTOR or its employees may discover. The CONTRACTOR represents itself to DISTRICT as a skilled, knowledgeable, and experienced CONTRACTOR. The CONTRACTOR shall carefully study and compare the Project Documents with each other, and shall at once report to the ARCHITECT any errors, inconsistencies, or omissions discovered. The CONTRACTOR shall be liable to the DISTRICT for damage resulting from errors, inconsistencies, or omissions in the Project Documents that the CONTRACTOR recognized and which CONTRACTOR knowingly failed to report and which a similarly skilled, knowledgeable, and experienced contractor would have discovered.

(c) The CONTRACTOR shall verify all indicated dimensions before ordering materials or equipment, or before performing work. The CONTRACTOR shall take field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the CONTRACTOR with the Project Documents before commencing work. Errors, inconsistencies or omissions discovered shall be reported to the DISTRICT at once. Upon commencement of any item of work, the CONTRACTOR shall be responsible for dimensions related to such item of work and shall make any corrections necessary to make work properly fit at no additional cost to DISTRICT. This responsibility for verification of dimensions is a non-delegable duty and may not be delegated to subcontractors or agents.

(d) Omissions from the plans, drawings or specifications, or the mis-description of details of work which are manifestly necessary to carry out the intent of the plans, drawings and specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or mis-described work, but they shall be performed as if fully and correctly set forth and described in the plans, drawings and specifications.

(e) The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The CONTRACTOR shall be responsible to see that the finished work complies accurately with the Project Documents.

ARTICLE 5. SUBCONTRACTORS

(a) CONTRACTOR agrees to bind every subcontractor by terms of the Project Documents as far as such terms are applicable to subcontractor's work. If CONTRACTOR shall subcontract any part of the work, CONTRACTOR shall be as fully responsible to DISTRICT for acts and omissions of any subcontractor and of persons either directly or indirectly employed by any subcontractor, as it is for acts and omissions of persons directly employed by CONTRACTOR. Nothing contained in Project Documents shall create any contractual relation between any subcontractor and DISTRICT, nor shall the contract documents be construed to be for the benefit of any subcontractor.

(b) DISTRICT’s consent to any subcontractor shall not in any way relieve CONTRACTOR of any obligations under the Project Documents and no such consent shall be deemed to waive any provision of any Project Document.

(c) CONTRACTOR must submit with its bid, a Designation of Subcontractors pursuant to the Subletting and Subcontracting Fair Practices Act. If CONTRACTOR specifies more than one subcontractor for the same portion of work or fails to specify a subcontractor, and such portion of the work exceeds one-half of one percent of the total bid, CONTRACTOR agrees that it is fully qualified to perform and shall perform such work itself, unless CONTRACTOR provides for substitution or addition of subcontractors. Substitution or addition of
subcontractors shall be permitted only as authorized under the Subletting and Subcontracting Fair Practices Act, Public Contract Code Section 4100, et. seq.

(d) In accordance with Business and Professions Code Section 7059, if CONTRACTOR is designated as a "specialty contractor" (as defined in Section 7058 of the Public Contract Code), all of the work to be performed outside of the CONTRACTOR’s license specialty shall be performed by a licensed subcontractor in compliance with the Subletting and Subcontracting Fair Practices Act, Public Contract Code Section 4100, et seq.

(e) A copy of each subcontract, if in writing, or, if not in writing, then a written statement signed by the CONTRACTOR giving the name of the subcontractor and the terms and conditions of such subcontract, shall be filed with the DISTRICT before the subcontractor begins work. Each subcontract shall contain a reference to the Agreement between the DISTRICT and the CONTRACTOR and the terms of that Agreement and all parts of the Project Documents shall be made a part of such subcontract insofar as applicable to the work covered thereby. Each subcontract will provide for termination in accordance with Article 13 of these General Conditions. Each subcontract shall provide for its annulment by the CONTRACTOR at the order of the ARCHITECT if in the ARCHITECT's opinion the subcontractor fails to comply with the requirements of the Project Documents insofar as the same may be applicable to this work. Nothing herein contained shall relieve the CONTRACTOR of any liability or obligation hereunder.

(f) A CONTRACTOR may not permit a subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code to bid on, be awarded, or perform work as a subcontractor on a public works project.

**ARTICLE 6. PROHIBITED INTERESTS**

No official of DISTRICT who is authorized in such capacity and on behalf of DISTRICT to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with construction of the Project, shall become directly or indirectly interested financially in this Project or in any part thereof. No officer, employee, architect, attorney, engineer or inspector of or for DISTRICT who is authorized in such capacity and on behalf of DISTRICT to exercise any executive, supervisory or other similar functions in connection with construction of Project shall become directly or indirectly interested financially in this Project or in any part thereof. CONTRACTOR shall receive no compensation and shall repay DISTRICT for any compensation received by CONTRACTOR hereunder, should CONTRACTOR aid, abet or knowingly participate in violation of this Article 6.

**ARTICLE 7. DISTRICT’S INSPECTOR**

(a) One or more Inspector(s), including special inspectors, as required, will be employed by DISTRICT and will be assigned to the Project.

(b) No work shall be performed by the CONTRACTOR solely upon the instructions or comments by the Inspector. The Inspector has no authority to interpret the Project Documents or order extra work and any extra work performed without the written instruction of the DISTRICT shall be at CONTRACTOR’s sole cost and expense and there will be no delay damages incurred by DISTRICT for such work.

(c) No work shall be carried on except with the knowledge and under the inspection of said Inspector(s). He/she shall have free access to any or all parts of work at any time. CONTRACTOR shall furnish Inspector
reasonable opportunities for obtaining such information as may be necessary to keep Inspector fully informed respecting progress and manner of work and character of materials. Inspection of work shall not relieve CONTRACTOR from any obligation to fulfill the Project Documents. Inspector or ARCHITECT shall have authority to stop work whenever provisions of Project Documents are not being complied with and such noncompliance is discovered. CONTRACTOR shall instruct its employees accordingly.

(d) CONTRACTOR understands and agrees that the Inspector for the Project may also serve concurrently as inspector for other DISTRICT projects and may not therefore be available on site during the entire work day. It shall be the responsibility of CONTRACTOR to notify the Inspector not less than twenty-four (24) hours in advance of materials and equipment deliveries and required inspections.

ARTICLE 8. ARCHITECT’S STATUS

(a) The ARCHITECT shall be the DISTRICT’s representative during construction and shall observe the progress and quality of the work on behalf of the DISTRICT. ARCHITECT shall have the authority to act on behalf of DISTRICT only to the extent expressly provided in the Project Documents. ARCHITECT shall have authority to stop work whenever such stoppage may be necessary in ARCHITECT’S reasonable opinion to ensure the proper execution of the Project Documents.

(b) The ARCHITECT shall be, in the first instance, the judge of the performance of the work. ARCHITECT shall exercise authority under the Project Documents to enforce CONTRACTOR’s faithful performance.

(c) The ARCHITECT shall have all authority and responsibility established by law. The ARCHITECT has the authority to enforce compliance with the Project Documents and the CONTRACTOR shall promptly comply with instructions from the ARCHITECT or an authorized representative of the ARCHITECT.

(d) On all questions related to the quantities, the acceptability of material, equipment or workmanship, the execution, progress or sequence of work, the interpretation of plans, specifications or drawings, and the acceptable performance of the CONTRACTOR pursuant to the decision of the ARCHITECT shall govern and shall be precedent to any payment unless otherwise ordered by the Governing Board. The progress and completion of the work shall not be impaired or delayed by virtue of any question or dispute arising out of or related to the foregoing matters and the instructions of the ARCHITECT relating thereto.

(e) General supervision and direction of the work by the ARCHITECT shall in no way imply that the ARCHITECT or his or her representatives are in any way responsible for the safety of the CONTRACTOR or its employees or that the ARCHITECT or his or her representatives will maintain supervision over the CONTRACTOR's construction methods or personnel other than to ensure that the quality of the finished work is in accordance with the Project Documents.

ARTICLE 9. NOTICE OF TAXABLE POSSESSORY INTEREST

The terms of the Agreement may result in the creation of a possessory interest. If such a possessory interest is vested in a private party to the Agreement, the private party may be subjected to the payment of property taxes levied on such interest.
ARTICLE 10. ASSIGNMENT OF ANTITRUST ACTIONS

Public Contract Code Section 7103.5 provides:

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body (DISTRICT) all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

CONTRACTOR, for itself and all subcontractors, agrees to assign to DISTRICT all rights, title, and interest in and to all such causes of action CONTRACTOR and all subcontractors may have under the Agreement. This assignment shall become effective at the time DISTRICT tenders final payment to the CONTRACTOR and CONTRACTOR shall require assignments from all subcontractors to comply herewith.

ARTICLE 11. OTHER CONTRACTS

(a) DISTRICT reserves the right to let other contracts in connection with this work. CONTRACTOR shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly connect and coordinate its work with such other contractors.

(b) If any part of CONTRACTOR's work depends for proper execution or results upon work of any other contractor, the CONTRACTOR shall inspect and promptly report to ARCHITECT in writing any defects in such work that render it unsuitable for such proper execution and results. CONTRACTOR will be held accountable for damages to DISTRICT for that work which it failed to inspect or should have inspected. CONTRACTOR's failure to inspect and report shall constitute its acceptance of other contractor's work as fit and proper for reception of its work, except as to defects which may develop in other contractors' work after execution of CONTRACTOR's work.

(c) To ensure proper execution of its subsequent work, CONTRACTOR shall measure and inspect work already in place and shall at once report to the ARCHITECT in writing any discrepancy between executed work and Project Documents.

(d) CONTRACTOR shall ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by DISTRICT in prosecution of the Project to the end that CONTRACTOR may perform this Agreement in the light of such other contracts, if any.

(e) Nothing herein contained shall be interpreted as granting to CONTRACTOR exclusive occupancy at site of Project. CONTRACTOR shall not cause any unnecessary hindrance or delay to any other contractor working on Project. If simultaneous execution of any contract for Project is likely to cause interference with performance of some other contract or contracts, DISTRICT shall decide which contractor shall cease work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously.
(f) DISTRICT shall not be responsible for any damages suffered or extra costs incurred by CONTRACTOR resulting directly or indirectly from award or performance or attempted performance of any other contract or contracts on Project, or caused by any decision or omission of DISTRICT respecting the order of precedence in performance of contracts.

ARTICLE 12. OCCUPANCY

DISTRICT reserves the right to occupy buildings and/or portions of the site at any time before completion, and such occupancy shall not constitute final acceptance of any part of work covered by this Agreement, nor shall such occupancy extend the date specified for completion of the work. Beneficial occupancy of building(s) does not commence any warranty period nor shall it entitle CONTRACTOR to any additional compensation due to such occupancy.

ARTICLE 13. DISTRICT’S RIGHT TO TERMINATE AGREEMENT

(a) Termination for Cause. If the CONTRACTOR refuses or fails to complete the work or any separable part thereof with such diligence as will insure its completion within the time specified or any extension thereof, or fails to complete said work within such time, or if the CONTRACTOR should file a petition for relief as a debtor, or should relief be ordered against CONTRACTOR as a debtor under Title 11 of the United States Code, or if CONTRACTOR should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it should refuse or should fail to supply enough properly skilled workers or proper equipment, tools, and materials in the necessary quantity and quality to complete the work in the time specified, or if CONTRACTOR should fail to make prompt payment to subcontractors for materials or labor, or disregard laws or ordinances or instructions of DISTRICT, or if CONTRACTOR or its subcontractors should otherwise be guilty of a violation of any provision of this Agreement, then CONTRACTOR shall be deemed to be in default of the Agreement and DISTRICT may, without prejudice to any other right or remedy, serve written notice upon CONTRACTOR and its surety of DISTRICT’s intention to terminate this Agreement, such notice to contain the reasons for such intention to terminate, and unless within ten (10) calendar days after the service of such notice such condition shall cease or such violation shall cease, or arrangements satisfactory to DISTRICT for the correction thereof be made and corrective action commenced in a diligent and workmanlike manner and pursued to satisfactory completion, this Agreement shall upon the expiration of said ten (10) calendar days, cease and terminate. In such case, CONTRACTOR shall be excluded from the worksite and not be entitled to receive any further payment until work is finished to DISTRICT’s satisfaction.

(b) In the event of any such termination, surety shall have the right to take over and perform this Agreement, provided, however, that if surety within five (5) calendar days after service upon it of said notice of termination does not give DISTRICT written notice of its intention to take over and perform this Agreement or does not commence performance thereof within ten (10) calendar days after date of serving such notice of termination by DISTRICT on surety, DISTRICT may take over the work and prosecute same to completion by any means determined by DISTRICT including hiring another contractor for the account and at the expense of CONTRACTOR, and CONTRACTOR and its surety shall be liable to DISTRICT for any excess cost or other damages occasioned by the DISTRICT thereby. Time is of the essence in this Agreement. If the DISTRICT takes over the work as hereinabove provided, the DISTRICT may, without liability for so doing, take possession of and utilize in completing the work such materials, supplies, equipment and other property belonging to the CONTRACTOR as may be on the site of the work and necessary therefore.

(c) The expense of finishing the work, including compensation for additional architectural, managerial, and administrative services, shall be a charge against CONTRACTOR and CONTRACTOR agrees that the
charge may be deducted from any money due or becoming due to CONTRACTOR from DISTRICT or CONTRACTOR shall pay the charge to the DISTRICT. Expense incurred by DISTRICT as herein provided, and damage incurred through CONTRACTOR's default, shall be certified to DISTRICT by ARCHITECT. The surety shall become liable for payment should CONTRACTOR fail to pay in full any cost incurred by the DISTRICT.

(d) Non-appropriation of Funds/Insufficient Funds. In the event that sufficient funds are not appropriated to complete the Project or the DISTRICT determines that sufficient funds are not available to complete the Project, DISTRICT may terminate or suspend the completion of the Project at any time by giving written notice to the CONTRACTOR. In the event that the DISTRICT exercises this option, the DISTRICT shall pay for any and all work and materials completed or delivered onto the site, and the value of any and all work then in progress and orders actually placed which cannot be canceled up to the date of notice of termination. The value of work and materials paid for shall include a factor of fifteen percent (15%) for the CONTRACTOR’s overhead and profit and there shall be no other costs or expenses paid to CONTRACTOR. All work, materials and orders paid for pursuant to this provision shall become the property of the DISTRICT. DISTRICT may, without cause, order CONTRACTOR in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as DISTRICT may determine. Adjustment shall be made for increases in the cost of performance of the Agreement caused by suspension, delay or interruption.

(e) The foregoing provisions are in addition to and not a limitation of any other rights or remedies available to the DISTRICT.

ARTICLE 14. BONDS

Unless otherwise specified in Special Conditions, CONTRACTOR shall furnish a surety bond in an amount equal to one hundred percent (100%) of contract price as security for faithful performance of this Agreement and shall furnish a separate bond in an amount of one hundred percent (100%) of the contract price as security for payment to persons performing labor and furnishing materials in connection with this Project. Bonds shall be in the form set forth in these Project Documents.

ARTICLE 15. SUBSTITUTION OF SECURITIES

(a) Pursuant to the requirements of Public Contract Code Section 22300, upon CONTRACTOR's request, DISTRICT will make payment to CONTRACTOR of any earned retention funds withheld from payments under this Agreement if CONTRACTOR deposits with the DISTRICT or in escrow with a California or federally chartered bank acceptable to DISTRICT, securities eligible for the investment pursuant to Government Code Section 16430 or bank or savings and loan certificates of deposit, upon the following conditions:

(1) CONTRACTOR shall be the beneficial owner of any securities substituted for retention funds withheld and shall receive any interest thereon.

(2) All expenses relating to the substitution of securities under said Section 22300 and under this Article 15, including, but not limited to DISTRICT’s overhead and administrative expenses, and expenses of escrow agent shall be the responsibility of the CONTRACTOR.

(3) If CONTRACTOR shall choose to enter into an escrow agreement, such agreement shall be in the form as set forth in Public Contract Code section 22300(f) attached hereto as part of the Project Documents and which shall allow for the conversion to cash to provide funds to meet defaults by the
CONTRACTOR including, but not limited to, termination of the CONTRACTOR's control over the work, stop notices filed pursuant to law, assessment of liquidated damages or amount to be kept or retained under the provisions of the Project Documents.

(4) Securities, if any, shall be returned to CONTRACTOR only upon satisfactory completion of the Agreement.

(b) To minimize the expense caused by such substitution of securities, CONTRACTOR shall, prior to or at the time CONTRACTOR requests to substitute security, deposit sufficient security to cover the entire amount to be then withheld and to be withheld under the General Conditions of this Agreement. Should the value of such substituted security at any time fall below the amount for which it was substituted, or any other amount which the DISTRICT determines to withhold, CONTRACTOR shall immediately, and at CONTRACTOR's expense, deposit additional security qualifying under said Section 22300 until the total security deposited is no less than equivalent to the amount subject to withholding under the Agreement.

(c) In the alternative, under Section 22300, CONTRACTOR, at its own expense, may request DISTRICT to make payment of earned retention funds directly to the escrow agent. Also at the expense of CONTRACTOR, CONTRACTOR may direct investment of the payments into securities, and CONTRACTOR shall receive the interest earned on the investment upon the same conditions as shown in paragraph (a) for securities deposited by CONTRACTOR. Upon satisfactory completion of the Agreement, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by the escrow agent from DISTRICT, pursuant to the terms of Section 22300.

(d) If any provision of this Article 15 shall be found to be illegal or unenforceable, then, notwithstanding, this Article 15 shall remain in full force and effect, and such provision shall be deemed stricken.

**ARTICLE 16. FIRE INSURANCE**

CONTRACTOR will procure at CONTRACTOR's own expense, and before commencement of any work under this Agreement, fire insurance on the Project. Amount of fire insurance shall be sufficient to protect against loss or damage in full until work is accepted by DISTRICT. CONTRACTOR shall submit proof of insurance and shall provide endorsements on forms provided by the DISTRICT or on forms approved by the DISTRICT.

**ARTICLE 17. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE**

(a) CONTRACTOR shall take out and maintain during the life of this Agreement such public liability and property damage insurance as shall protect CONTRACTOR and DISTRICT from all claims for personal injury, including accidental death, to any person (including, as to DISTRICT, injury or death to CONTRACTOR's or subcontractor's employees), as well as from all claims for property damage arising from operations under this Agreement, in amounts as set forth in the Agreement.

(b) CONTRACTOR shall require its subcontractors, if any, to take out and maintain similar public liability and property damage insurance in like amounts or insure the activities of its subcontractors in CONTRACTOR’s own policy.

(c) CONTRACTOR, during the progress of the work and until final acceptance of the work by DISTRICT upon completion of the entire Agreement, shall maintain Builder’s Risk/ “All Risk,” course-of-construction insurance in an amount not less than as set forth in the Agreement. Coverage is to provide extended coverage
and insurance against vandalism, malicious mischief, perils of fire, sprinkler leakage, civil authority, sonic
boom, earthquake, collapse, flood, wind, lightning, smoke, riot, debris removal (including demolition), and
reasonable compensation for ARCHITECT’s services and expenses required as a result of such insured loss
upon the entire work which is the subject of the Project Documents, including completed work, work in
progress to the full insurable amount thereof, and temporary field offices placed at the project site by the
Contractor or District Consultants in conjunction with the Project. The risk of damage to the work due to the
perils covered by the Builder’s Risk/’All Risk’ Insurance, as well as any other hazards which might result in
damage to the work, is that of CONTRACTOR and the surety, and no claims for such loss or damage shall be
recognized by DISTRICT nor will such loss or damage excuse the complete and satisfactory performance of the
Agreement by CONTRACTOR.

(d) CONTRACTOR shall submit proof of insurance and shall provide endorsements on the forms
provided by the DISTRICT or on forms approved by the DISTRICT. Such insurance shall be issued by
admitted surety insurers under the same conditions as required for bonds on the Project.

ARTICLE 18. WORKERS’ COMPENSATION INSURANCE

(a) In accordance with the provisions of Section 3700 of the Labor Code, the CONTRACTOR and every
subcontractor shall be required to secure the payment of compensation to its employees.

(b) The CONTRACTOR shall provide, during the life of the Agreement, workers' compensation insurance
for all of its employees engaged in work under this Agreement, on or at the site of the Project, and, in case any
of its work is sublet, the CONTRACTOR shall require the subcontractor similarly to provide workers'
compensation insurance for all the latter's employees. Any class of employee or employees not covered by a
subcontractor's insurance shall be covered by the CONTRACTOR's insurance. In case any class of employees
engaged in work under this Agreement, on or at the site of the Project, is not protected under the workers'
compensation statute, the CONTRACTOR shall provide or shall cause a subcontractor to provide, adequate
insurance coverage for the protection of such employees not otherwise protected before subcontractor
commences work. The CONTRACTOR shall file with the DISTRICT certificates of its insurance protecting
workers and a thirty (30) day notice shall be provided to DISTRICT before the cancellation or reduction of any
policy of CONTRACTOR or subcontractor. CONTRACTOR shall submit proof of insurance and shall provide
endorsements on the forms provided by the DISTRICT or on forms approved by the DISTRICT. Such
endorsements shall be submitted concurrently with the Project Documents.

ARTICLE 19. PROOF OF CARRIAGE OF INSURANCE

(a) CONTRACTOR shall not commence work nor shall it allow any subcontractor to commence work
under this Agreement until all required insurance certificates and endorsements from admitted surety insurers
have been obtained and delivered in duplicate to and approved by DISTRICT. Such insurance shall be issued
by admitted surety insurers under the same conditions as required for bonds on the Project. CONTRACTOR
shall provide proof of insurance on DISTRICT approved forms without revisions.

(b) Certificates and insurance policies shall include the following:

(1) A clause stating:
"This policy shall not be canceled or reduced in required limits of liability or amount of insurance until notice has been mailed to DISTRICT stating date of cancellation or reduction. Date of cancellation or reduction may not be less than thirty (30) days after date of mailing notice."

(2) Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

(3) Statement that the DISTRICT is an additional insured under the policy described and that such insurance policy shall be primary to any insurance or self-insurance maintained by the DISTRICT.

(c) In case of CONTRACTOR's failure to provide insurance as required by the Agreement, the DISTRICT may, at DISTRICT’s option, take out and maintain at the expense of the CONTRACTOR, such insurance in the name of CONTRACTOR, or subcontractor, as the DISTRICT may deem proper and may deduct the cost of taking out and maintaining such insurance from any sums which are due or to become due to the CONTRACTOR under this Agreement.

ARTICLE 20. DRAWINGS AND SPECIFICATIONS

(a) Drawings and Specifications are intended to delineate and describe the Project and its component parts to such a degree as will enable skilled and competent contractors to intelligently bid upon the work, and to carry said work to a successful conclusion.

(b) Drawings and Specifications are intended to comply with all laws, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Project Documents, said laws, ordinances, rules and regulations shall be considered as a part of the Agreement within the limits specified. The CONTRACTOR shall bear all expenses of correcting work done contrary to said laws, ordinances, rules and regulations and if the CONTRACTOR performed same (1) without first consulting the ARCHITECT for further instructions regarding said work, or (2) disregarded the ARCHITECT’S instructions regarding said work.

(c) Questions regarding interpretation of drawings and specifications shall be clarified by the ARCHITECT. Before commencing any portion of the work, CONTRACTOR shall carefully examine all drawings and specifications and other information given to CONTRACTOR. CONTRACTOR shall immediately notify ARCHITECT and DISTRICT in writing of any perceived or alleged error, inconsistency, ambiguity, or lack of detail or explanation in the drawings and specifications. If CONTRACTOR or its subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any work under the Project Documents, which it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, CONTRACTOR shall bear any and all costs arising therefrom including, without limitation, the cost of correction thereof. In the event ARCHITECT determines that CONTRACTOR's requests for clarification or interpretation are not justified or do not reflect adequate competent supervision or knowledge by the CONTRACTOR or his/her subcontractors, CONTRACTOR shall be required to pay ARCHITECT's reasonable and customary fees in processing and responding to such requests. Should the CONTRACTOR commence work or any part thereof without seeking clarification, CONTRACTOR waives any claim for extra work or damages as a result of any ambiguity, conflict or lack of information.
(d) Figured dimensions on drawings shall govern, but work not dimensioned shall be as directed. Work not particularly shown or specified shall be the same as similar parts that are shown or specified. Large-scale drawings shall take precedence over smaller scale drawings as to shape and details of construction. Specifications shall govern as to materials, workmanship, and installation procedures. Drawings and specifications are intended to be fully cooperative and to agree. If CONTRACTOR observes that drawings and specifications are in conflict, CONTRACTOR shall promptly notify the ARCHITECT in writing, and any necessary changes shall be adjusted as provided in the Article entitled "Changes and Extra Work;" provided, however, that the specification calling for the higher quality material or workmanship shall prevail without additional cost to DISTRICT.

(e) Materials or work described in words which so applied has a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

(f) It is not the intention of the Agreement to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of such "trade name" or "trade term" shall be considered a sufficient notice to CONTRACTOR that it will be required to complete the work so named with all its incidental and accessory items according to the best practices of the trade.

(g) The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor necessary to achieve full and complete functioning of the material and/or equipment as per best practices of the trade(s) involved, unless specifically noted otherwise.

(h) ARCHITECT will furnish to CONTRACTOR one (1) complete set of blue-line prints for posting of changes. Additional blue-line prints shall be provided by ARCHITECT upon payment by CONTRACTOR. During the construction period, CONTRACTOR shall maintain the set of blue-line prints in a satisfactory record condition, and shall thoroughly and neatly post, as they occur, all additions, deletions, corrections and/or revisions in the actual construction of the Project. The record drawings must be posted monthly and be current prior to each submission of each certificate of payment.

**ARTICLE 21. OWNERSHIP OF DRAWINGS**

All plans, drawings, designs, specifications, and other incidental architectural and engineering work or materials and other Project Documents and copies thereof furnished by DISTRICT are DISTRICT’s property. They are not to be used in other work and are to be returned to DISTRICT on request at completion of work, and may be used by DISTRICT as it may require, without any additional costs to DISTRICT.

**ARTICLE 22. DETAIL DRAWINGS AND INSTRUCTIONS**

(a) In case of ambiguity, conflict, or lack of information, ARCHITECT shall furnish additional instructions by means of drawings or otherwise, necessary for proper execution of work. All such drawings and instructions shall be consistent with Project Documents, true developments thereof, and reasonably inferable therefrom. Such additional instructions shall be furnished with reasonable promptness, provided that CONTRACTOR informs the ARCHITECT of the relationship of the request to the critical path of construction.

(b) Work shall be executed in conformity therewith and CONTRACTOR shall do no work without proper drawings and instructions.
(c) The ARCHITECT will furnish necessary additional details to more fully explain the work, which details shall be considered as part of the Project Documents.

(d) Should any details be more elaborate, in the opinion of the CONTRACTOR, than scale drawings and specifications warrant, CONTRACTOR shall give written notice thereof to the ARCHITECT within five (5) days of the receipt of same. In case no notice is given to the ARCHITECT within five (5) days, it will be assumed the details are reasonable development of the scale drawings. In case notice is given, then it will be considered, and if found justified, the ARCHITECT will either modify the drawings or shall recommend to DISTRICT a change order for the extra work involved.

(e) All parts of the described and shown construction shall be of the best quality of their respective kinds and the CONTRACTOR is hereby advised to use all diligence to become fully involved as to the required construction and finish, and in no case to proceed with the different parts of the work without obtaining first from the ARCHITECT such directions and/or drawings as may be necessary for the proper performance of the work.

(f) If it is found at any time, before or after completion of the work, that the CONTRACTOR has varied from the drawings and/or specifications, in materials, quality, form or finish, or in the amount or value of the materials and labor used, the ARCHITECT shall make a recommendation: (1) that all such improper work should be removed, remade and replaced, and all work disturbed by these changes be made good at the CONTRACTOR's expense; or (2) that the DISTRICT deduct from any amount due CONTRACTOR, the sum of money equivalent to the difference in value between the work performed and that called for by the drawings and specifications. ARCHITECT shall determine such difference in value. The DISTRICT, at its option, may pursue either recommendation made by the ARCHITECT.

ARTICLE 23. SHOP DRAWINGS

(a) CONTRACTOR shall check and verify all field measurements and shall submit to ARCHITECT, with sufficient advance time, six (6) copies, checked and approved by CONTRACTOR, of all shop or setting list drawings, schedules, and materials list required for the work of various trades. ARCHITECT shall review such drawings, schedules and materials list only for conformance with design concept of Project and compliance with information given in Project Documents, and return as approved or disapproved with guidance as to required corrections within fourteen (14) calendar days (and more than 14 calendar days for complex reviews). CONTRACTOR shall make any corrections required by ARCHITECT, file three (3) corrected copies with ARCHITECT, and furnish such other copies as may be needed for construction within fourteen (14) calendar days. ARCHITECT'S approval of such drawings, schedules, or materials list shall not relieve CONTRACTOR from responsibility for deviations unless CONTRACTOR has in writing called ARCHITECT'S attention to such deviations at time of submission and secured ARCHITECT'S written approval, nor shall it relieve CONTRACTOR from responsibility for errors in shop drawings or schedules.

(b) All submittals of shop drawings, catalog cuts, data sheets, schedules and material lists shall be complete and shall conform to contract drawings and specifications.

(c) The term "shop drawing" as used herein shall be understood to include, but not be limited to, detail design calculations, fabrication and installation drawings, lists, graphs and operating instructions.

(d) Shop drawings shall be submitted at a time sufficiently early to allow review of same by the Division of State Architect (DSA) if required, and the ARCHITECT, and to accommodate the rate of construction
progress required under the Project Documents. CONTRACTOR will be required to pay ARCHITECT's reasonable and customary fees in order to expedite review of shop drawings which are not submitted in a timely fashion.

(e) All shop drawing submittals shall be accompanied by an accurately completed transmittal form using the format bound herein. Any shop drawing submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal. The CONTRACTOR may authorize a material or equipment supplier to deal directly with the ARCHITECT with regard to shop drawings, however, ultimate responsibility for the accuracy and completeness of the information contained in the submittal shall remain with the CONTRACTOR.

(f) Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of shop drawings on various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. At its option, the CONTRACTOR or Supplier may obtain from the ARCHITECT quantities of the shop drawing transmittal form at reproduction cost.

(g) CONTRACTOR's review and approval of shop drawings shall include the following stamp:

"The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings that does not conform to the Project Documents. This shop drawing has been coordinated with all other shop drawings received to date by CONTRACTOR and this duty of coordination has not been delegated to subcontractors, material suppliers, the ARCHITECT, or the engineers on this project.

____________________________________________
Signature of CONTRACTOR"

(h) Within fourteen (14) calendar days after receipt of shop drawings, the ARCHITECT will return one or more prints of each drawing to CONTRACTOR with his or her comments noted thereon. The CONTRACTOR shall make a complete and acceptable submittal to the ARCHITECT by the second submission of drawings. The DISTRICT shall withhold funds due the CONTRACTOR to cover additional costs of the ARCHITECT'S review beyond the second submission and any other costs incurred by DISTRICT.

(i) If prints of the shop drawing are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision of said drawing will not be required. If prints of the drawing are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal resubmittal of said drawings will not be required. If prints of the drawing are returned to the CONTRACTOR marked "REVISE AND RESUBMIT," the CONTRACTOR shall revise said drawing and shall resubmit six (6) copies of the revised drawing to the ARCHITECT. If prints of the drawing are returned to the CONTRACTOR marked "REJECTED RESUBMIT," the CONTRACTOR shall resubmit six (6) new copies of the drawing to the ARCHITECT.

(j) Fabrication of an item shall not be commenced before the ARCHITECT has reviewed the pertinent shop drawings and returned copies to the CONTRACTOR marked with "NO EXCEPTIONS TAKEN," or
"MAKE CORRECTIONS NOTED." Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the Project Documents and shall not be taken as the basis of claims for extra work. The review of such drawings by the ARCHITECT will be limited to checking for general agreement with the Project Documents, and shall in no way relieve the CONTRACTOR of responsibility for errors or omissions contained therein, nor shall such review operate to waive or modify any provision contained in the Project Documents. Fabricating dimensions, quantities of material, applicable code requirements, and other contract requirements shall be the CONTRACTOR's responsibility.

(k) No work represented by required shop drawings shall be purchased or commenced until the applicable submittal has been approved. The work shall conform to the approved shop drawings and all other requirements of the Project Documents. The CONTRACTOR shall not proceed with any related work which may be affected by the work covered under shop drawings until the applicable shop drawings have been approved, particularly where piping, machinery, and equipment and the required arrangements and clearances are involved.

(l) Except where the preparation of a shop drawing is dependent upon the approval of a prior shop drawing, all shop drawings pertaining to the same class or portion of the work shall be submitted simultaneously.

(m) Calculations of a structural nature must be approved by the Division of State Architect.

(n) THE CONTRACTOR SHALL HAVE NO CLAIM FOR DAMAGES OR EXTENSION OF TIME DUE TO ANY DELAY RESULTING FROM THE CONTRACTOR HAVING TO MAKE THE REQUIRED REVISIONS TO SHOP DRAWINGS UNLESS REVIEW BY THE ARCHITECT OF SAID DRAWINGS IS DELAYED BEYOND THE TIME PROVIDED HEREINBEFORE AND THE CONTRACTOR CAN ESTABLISH THAT THE ARCHITECT'S DELAY IN REVIEW ACTUALLY RESULTED IN A DELAY IN THE CONTRACTOR CONSTRUCTION SCHEDULE. CONTRACTOR SHALL NOT BE ENTITLED TO ANY CLAIM FOR DAMAGES RESULTING FROM DSA REVIEW EXTENDING BEYOND FIFTEEN (15) CALENDAR DAYS AFTER SUBMITTAL. HOWEVER, DISTRICT MAY CONSIDER AN EXTENSION OF TIME DUE TO ANY DELAY CAUSED BY DSA REVIEW.

ARTICLE 24. LAYOUT AND FIELD ENGINEERING

All field engineering if required for laying out of work and establishing grades for earthwork operations shall be furnished by CONTRACTOR at its expense. Such work shall be done by a qualified civil engineer approved by the DISTRICT.

ARTICLE 25. SOILS INVESTIGATION REPORT

(a) When a soils investigation report has been obtained from test holes at the site, such report is available for the CONTRACTOR’S use for work under this Agreement. Such report shall not be part of the Agreement. Any information obtained from such report or any information given on the project documents as to surface and subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed and does not form a part of the Agreement. CONTRACTOR is required to make a visual examination of site and must make whatever test CONTRACTOR deems appropriate to determine surface and subsurface soil conditions. If, during the course of work under this Agreement, CONTRACTOR encounters
subsurface or latent conditions which differ materially from those indicated in the soils investigation report, then CONTRACTOR shall notify the DISTRICT within five (5) working days of discovery of the condition.  

**WARNING:** DISTRICT does not warrant the soils at the project site nor any information contained in any soils report. Soils investigation report is provided for CONTRACTOR’S information only. CONTRACTOR must conduct an independent investigation of the project site and the soils conditions of the site. DISTRICT does not warrant the soils conditions of the site and CONTRACTOR is fully responsible to ascertain site conditions for the purposes of determining construction means and methods prior to commencing construction. 

(b) CONTRACTOR agrees that no claim against DISTRICT will be made by CONTRACTOR for damages and hereby waives any rights to damages in the event that during progress of work CONTRACTOR encounters subsurface or latent conditions at the worksite materially different from those shown on project documents. 

**ARTICLE 26. TESTS AND INSPECTIONS**

(a) Tests and inspections will comply with California Code of Regulations and with all other laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction over the Project.

(b) If the Agreement, DISTRICT’s instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, CONTRACTOR shall give notice in accordance with such authority of its readiness for observation or inspection at least two (2) working days prior to being tested or covered up. If inspection is by authority other than DISTRICT, CONTRACTOR shall inform the DISTRICT’s Inspector of the date fixed for such inspection. Required certificates of inspection shall be secured by CONTRACTOR. Observations by DISTRICT’s Inspector shall be promptly made, and where practicable, at source of supply. If any work should be covered up without approval or consent of DISTRICT’s Inspector, it must be uncovered for examination and satisfactorily reconstructed at CONTRACTOR’s expense in compliance with the Agreement. Costs of tests, inspections and any materials found to be not in compliance with the Agreement shall be paid for by CONTRACTOR. Other costs for test and inspection shall be paid by the DISTRICT.

**ARTICLE 27. TRENCHES**

(a) CONTRACTOR shall provide adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life and limb in trenches and open excavation, which conform to applicable safety standards.

(b) If this Agreement involves the excavation of any trench or trenches five (5) feet or more in depth, and the Project cost is in excess of $25,000, the CONTRACTOR shall, in advance of excavation, submit to the DISTRICT for acceptance or to whomever DISTRICT designates which may include a registered civil or structural engineer employed by the DISTRICT to whom authority to accept has been delegated, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the Shoring System Standards established by the Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer employed by the CONTRACTOR, and all costs therefore shall be included in the price named in the Agreement for completion of the work as set forth in the Project Documents. In no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by CAL-OSHA and a CAL-OSHA permit for such plan delivered to the DISTRICT. Labor Code Section 6500 and 6705; Health and Safety Code Section 17922.5)
If this Agreement involves the digging of trenches or excavations that extend deeper than four feet below the surface, the following shall apply pursuant to Public Contract Code section 7104:

1. The CONTRACTOR shall promptly, and before the following conditions are disturbed, notify the DISTRICT, in writing, of any:

   i. Material that the CONTRACTOR believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

   ii. Subsurface or latent physical conditions at the site different from those indicated.

   iii. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

2. The DISTRICT shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the CONTRACTOR’s cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the Project Documents.

3. In the event a dispute arises between the DISTRICT and the CONTRACTOR, whether the conditions materially differ or involve hazardous waste, or cause a decrease or increase in the CONTRACTOR’s cost of, or time required for, performance of any part of the work, the CONTRACTOR shall not be excused from any scheduled completion date provided for by the Project Documents, but shall proceed with all the work to be performed under the Project Documents. The CONTRACTOR shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

ARTICLE 28. DOCUMENTS ON WORK

CONTRACTOR shall keep on the job site at all times one legible copy of all Project Documents, including addenda and change orders, and all approved drawings, plans, schedules and specifications. Said Documents shall be kept in good order and available to ARCHITECT, ARCHITECT’s representatives, and all authorities having jurisdiction. CONTRACTOR shall be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project.

ARTICLE 29. STATE AUDIT

Pursuant to and in accordance with the provisions of Government Code Section 8546.7, or any amendments thereto, all books, records and files of the DISTRICT, the CONTRACTOR, or any subcontractor connected with the performance of this Agreement involving the expenditure of public funds in excess of Ten Thousand Dollars ($10,000.00), including, but not limited to, the costs of administration of the Agreement, shall be subject to the examination and audit of the State Auditor at the request of the DISTRICT or as part of any audit of the DISTRICT for a period of three (3) years after final payment is made under this Agreement.
ARTICLE 30. SUBSTITUTIONS

(a) Prior to Bid Opening. Should the bidder wish to request prior to bid opening, any substitution for the materials, process, service or equipment specified, the bidder shall submit a written request at least ten (10) working days before the bid opening date and hour. If the substituted item is acceptable, the DISTRICT will approve it in an Addendum issued to all bidders of record. Requests received less than ten (10) working days prior to bid opening will not be considered. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the project.

(b) After Bid Opening and Prior to Award of Contract. If the bidder clearly indicates in its bid that it is proposing to use an “equal” product, the brand name or trade name, if any, of a proposed substitute item shall be inserted in the spaces provided on the SUBSTITUTION REQUEST FORM. Any submittal provided after the aforementioned deadline will not be considered. If the bidder fails to indicate an “equal” product, its bid shall be considered as offering the material, process, service or equipment referred to by the brand name or trade name specified. It is expressly understood and agreed to by the bidder that the DISTRICT reserves the right to reject any such proposed substituted item. It is further expressly understood and agreed by bidder that in the event the DISTRICT rejects a proposed “equal” item, the bidder will then supply the material; process, service or equipment designated by brand name or trade name or a substitute therefore which meets with the approval of the DISTRICT.

The SUBSTITUTION REQUEST FORM: Requests for substitutions of products, materials, or processes in place of a Specified Item must in writing on the District’s Substitution Request Form (“Request Form”) at the time of submitting bids to the District. The SUBSTITUTION REQUEST FORM must be accompanied by evidence as to whether the proposed substitution:

1. Is equal in quality/service/ability to the Specified Item;
2. Will entail no changes in detail, construction, and scheduling of related work;
3. Will be acceptable in consideration of the required design and artistic effect;
4. Will provide no cost disadvantage to the District;
5. Will require no excessive or more expensive maintenance, including adequacy and availability of replacement parts; and
6. Will required no change of the construction schedule.

In completing the SUBSTITUTION REQUEST FORM, the bidder must state, with respect to each requested substitution, whether the bidder will agree to provide the Specified Item in the event that the District denies the bidder’s request for such requested substitution. In the event that the bidder has agreed in the Request Form to provide the Specified Item and the District denies the bidder’s requested substitution for a Specified Item, the bidder shall provide the Specified Item without any additional cost or charge to the District.

With respect to all proposed substitutions of “equal” items, the bidder shall submit all pertinent and appropriate data substantiating its request for substitutions within fifteen (15) days prior to the award of the contract. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the Project. The DISTRICT is not responsible for locating or securing any information which is not included in such substantiating data. The burden of proof as to the quality or suitability of proposed substituted items shall be borne by the bidder. The DISTRICT shall be the sole judge as to the quality and suitability of proposed substituted items, and decisions of the DISTRICT shall be final and conclusive. Unless extended by the mutual agreement of the parties, the DISTRICT shall notify the successful bidder of the decision concerning the
proposed substitution of “equal” items prior to the award of the contract. Also such decisions by the DISTRICT shall be in writing, and no proposed substituted item shall be deemed approved unless the DISTRICT has so indicated in writing. These time limitations shall be complied with strictly, and in no case will an extension of time for completion be granted because of the bidder’s failure to request the substitution of an item at the times and in the manner set forth herein.

(c) Whenever in specifications any materials, process, service or equipment is indicated or specified by brand name, trade name, proprietary name or by name of manufacturer, such specification shall be deemed to be used for the purpose of facilitating description of material, process, service or equipment desired and shall be deemed to be followed by the words "or equal," and CONTRACTOR may, unless otherwise stated, offer any material, process, service, or equipment which shall be substantially equal or better in every respect to that so indicated or specified subject to DISTRICT or ARCHITECT approval.

(d) If material, process, service, or equipment offered by CONTRACTOR is not, in opinion of ARCHITECT, or DISTRICT, substantially equal or better in every respect to that specified, then CONTRACTOR shall furnish the material, process, service, or equipment specified. Burden of proof as to equality of any material, process, service, or equipment shall rest with CONTRACTOR. Provision authorizing submission of "or equal" substantiating data shall not in any way authorize an extension of time for performance of this Agreement.

(e) In the event CONTRACTOR furnishes material, process, service or equipment other than what was specified by the DISTRICT and which has been accepted by the DISTRICT and which later is defective, then CONTRACTOR at its sole cost and expense shall furnish the DISTRICT specified material, process, service or equipment or fully replace with new the defective material process, service or equipment at DISTRICT’s discretion.

(f) In the event CONTRACTOR furnishes material, process service, or equipment more expensive than that specified, difference in cost of such material, process, service, or equipment so furnished shall be borne by CONTRACTOR. Any engineering, design fees, or approval agencies’ fees required to make adjustments in material or work of all trades directly or indirectly affected by the approved substituted items shall be borne entirely by CONTRACTOR. Any difference in cost between an approved substitution which is lower in cost than the originally specified item shall be refunded or credited by CONTRACTOR to DISTRICT.

(g) Price, fitness and quality being equal with regard to supplies, the District may prefer supplies grown, manufactured, or produced in California and next prefer supplies partially manufactured grown, or produced in California provided the bids of said suppliers or the prices quoted by them do not exceed by more than 5% of the lowest bids/prices quoted by out of state suppliers, the major portion of the manufacture of the supplies is not done outside of California and the public good will be served thereby. (Government Code section 4330-4334)

**ARTICLE 31. SAMPLES**

(a) CONTRACTOR shall furnish for approval, within thirty-five (35) calendar days following award of contract, all samples as required in specifications together with catalogs and supporting data required by ARCHITECT. This provision shall not authorize any extension of time for performance of the work. ARCHITECT shall review such samples, as to conformance with design concept of work and for compliance with information given in Project Documents and approve or disapprove same within ten (10) working days from receipt of same.
(b) Unless specified otherwise, sampling, preparation of samples and tests shall be in accordance with the latest standards of the American Society for Testing and Materials.

(c) Samples shall, upon demand of ARCHITECT or DISTRICT, be submitted for tests or examinations and considered before incorporation of same into the work. CONTRACTOR shall be solely responsible for delays due to samples not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect. Samples which are of value after testing will remain the property of the CONTRACTOR.

**ARTICLE 32. PROGRESS SCHEDULE**

(a) Within five (5) calendar days after Board approval of contract, CONTRACTOR shall submit a preliminary schedule that describes the work sequence planned in the first 30 days of construction. Within 21 calendar days following Board approval of contract, CONTRACTOR shall prepare and submit for DISTRICT’s acceptance the Initial Construction Schedule. The schedule shall indicate the beginning and completion dates of all phases of construction and shall use the "critical path method" (commonly called CPM) or equivalent scheduling methodology for the value reporting, planning and scheduling, of all work required under the Project Documents. The schedule will separately identify those milestones or events that must be completed before other portions of the work can be accomplished.

(b) The scheduling is necessary for the DISTRICT’s adequate monitoring of the progress of the work and shall be prepared in accordance with the time frame described in Article 4 of the Agreement. The DISTRICT may reject such a schedule and require modification to it if, in the opinion of the ARCHITECT or DISTRICT, adherence to the progress schedule will cause the work not to be completed in accordance with the Agreement. CONTRACTOR shall adhere to any such modifications required by the DISTRICT.

(c) CONTRACTOR will exchange scheduling information with subcontractors and suppliers. CONTRACTOR will order work, equipment and materials with sufficient lead time to avoid interruption of the work.

(d) The CONTRACTOR shall submit to DISTRICT a monthly schedule to reflect the actual sequence of the work which shall be totally separate and apart from the original progress schedule.

(e) The CONTRACTOR shall also, if requested by the ARCHITECT or DISTRICT, provide revised schedules within ten (10) calendar days if, at any time, the ARCHITECT or DISTRICT, consider the completion date to be in jeopardy. The revised schedule shall be designed to show how the CONTRACTOR intends to accomplish the work to meet the original completion date. The form and method employed by the CONTRACTOR shall be the same as for the original progress schedule. The CONTRACTOR shall modify any portions of the schedule that become infeasible because of "activities behind schedule" or for any other valid reason. CONTRACTOR will provide documents and justification for any schedule changes. An activity that cannot be completed by its original completion date shall be deemed to be behind schedule.

(f) CONTRACTOR shall submit a revised schedule within ten (10) consecutive calendar days of CONTRACTOR’s request for any extension of time. Failure to submit such schedule will result in CONTRACTOR waiving his/her right to obtain any extension of time.

(g) IT IS AGREED THAT THE DISTRICT OWNS THE “FLOAT” ON THIS PROJECT. IF CONTRACTOR SUBMITS A REVISED SCHEDULE SHOWING AN EARLIER COMPLETION DATE
FOR THE PROJECT, DISTRICT’s ACCEPTANCE OF THIS REVISED SCHEDULE SHALL NOT
ENTITLE CONTRACTOR TO ANY DELAY CLAIM OR DISRUPTION DAMAGES OR ANY OTHER
DAMAGES DUE TO ANY SUCH REVISED SCHEDULE. NOTHING PROVIDED HEREIN SHALL BE
CONSTRUED AS A DIRECT, INDIRECT OR IMPLICIT ACCELERATION ORDER TO THE
CONTRACTOR.

(h) CONTRACTOR agrees that failure to timely submit the progress schedule, the monthly schedule or
any revised progress schedule requested by the ARCHITECT or the DISTRICT may result in delay in payment
to CONTRACTOR.

(i) In addition to the requirement to update the baseline schedule, CONTRACTOR is responsible to
provide a four week rolling schedule at each progress meeting. This Schedule will include activities that are 1
week behind the Data Date and 3 weeks ahead of the Data Date. The Data Date shall be the date of the progress
meeting. Schedule shall include information for all trades on-site. Schedule will identify any work that is
proposed outside the regular working hours.

ARTICLE 33. TIME ALLOWANCES

(a) DISTRICT will serve a Notice to Proceed upon Contractor by hand delivery, facsimile, email or
delivery to Contractor at legal address.

(b) Start date for Contract Times shall be on the date indicated in the Notice to Proceed. If no date is
indicated, then the start date for contract time shall be the 5th calendar day from date that Contractor receives
DISTRICT’s written Notice to Proceed, unless the Notice to Proceed is served by mail only, then the Start Date
under the Contract shall be the tenth (10th) calendar day following the date of mailing. The Contractor shall
commence work on such day, and shall prosecute the Work diligently to completion thereafter. No work shall
commence before contract bonds and insurance certificates have been filed with the DISTRICT and the contract
has been signed by the DISTRICT.

(c) CHANGE OF CONTRACT TIMES

(1) The contract times may only be changed by change order or written amendment and time is
of this essence in this Agreement.

(2) The Contract Times will be adjusted in an amount equal to the time lost as shown on a critical
path schedule due to the following:

(i) Changes in the Work ordered by DISTRICT;

(ii) Acts or neglect by DISTRICT’s consultants, acts or neglect of utility districts, acts or neglect
of other Contractors performing other Work, provided Contractor has fully and completely
performed its responsibilities under the Contract Documents, including but not limited to, its
cooperation and coordination responsibilities required by the Contract Documents;

Fires, floods, abnormal weather conditions, earthquakes, civil disturbances, or acts of God,
provided damage resulting from same is not the result of Contractor's failure to properly protect
the Work as required by the Contract Documents. Notwithstanding the foregoing, the contract
times shall not be extended unless Contractor has actually been prevented from completing any part of the Work within the contract time due to delay which is (i) beyond the control of Contractor and (ii) due to reasons for which Contractor is not responsible and (iii) a claim for delay is made as provided for herein. Delays attributable to and within the control of a Subcontractor, or its subcontractors, or supplier shall be deemed to be delays within the control of Contractor.

Contractor shall have no right to an adjustment in the time of completion due to weather conditions which are normal for the locality of the site. The time period for completion of the project has been determined with consideration given to the average climatic range prevailing in the locality of the site.

(3) Where Contractor is prevented from completing any part of the Work within the contract due to delay beyond the control of both DISTRICT and Contractor, an extension of contract times in an amount equal to the time loss due to such delay shall be the Contractor's sole and exclusive remedy for such delay. DISTRICT shall not be liable to Contractor, any Subcontractor, any supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of Contractor, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by utility districts.

(4) Delays due to adverse weather conditions will not be allowed for weather conditions which do not directly impact the performance of the critical path. Whenever the Contractor has undertaken an exterior critical path activity which is directly impacted by adverse weather conditions, the Contractor shall immediately notify the DISTRICT of the potential delay to such activity. The DISTRICT shall inspect the site, meet with the Contractor and confirm that the exterior critical path activity is impacted and grant an extension of the Contract Times sufficient to allow the Contractor to perform the impacted activity.

(5) If delays acceptable for evaluation occur concurrently, the maximum extension of the Contract time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last.

(6) Delay in completion of the Work beyond the expiration of the contract time resulting from causes other than those listed as acceptable for evaluation are considered inexcusable delays and shall not entitle the Contractor to an extension of the contract time or an adjustment of the Contract amount.

If an inexcusable delay occurs concurrently with acceptable delays for evaluation, the maximum extension of the Contract Time shall be the number of days, if any, by which the duration of a delay exceeds the inexcusable delay. The duration of concurrence is non-compensable.

(d) NOTICE OF DELAY

(1) Notice shall constitute application for extension of time only if notice requests extension and sets forth the impact of the delay on the critical path and Contractor's estimate of additional time required together with full recital of causes of unavoidable delays relied upon.
(2) After receipt of a request for a time extension, with verifiable documents and justifications included, DISTRICT will make decision thereon, and will advise Contractor in writing.

(3) No time extensions shall be considered without related documents and justifications necessary for DISTRICT to make determination.

(4) No time extensions shall be granted for delays for which Contractor fails to give timely notice and Contractor hereby waives any and all damages for delay for which timely notice is not given.

(5) Any request for extension of time shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant is entitled as a result of the occurrence of said event. All claims and adjustments in the contract times shall be determined by DISTRICT. No claim for an adjustment in the contract times will be valid and such claim will be waived if not submitted in accordance with the requirements of this paragraph.

(6) The Contractor's failure to perform in accordance with the construction schedule shall not be excused because the Contractor has submitted time extension requests, unless and until such requests are approved by DISTRICT.

(e) NO DAMAGE FOR CONTRACTOR CAUSED DELAY

Contractor shall not be entitled to any compensation, including but not limited to extended field or home office overhead, field supervision, costs of capital, interest, escalation charges, acceleration costs or other impacts for any delays caused in whole or in part by Contractor's failure to perform its obligations under this Contract, or during periods of delay concurrently caused by Contractor and either DISTRICT or others. Contractor may be compensated for delays caused directly and solely by DISTRICT except that Contractor shall not be entitled to damages for delay to the Work caused by the following reasons:

(1) DISTRICT's right to sequence Work in manner which would avoid disruption to the DISTRICT's tenants and their contractors or other prime contractors and their respective subcontractors, exercised as a result of Contractor's failure to perform its cooperation and coordination responsibilities required by this Contract;

(2) DISTRICT's enforcement of government act or regulation, or the provisions of the Contract Documents; and

(3) Extensive requests for clarifications to construction documents or modifications to contract, provided such clarifications or modifications are processed by DISTRICT or its consultants in a reasonable time commensurate with provisions of Contract requirements.

(f) EXTENSION OF TIME DOES NOT WAIVE DISTRICT'S RIGHTS

Granting of time extension for any reason shall in no way operate as waiver on part of DISTRICT, of right to collect liquidated damages for other delays or of right to collect other damages or other rights to which DISTRICT is entitled.
ARTICLE 34. MATERIALS AND WORK

(a) Except as otherwise specifically stated in this Agreement, CONTRACTOR shall provide and pay for all materials, supplies, tools, equipment, labor transportation, superintendence, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete the Project within specified time.

(b) Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted or specified, and workmanship shall be of good quality.

(c) Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of work and shall be stored properly and protected as required. DISTRICT has no obligation to pay for any prefabricated material stored offsite until delivered and installed to the jobsite and inspected and approved by the inspector of record.

(d) CONTRACTOR shall, after issuance of the Notice to Proceed by DISTRICT, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the work. CONTRACTOR shall, upon demand from the ARCHITECT, furnish to the ARCHITECT documentary evidence showing that orders have been placed.

(e) DISTRICT reserves the right, for any neglect in not complying with the above instructions, to place orders for such materials and/or equipment as it may deem advisable in order that the work may be completed at the date specified in the Agreement, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by the CONTRACTOR.

(f) No materials, supplies, or equipment for work under this Agreement shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by seller or supplier. CONTRACTOR warrants good title to all material, supplies, and equipment installed or incorporated in work and agrees upon completion of all work to deliver premises, together with all improvements and appurtenances constructed or placed thereon by it, to DISTRICT free from any claims, liens, or charges. CONTRACTOR further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any work covered by this Agreement shall have any right to lien upon premises or any improvement or appurtenance thereon, except that CONTRACTOR may install metering devices or other equipment of utility companies or of political subdivisions, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, CONTRACTOR shall advise DISTRICT as to owner thereof.

(g) Nothing contained in this Article 33, however, shall defeat or impair the rights of persons furnishing material or labor under any bond given by CONTRACTOR for their protection or any rights under any law permitting such persons to look to funds due CONTRACTOR in hand of DISTRICT, and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials or labor when no formal contract is entered into for such materials or labor.

(h) The title to new materials and/or equipment and attendant liability for its protection and safety, shall remain in the CONTRACTOR until incorporated in the work and accepted by the DISTRICT; no part of said materials and/or equipment shall be removed from its place of onsite/offsite storage except for immediate installation in the work; and CONTRACTOR shall keep an accurate inventory of all said materials and/or equipment in a manner satisfactory to the DISTRICT or its authorized representative.
ARTICLE 35. INTEGRATION OF WORK

(a) CONTRACTOR shall do all cutting, fitting, patching, and preparation of work as required to make its several parts come together properly, and fit it to receive or be received by work of other contractors or existing conditions showing upon, or reasonably implied by, the drawings and specifications, and shall follow all directions given by the Architect.

(b) All costs caused by defective or ill-timed work shall be borne by CONTRACTOR.

(c) CONTRACTOR shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor without the written consent of the ARCHITECT. CONTRACTOR shall be solely responsible for protecting existing work on adjacent properties and shall obtain all required permits for shoring and excavations near property lines.

(d) When modifying existing work or installing new work adjacent to existing work, CONTRACTOR shall match, as closely as conditions of site and materials will allow, the finishes, textures, and colors of the original work, refinishing existing work as required, at no additional cost to DISTRICT.

(e) CONTRACTOR is aware that this Project may be split into several phases. If the Project is split into phases then CONTRACTOR has made allowances for any delays or damages which may arise from coordination with contractors for other phases. If any delays should arise from a contractor working on a different phase, CONTRACTOR's sole remedy for damages, including delay damages, shall be against the contractor who caused such damage and not the DISTRICT. CONTRACTOR shall provide access to contractors for other phases as necessary to prevent delays and damages to contractors working on other phases of construction.

ARTICLE 36. OBTAINING OF PERMITS, LICENSES AND EASEMENTS

(a) Permits, licenses, and certificates necessary for prosecution of work, shall be secured and paid for by CONTRACTOR, unless otherwise specified. All such permits, licenses, and certificates shall be delivered to the ARCHITECT before demand is made for the certificate of final payment. CONTRACTOR shall, and shall require subcontractors to, maintain contractors' licenses in effect as required by law.

(b) Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by DISTRICT, unless otherwise specified.

(c) Permits and charges for installation, and inspection thereof, of utility services by serving utilities shall be secured and paid for by DISTRICT.

ARTICLE 37. SURVEYS

Surveys to determine location of property lines and corners will be supplied by DISTRICT. Surveys to determine locations of construction, grading, and site work, shall be provided by CONTRACTOR.
ARTICLE 38. EXISTING UTILITY LINES; REMOVAL, RESTORATION

(a) Pursuant to Government Code Section 4215, the DISTRICT assumes the responsibility for removal, relocation, and protection of utilities located on the construction site at the time of commencement of construction under this Agreement with respect to any such utility facilities which are not identified in the plans and specifications. The CONTRACTOR shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of the DISTRICT to provide for removal or relocation of such utility facilities. If the CONTRACTOR, while performing work under this Agreement, discovers utility facilities not identified by the DISTRICT in the plans or specifications, CONTRACTOR shall immediately notify the DISTRICT and the utility in writing. CONTRACTOR shall be compensated according to the provisions governing changes in the work.

(b) This Article 37 shall not be construed to preclude assessment against the CONTRACTOR for any other delays in completion of the work. Nothing in this Article shall be deemed to require the DISTRICT to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the construction site can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the site of the construction.

(c) As part of the work to be performed, CONTRACTOR shall provide the notices and proceed in accordance with Government Code Sections 4216.2, 4216.3 and 4216.4, and pay all fees charged pursuant to Government Code Section 4216, et seq.

ARTICLE 39. WORK TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS

(a) CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to the work as indicated and specified.

(b) If CONTRACTOR observes that drawings or specifications are at variance therewith, CONTRACTOR shall promptly notify ARCHITECT in writing and any changes deemed necessary by the ARCHITECT shall be adjusted as provided for changes in work. If CONTRACTOR performs any work which it knew, or through exercise of reasonable care should have known, to be contrary to such laws, ordinances, rules or regulations, and without such notice to ARCHITECT, CONTRACTOR shall bear all costs arising therefrom. Where plans, drawings or specifications state that materials, processes, or procedures must be approved by the Division of State Architect, State Fire Marshall, or other body or agency, CONTRACTOR shall be responsible for satisfying requirements of such bodies or agencies.

ARTICLE 40. ACCESS TO WORK

DISTRICT and its representatives shall at all times have access to work wherever it is in preparation or progress. CONTRACTOR shall provide safe and proper facilities for such access so that DISTRICT’s representatives may perform their functions.

ARTICLE 41. PAYMENTS BY CONTRACTOR

CONTRACTOR shall pay:

(1) For all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered;
(2) For all materials, tools, and other expendable equipment to the extent of ninety percent (90%) of cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at site of Project and balance of cost thereof not later than the 30th day following completion of that part of work in or on which such materials, tools, and equipment are incorporated or used; and

(3) To each of its subcontractors, not later than the 5th day following each payment to CONTRACTOR the respective amounts allowed CONTRACTOR on account of work performed by respective subcontractor to the extent of such subcontractor's interest therein.

(4) Within seven (7) days from the time that all or any portion of the retentions are received by CONTRACTOR from DISTRICT, to each of its subcontractors from whom retention has been withheld, each subcontractor’s share of the retention received. However, if a retention payment received by CONTRACTOR is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor, if the payment is consistent with the terms of the subcontract. CONTRACTOR may withhold from a subcontractor its portion of the retentions if a bona fide dispute exists between the subcontractor and the CONTRACTOR. The amount withheld from the retention shall not exceed one hundred fifty percent (150%) of the estimated value of the disputed amount.

ARTICLE 42. INSPECTOR'S FIELD OFFICE - NOT APPLICABLE

CONTRACTOR shall provide for the exclusive use of Inspector a temporary field office to be located as directed by Inspector and to be maintained until removal is authorized by DISTRICT. Office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. Door shall have a key-type lock or padlock hasp. A table satisfactory for study of plans and two chairs shall be provided by CONTRACTOR. CONTRACTOR shall provide and pay for adequate electric lights, telephone service (not a pay phone), and adequate heat for the field office until authorized removal.

ARTICLE 43. UTILITIES

(a) All utilities, including but not limited to electricity, water, gas, and telephone used on work shall be furnished and paid for by CONTRACTOR. CONTRACTOR shall furnish and install necessary temporary distribution systems, including meters, if necessary, from distribution points to points on site where utility is necessary to carry on the work. When it is necessary to interrupt any existing utility service to make connections, a minimum of forty-eight (48) hours advance notice shall be given to the DISTRICT, the College Director of Facilities and ARCHITECT. Interruptions in utility services shall be of the shortest possible duration for the work at hand and shall be approved by the DISTRICT and the ARCHITECT. In the event any utility service is interrupted without the required forty-eight (48) hours notice, then CONTRACTOR shall be liable for all damage suffered by DISTRICT due to the interruption. Upon completion of work, CONTRACTOR shall remove all temporary distribution systems.

(b) CONTRACTOR may, with written permission of DISTRICT, use DISTRICT’s existing utilities by making prearranged payments to DISTRICT for utilities used by CONTRACTOR for the Project.
ARTICLE 44. SANITARY FACILITIES

The CONTRACTOR shall provide sanitary temporary toilet and wash facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The toilet facilities shall be maintained in a sanitary condition at all times and shall be left at the site until removal is directed by the Inspector. Use of toilet and wash facilities in the work under construction shall not be permitted.

ARTICLE 45. CLEANING UP

CONTRACTOR at all times shall keep work site free from debris such as waste, rubbish, and excess materials and equipment caused by this work. CONTRACTOR shall not leave debris under, in, or about the work site, but shall promptly remove same. Upon completion of work, CONTRACTOR shall clean interior and exterior of building, including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected. CONTRACTOR shall clean and polish all glass, plumbing fixtures, and finish hardware and similar finish surfaces and equipment and remove temporary fencing, barricades, planking, sanitary facilities and similar temporary facilities from site. If CONTRACTOR fails to clean up, the DISTRICT shall do so and the cost thereof shall be charged to the CONTRACTOR and deducted from any progress payment due.

ARTICLE 46. PATENTS, ROYALTIES, AND INDEMNITIES

The CONTRACTOR shall hold and save the DISTRICT and its governing board, officers, agents, and employees harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of this Agreement, including its use by the DISTRICT, unless otherwise specifically provided in the Project Documents, and unless such liability arises from the sole negligence, or active negligence, or willful misconduct of the DISTRICT.

ARTICLE 47. GUARANTEE

(a) CONTRACTOR warrants that the work (which includes any equipment furnished by CONTRACTOR as part of the materials) shall: (a) be free from defects in workmanship and material; (b) be free from defects in any design performed by CONTRACTOR; (c) be new, and conform and perform to the requirements stated in the specifications and where detail requirements are not so stated, shall conform to applicable industry standards; and (d) be suitable for the use stated in the specifications.

(b) The warranty period for discovery of defective work shall commence on the date stamped on theNotice of Completion verifying County recordation and continue for the period set forth in the specifications or for one year if not so specified. If, during the warranty period, the work is not available for use due to defective work, such time of unavailability shall not be counted as part of the warranty period. The warranty period for corrected defective work shall continue for a duration equivalent to the original warranty period.

(c) District shall give CONTRACTOR prompt written notice after discovery of any defective work. CONTRACTOR shall correct any such defective work, as well as any damage to any other part of the work resulting from such defective work, and provide repair, replacement, or reimbursement, at its sole expense, in a manner approved by the DISTRICT and with due diligence and dispatch as required to make the work ready for use by DISTRICT, ordinary wear and tear, unusual abuse or neglect excepted. Such corrections shall include,
but not be limited to, any necessary adjustments, modifications, changes of design (unless of DISTRICT’s design), removal, repair, replacement or reinstallation, and shall include all necessary parts, materials, tools, equipment, transportation charges and labor as may be necessary, and cost of removal and replacement of work shall be performed at a time and in such a manner so as to minimize the disruption to DISTRICT’s use of the work.

(d) In the event of failure of CONTRACTOR or Surety to commence and pursue with diligence said repairs or replacements within ten (10) calendar days after being notified in writing, DISTRICT is hereby authorized to proceed to have defects repaired or replaced and made good at expense of CONTRACTOR and Surety who hereby agree to pay costs and charges therefore immediately on demand.

(e) If, in the opinion of the DISTRICT, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the DISTRICT or to prevent interruption of operations of the DISTRICT, the DISTRICT will attempt to give the written notice required by this Article. If the CONTRACTOR or Surety cannot be contacted or neither complies with the DISTRICT’s requirements for correction within a reasonable time as determined by the DISTRICT, the DISTRICT may, notwithstanding the provisions of this Article, proceed to make such correction or provide such attention and the costs of such correction or attention shall be charged against the CONTRACTOR and Surety. Such action by the DISTRICT will not relieve the CONTRACTOR and Surety of the guarantees provided in this Article or elsewhere in the Project Documents.

(f) This Article does not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. CONTRACTOR shall furnish to DISTRICT all appropriate guarantee or warranty certificates upon completion of the Project or upon request by DISTRICT.

(g) All guarantees required under this Article shall be in writing on the Guarantee form included in the Project Documents.

(h) CONTRACTOR shall provide to DISTRICT instruction manuals for all items which require same.

(i) Nothing herein shall limit any other rights or remedies available to DISTRICT.

(j) The DISTRICT may collect its reasonable costs and attorneys' fees in any action to enforce this Article.

**ARTICLE 48. DUTY TO PROVIDE FIT WORKERS**

(a) CONTRACTOR and subcontractors shall at all times enforce strict discipline and good order among their employees and shall not employ on work any unfit person or anyone not skilled in work assigned to such person. It shall be the responsibility of CONTRACTOR to ensure compliance with this Article.

(b) Any person in the employ of the CONTRACTOR or subcontractors whom DISTRICT or ARCHITECT may deem incompetent, unfit, troublesome or otherwise undesirable shall be excluded from the work site and shall not again be employed on it except with written consent of DISTRICT.
ARTICLE 49. WAGE RATES, TRAVEL AND SUBSISTENCE

(a) Pursuant to the provisions of Article 2 (commencing at Section 1770), Chapter 1, Part 7, Division 2 of the Labor Code, the governing board of DISTRICT has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification or type of worker needed for this Project from the Director of the Department of Industrial Relations ("Director."). These rates are on file with the Clerk of the DISTRICT's governing board and copies will be made available to any interested party on request. CONTRACTOR shall post a copy of such wage rates at the work site. Labor Code Section 1773.2. The rates are available on the Internet at www.dir.ca.gov “Statistics & Research.”

(b) Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half times the above specified rate of per diem wages, unless otherwise specified. Holidays shall be defined in the Collective Bargaining Agreement applicable to each particular craft, classification or type of worker employed.

(c) CONTRACTOR shall pay and shall cause to be paid each worker engaged in work on the Project not less than the general prevailing rate of per diem wages determined by the Director, regardless of any contractual relationship which may be alleged to exist between the CONTRACTOR or any subcontractor and such workers.

(d) CONTRACTOR shall pay and shall cause to be paid to each worker needed to execute the work on the Project travel and subsistence payments, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed with the Department of Industrial Relations in accordance with Labor Code Section 1773.8.

(e) If during the period this bid is required to remain open, the Director of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which this public work is to be performed, such change shall not alter the wage rates in the Notice Calling for Bids or the contract subsequently awarded.

(f) Pursuant to Labor Code Section 1775, CONTRACTOR shall as a penalty to the DISTRICT, forfeit fifty dollars ($50) for each calendar day, or portion thereof, for each worker paid less than the prevailing rate of per diem wages, determined by the Director, for such craft or classification in which such worker is employed for any public work done under the Agreement by CONTRACTOR or by any subcontractor under it. The amount of the penalty shall be determined by the Labor Commission and shall be based on consideration of the CONTRACTOR's mistake, inadvertence or neglect in failing to pay the correct prevailing rate of per diem wage, or the previous record of the CONTRACTOR in meeting his or her prevailing rate of per diem wage obligations, or the CONTRACTOR's willful failure to pay the correct prevailing rate of per diem wages. A mistake, inadvertence or neglect in failing to pay the correct prevailing rate of per diem wage is not excusable if the CONTRACTOR had knowledge of his or her obligations under this part. The difference between such prevailing rate of per diem wage and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing rate of per diem wage shall be paid to each worker by the CONTRACTOR.

(g) Any worker employed to perform work on the Project, which work is not covered by any craft or classification listed in the general prevailing rate of per diem wages determined by the Director shall be paid not less than the minimum rate of wages specified therein for the craft or classification which most nearly
corresponds to work to be performed by them, and such minimum wage rate shall be retroactive to time of initial employment of such person in such craft or classification.

(h) Pursuant to Labor Code Section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided for in Labor Code Section 1773.8.

(i) CONTRACTOR shall post at appropriate conspicuous points on the site of the Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned.

ARTICLE 50. HOURS OF WORK

(a) As provided in Article 3, (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by the CONTRACTOR or by any subcontractor on any subcontract under this Agreement upon the work or upon any part of the work contemplated by this Agreement shall be limited and restricted by the Agreement to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinafter set forth, work performed by employees of CONTRACTOR in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

(b) The CONTRACTOR shall keep and shall cause each subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by CONTRACTOR in connection with the work or any part of the work contemplated by this Agreement. The record shall be kept open at all reasonable hours to the inspection of the DISTRICT and to the Division of Labor Standards Enforcement, Department of Industrial Relations.

(c) Pursuant to Labor Code Section 1813, the CONTRACTOR shall pay to the DISTRICT a penalty of Twenty-Five Dollars ($25) for each worker employed in the execution of this Contract by the CONTRACTOR or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Article 3 (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.

(d) Any work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to DISTRICT.

ARTICLE 51. PAYROLL RECORDS

(a) Pursuant to the provisions of Labor Code Section 1776, the CONTRACTOR shall keep and shall cause each subcontractor performing any portion of the work under this Agreement to keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by CONTRACTOR in connection with the work.

(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the CONTRACTOR on the following basis:
(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the DISTRICT, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection upon request by the public or copies thereof made; provided, however, that a request by the public shall be made through either the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the CONTRACTOR, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the CONTRACTOR.

(4) The form of certification shall be as follows:

I, ______________________ (Name-print), the undersigned, am ________________ (position in business) with the authority to act for and on behalf of

__________________________________________ (Name of business and/or CONTRACTOR),
certify under penalty of perjury that the records or copies thereof submitted and consisting of

__________________________________________ (description, number of pages) are the originals or true, full and correct copies of the originals which depict the payroll record(s) of the actual disbursements by way of cash, check, or whatever form to the individual or individuals named.

Dated: _____ Signature: ____________________________________________

(c) Contractor shall file a certified copy of the payroll records enumerated in subdivision (a) with the entity that requested the records within ten (10) days after receipt of a written request. In the event that the CONTRACTOR fails to comply within the 10-day period, the CONTRACTOR shall, as a penalty to the DISTRICT, forfeit Twenty-Five Dollars ($25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

(d) Any copy of payroll records made available for inspection as copies and furnished upon request to the public by the DISTRICT, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement 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 the CONTRACTOR shall not be marked or obliterated.
(e) The CONTRACTOR shall inform the DISTRICT of the location of the payroll records enumerated under subdivision (a), including the street address, city and county, and shall, within five (5) working days, provide a written notice of a change of location and address.

(f) It shall be the responsibility of the CONTRACTOR to ensure compliance with the provisions of this Article 50 and the provisions of Labor Code Section 1776.

ARTICLE 52. APPRENTICES

(a) The CONTRACTOR acknowledges and agrees that, if this Agreement involves a dollar amount greater than or a number of working days greater than that specified in Labor Code Section 1777.5, this Agreement is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of the CONTRACTOR to ensure compliance with this Article 51 and with Labor Code Section 1777.5 for all apprenticing occupations.

(b) Apprentices of any crafts or trades may be employed and, when required by Labor Code Section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

(c) Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered.

(d) Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4 (commencing at Section 3070), Division 3 of the Labor Code, are eligible to be employed on public works. The employment and training of each apprenticeship shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he or she is training.

(e) Pursuant to Labor Code Section 1777.5, the CONTRACTOR and any subcontractors employing workers in any apprenticeship craft or trade in performing any work under this Agreement shall employ apprentices in at least the ratio set forth in Section 1777.5 and apply to the applicable joint apprenticeship committee for a certificate approving the CONTRACTOR or subcontractor under the applicable apprenticeship standards for the employment and training of apprentices.

(f) Every contractor and subcontractor shall submit contract award information to the applicable joint apprenticeship committee which shall include an estimate of journeyman hours to be performed under the Agreement, the number of apprentices to be employed and the approximate dates the apprentices will be employed.

(g) If the CONTRACTOR or subcontractor willfully fails to comply with Labor Code Section 1777.5, then, upon a determination of noncompliance by the Chief of the Division of Apprenticeship Standards, the CONTRACTOR or subcontractor shall be subject to the penalties imposed under Labor Code Section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council.

(h) The CONTRACTOR and all subcontractors shall comply with Labor Code Section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.
(i) CONTRACTOR shall become fully acquainted with the law regarding apprentices prior to commencement of the work. Special attention is directed to Sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and Title 8, California Code of Regulations, Section 200, et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 8th Floor, San Francisco, California 94102, (415) 703-4920.

ARTICLE 53. LABOR - FIRST AID

The CONTRACTOR shall maintain emergency first aid treatment for CONTRACTOR's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C.A., Sec. 651, et seq.).

ARTICLE 54. PROTECTION OF PERSONS AND PROPERTY

(a) The CONTRACTOR shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Agreement and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the DISTRICT. CONTRACTOR shall provide such heat, covering, and enclosures as are necessary to protect all work, materials, equipment, appliances, and tools against damage by weather conditions. All work shall be solely at the CONTRACTOR's risk with the exception of damage to the work caused by "acts of God" as defined in Public Contract Code Section 7105.

(b) CONTRACTOR shall take, and require subcontractors to take, all necessary precautions for safety of workers and shall comply with all applicable federal, state, local and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to the work site and to provide a safe and healthful place of employment. CONTRACTOR shall furnish, erect and properly maintain at all times, as directed by DISTRICT or ARCHITECT or required by conditions and progress of work, all necessary safety devices, safeguards, construction canopies, signs audible devices for protection of the blind, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction. CONTRACTOR shall designate a responsible employee, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety and health of workers. Name and position of person so designated shall be reported in writing to DISTRICT by CONTRACTOR. CONTRACTOR shall correct any violations of safety laws, standards, orders, rules, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, such violation shall be corrected immediately by the CONTRACTOR at CONTRACTOR's expense.

(c) In an emergency affecting safety of person or of work or of adjoining property, CONTRACTOR, without special instruction or authorization from ARCHITECT or DISTRICT, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury; and CONTRACTOR shall so act if so authorized or instructed by Architect or DISTRICT. Any compensation claimed by CONTRACTOR on account of emergency work shall be determined by written agreement with the DISTRICT.

(d) CONTRACTOR shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.
(e) CONTRACTOR shall (unless waived by the DISTRICT in writing):

(1) When performing new construction on existing sites, become informed and take into specific account the maturity of the students on the site; perform work which may interfere with school routine before or after school hours; enclose working area with a substantial barricade; not allow any unauthorized individuals on the site; require all workers on the Project to be conspicuously identified either by a firm logo on their clothing or prominent identification badge and arrange work to cause a minimum amount of inconvenience and danger to students and faculty in their regular school activities.

(2) Provide substantial barricades around any shrubs or trees indicated to be preserved.

(3) Deliver materials to building area over route designated by ARCHITECT.

(4) When directed by DISTRICT, take preventive measures to eliminate objectionable dust.

(5) Enforce all instructions of DISTRICT and ARCHITECT regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on construction site.

(6) Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved civil engineer at no cost to the DISTRICT.

ARTICLE 55. NON-DISCRIMINATION

In the performance of the terms of this Agreement, CONTRACTOR agrees that it will not engage in nor permit such subcontractor as it may employ to engage in unlawful discrimination in employment of persons because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, age or sex of such persons.

ARTICLE 56. SCHEDULE OF VALUES AND PERIODICAL ESTIMATES

(a) CONTRACTOR shall furnish on form(s) approved by DISTRICT:

(1) Within ten (10) calendar days of award of contract a detailed schedule of values giving complete breakdown of contract price for each component of the Project or site which shall include all subcontractor/supplier agreements showing dollar amounts of these agreements to justify the schedule of values; and

(2) A periodical itemized estimate of work done for purpose of making partial payments thereon. Change order work shall be clearly identified on a separate schedule of values.

(3) Within ten (10) calendar days of request of DISTRICT, a schedule of estimated monthly payments which shall be due CONTRACTOR under the Agreement.
(b) Values employed in making up any of these schedules are subject to the ARCHITECT's written approval and will be used only for determining basis of partial payments and will not be considered as fixing a basis for additions to or deductions from contract price.

**ARTICLE 57. CONTRACTOR CLAIMS**

If the CONTRACTOR shall claim compensation for any damage sustained by reason of the acts of the DISTRICT or its agents, CONTRACTOR shall, within five (5) calendar days after sustaining of such damage, make to the ARCHITECT a written statement of the damage sustained. On or before the 15th day of the month succeeding that in which such damage shall have been sustained the CONTRACTOR shall file with the DISTRICT an itemized statement of the details and amount of such damage, and unless such statement shall be made as thus required, CONTRACTOR's claims for compensation shall be forfeited and invalidated and it shall not be entitled to consideration for payment on account of any such damage.

**ARTICLE 58. DISPUTES - ARCHITECT’S DECISIONS**

(a) The ARCHITECT shall, within a reasonable time, make decisions on all matters relating to the CONTRACTOR’s execution and progress of the work. The decisions of the ARCHITECT shall not be binding, but shall be advisory only on the CONTRACTOR for the purpose of CONTRACTOR’s obligation to proceed with the work.

(b) Except for tort claims, all claims by the CONTRACTOR for a time extension, payment of money or damages arising from work done by, or on behalf of, the CONTRACTOR pursuant to the Agreement and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or as to the amount of payment which is disputed by the DISTRICT of Three Hundred Seventy Five Thousand Dollars ($375,000) or less shall be subject to the settlement procedures set forth in Public Contract Code Section 20104, et seq. which provisions are incorporated herein by reference.

(c) In the event of a dispute between the parties as to performance of the work, the interpretation of this Agreement or payment or nonpayment for work performed or not performed, the parties shall attempt to resolve the dispute. Pending resolution of the dispute, CONTRACTOR agrees to continue the work diligently to completion. If the dispute is not resolved, CONTRACTOR agrees it will neither rescind the Agreement nor stop the progress of the work, but CONTRACTOR's sole remedy shall be to submit such controversy to determination by a court of the State of California, in Orange County, having competent jurisdiction of the dispute, after the Project has been completed, and not before.

**ARTICLE 59. PAYMENTS**

(a) Unless otherwise specified in writing, each month within thirty (30) days after receipt by the DISTRICT of the monthly progress schedule and an undisputed, properly submitted payment request from CONTRACTOR which has been certified for payment by the Architect, there shall be paid to CONTRACTOR a sum equal to ninety percent (90%) of value of work performed and of materials delivered to the jobsite and inspected and approved by the inspector of record and subject to or under the control of the DISTRICT and unused up to the last day of the previous month, less aggregate previous payments. Public Contract Code Section 20104.50 Monthly payments shall be made only on the basis of monthly estimates which shall be prepared by CONTRACTOR on a form approved by DISTRICT and filed before the fifth day of the month during which payment is to be made. Work completed as estimated shall be an estimate only and no inaccuracy or error in said estimate shall operate to release CONTRACTOR or Surety from any damages arising from such
work or from enforcing each and every provision of this Agreement, and DISTRICT shall have the right subsequently to correct any error made in any estimate for payment. CONTRACTOR shall not be entitled to have any payment estimates processed or be entitled to have any payment for work performed so long as any lawful or proper direction concerning work, or any portion thereof, given by the DISTRICT or architect shall remain un-complied with by the CONTRACTOR. CONTRACTOR agrees to the ten percent (10%) retention on all progress payments. Public Contract Doce Sectioin 9203.

(b) DISTRICT has discretion to require from the CONTRACTOR any of the following information with the application for payment: (i) certified payroll covering the period of the prior application for payment; (ii) unconditional waivers and releases from all subcontractors/suppliers for which payment was requested under the prior application for payment; and/or (iii) receipts or bills of sale for any items. CONTRACTOR agrees that payment may be contingent upon District receiving any one or more of these documents.

(c) Before payment is made hereunder, a certificate in writing shall be obtained from the ARCHITECT stating that the work for which the payment is demanded has been performed in accordance with the terms of the Project Documents and that the amount stated in the certificate is due under the terms of the Project Documents, which certificate shall be attached to and made a part of the claim made and filed with the DISTRICT, provided that if the ARCHITECT shall, within three (3) days after written demand therefore, fail to deliver such certificate to the DISTRICT, the CONTRACTOR may file its claim with the DISTRICT without said certificate, but together with such claim shall be filed a statement that demand was made for such certificate and that the same was refused. Thereupon, the DISTRICT will either allow said claim as presented or shall, by an order entered on the minutes of said DISTRICT state the reasons for refusing to allow said claim. It is understood, moreover, that the certificate of the ARCHITECT shall not be conclusive upon the DISTRICT, but advisory only.

(d) Upon receipt of CONTRACTOR’s payment request, DISTRICT shall review the payment request as soon as practicable after receipt for the purpose of determining that the payment request is proper. Any payment request determined not to be proper shall be returned to the CONTRACTOR as soon as practicable but not later than seven (7) days after receipt and shall be accompanied by a document setting forth in writing the reasons(s) why the payment request was not proper. Public Contract Code Section 20104.50

(e) No payment by DISTRICT hereunder shall be interpreted so as to imply that DISTRICT has inspected, approved, or accepted any part of the work.

(f) Unless otherwise provided, on or before making request for final payment of the undisputed amount due under the Agreement, CONTRACTOR shall submit to DISTRICT, in writing a summary of all claims for compensation under or arising out of this Agreement which were timely filed. The acceptance by CONTRACTOR of the payment of the final amount shall constitute a waiver of all claims against DISTRICT under or arising out of this Agreement, except those previously made, in a timely manner and in writing, and identified by CONTRACTOR as unsettled at the time of CONTRACTOR's final request for payment.

(g) CONTRACTOR shall pay each of its subcontractors from whom retention has been withheld each subcontractor’s share of the retention received within seven (7) days from the time that all or any portion of the retention are received by the CONTRACTOR subject to any limitations set forth in Public Contract Code Section 7107(e).

(h) The final payment of the ten percent (10%) retention of the value of the work done under this Agreement, if unencumbered, shall be made thirty-five (35) days after recording by the DISTRICT of the
ARTICLE 60.  CHANGES AND EXTRA WORK

(a) DISTRICT may, as provided by law and without affecting the validity of this Agreement, order changes, modifications, deletions and extra work by issuance of written change orders from time to time during the progress of the Project, contract sum being adjusted accordingly. All such work shall be executed under conditions of the original Agreement except that any extension of time caused thereby shall be adjusted at time of ordering such change. DISTRICT has discretion to order changes on a “time and material” basis with adjustments to time made after CONTRACTOR has justified through documentation the impact on the critical path of the Project.

(b) Notwithstanding any other provision in the Project Documents, the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in a change order shall constitute the entire compensation and/or adjustment in the contract time due CONTRACTOR arising out of the change in the work covered by the change order unless otherwise provided in the change order. The amount of the compensation due CONTRACTOR shall be calculated pursuant to subparagraph (e) of this Article 59. The entire compensation shall not include any additional charges not set forth in subparagraph (e) and shall not include delay damages (due to processing of a change order, refusal to sign a change order) indirect, consequential, and incidental costs including any project management costs, extended home office and field office overhead, administrative costs and profit other than those amounts authorized under subparagraph (e) of this Article 59.

(c) In giving instructions, ARCHITECT shall have authority to make minor changes in work, not involving change in cost, and not inconsistent with purposes of the Project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from DISTRICT, authorized by action of the governing board, and no claim for addition to contract sum shall be valid unless so ordered.

(d) If the ARCHITECT determines that work required to be done constitutes extra work outside the scope of the Agreement, the ARCHITECT shall send a request for a detailed proposal to the CONTRACTOR. CONTRACTOR will respond with a detailed proposal within five (5) calendar days of receipt of the Request for Proposal which shall include a complete itemized cost breakdown of all labor and materials showing actual quantities, hours, unit prices, and the wage rates required for the change. If the change order involves a change in construction time, a request for the time change shall accompany the change order cost breakdown. All such requests for time shall be specified by CONTRACTOR as either “work days” or “calendar days.” Any request for time received with only the designation of “days” shall be considered calendar days. The term “work days” as used in this paragraph shall mean Monday through Friday, excluding Saturdays, Sundays and federal/State of California observed holidays. If the work is to be performed by a subcontractor, CONTRACTOR must include a bid from the subcontractor containing the same detailed information as required for CONTRACTOR. No extensions of time will be granted for change orders that, in the opinion of the ARCHITECT, do not affect the critical path of the Project.

(e) Value of any such extra work, change, or deduction shall be determined at the discretion of DISTRICT in one or more of the following ways:
(1) By mutual written acceptance of a lump sum proposal from CONTRACTOR properly itemized and supported by sufficient substantiating data to permit evaluation by DISTRICT and ARCHITECT.

(2) By unit prices contained in CONTRACTOR's original bid and incorporated in the Project Documents or fixed by subsequent agreement between DISTRICT and CONTRACTOR.

(3) By cost of material and labor and percentage for overhead and profit ("time and material"). If the value is determined by this method the following requirements shall apply:

(A) Daily Reports by Contractor.

   (i) General. At the close of each working day, the CONTRACTOR shall submit a daily report to the ARCHITECT and the Inspector, on forms approved by the DISTRICT, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, and for other services and expenditures when authorized concerning extra work items. An attempt shall be made to reconcile the report daily, and it shall be signed by the ARCHITECT and the CONTRACTOR. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the CONTRACTOR.

   (ii) Labor. The report shall show names of workers, classifications, and hours worked and hourly rate. Project Superintendent expenses are not allowed.

   (iii) Materials. The report shall describe and list quantities of materials used and unit cost.

   (iv) Equipment. The report shall show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable, and hourly/daily cost.

   (v) Other Services and Expenditures. Other services and expenditures shall be described in such detail as the DISTRICT may require.

(B) Basis for Establishing Costs

   (i) Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft classification or type of workers at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from federal, state or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. The use of labor classification which would increase the extra work cost will not be permitted unless the CONTRACTOR establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.

   (ii) Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the work site in the quantities involved, plus sales tax, freight and delivery. The DISTRICT reserves the right to approve materials and sources of supply, or to supply materials to the CONTRACTOR if necessary for the progress of the work. No markup shall be applied to any material provided by the DISTRICT.
(iii) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of $500 or less or where an invoice is not provided.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental source, or distributors, at the time the work is performed. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included.

If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the DISTRICT than holding it at the work site, it shall be returned, unless the CONTRACTOR elects to keep it at the work site at no expense to the DISTRICT.

All equipment shall be acceptable to the ARCHITECT, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and manufacturer's approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

(iv) Other Items. The DISTRICT may authorize other items which may be required on the extra work. Such items include labor, services, material and equipment which are different in their nature from those required by the work and which are of a type not ordinarily available from the CONTRACTOR or any of the subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.

(v) Invoices. Vendors' invoices for material, equipment rental, and other expenditures, shall be submitted with the request for payment. If the request for payment is not substantiated by invoices or other documentation, the DISTRICT may establish the cost of the item involved at the lowest price which was current at the time of the report.

(C) The following form shall be used as applicable by the DISTRICT and CONTRACTOR to communicate proposed additions and deductions to the Agreement.

EXTRA CREDIT

i. Material/Equipment (attach itemized quantity and unit cost plus sales tax)  
   __________

ii. Labor (attach itemized hours and rates)  
    __________

iii. Subtotal  
     __________

iv. If subcontractor performed work, add Subcontractor's overhead and profit to portions performed by it, not to exceed 15% of Item iii. above  
    __________

v. Subtotal  
   __________
vi. General Contractor's Overhead
and Profit, not to exceed 15% of
Item v if Contractor performed the
work. If subcontractor performed
the work, not to exceed 5% of Item v.
Of portions performed by Contractor
and subcontractors, portions performed
by Contractor shall not exceed 15%
of Item V, and portions performed
by Subcontractor shall not exceed
5% of Item v.

vii. Subtotal

viii. Bond and Liability Insurance
Premium, if in fact additional
bonds or insurance were actually
purchased, not to exceed 1% of
Item vii.

ix. Total

(4) It is expressly understood that the value of such extra work or changes, as determined by any
of the aforementioned methods expressly includes any and all of CONTRACTOR’s costs and
expenses, both direct and indirect, resulting from additional time required on the Project, or resulting
from delays to the Project. Any costs or expenses not included are deemed waived. For purposes of
determining the cost, in any, of any extra work, change, addition or omission hereunder, all trade
discounts, rebates, refunds and all returns from the sale of surplus materials and equipment shall
accrue and be credited to CONTRACTOR, and CONTRACTOR shall ensure that such discounts,
rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of
CONTRACTOR’s cost in determining the actual cost of construction for purposes of any extra work,
change, addition or omissions in the work as provided herein.

(f) If the CONTRACTOR should claim that any instruction, request, drawing, specification, action,
condition, omission, default, or other situation obligates the DISTRICT to pay additional compensation to
CONTRACTOR or to grant an extension of time, or constitutes a waiver of any provision in the Agreement,
CONTRACTOR shall notify the DISTRICT, in writing, of such claim within five (5) calendar days from the
date CONTRACTOR has actual or constructive notice of the factual basis supporting the claim. The notice
shall state the factual bases for the claim and cite in detail the Project Documents (including plans and
specifications) upon which the claim is based. The CONTRACTOR's failure to notify the DISTRICT within
such five (5) day period shall be deemed a waiver and relinquishment of such a claim. If such notice be given
within the specified time, the procedure for its consideration shall be as stated above in these General
Conditions.
(g) “Prohibited usage of CONTRACTOR qualifying language stamps on DISTRICT drawings or contract forms.” Contractor shall not countersign or endorse any form, drawing, change order, contract or other documents with any conditions not mutually agreed to in advance by the DISTRICT and the CONTRACTOR. Endorsement of a contract, change order, specification, drawing or form with the following: “This change order is being executed without waiver of the right to seek additional compensation for such services,” shall be of no legal force or effect.

ARTICLE 61. COMPLETION

(a) The DISTRICT shall accept completion of the Project and have the Notice of Completion recorded within ten (10) days of acceptance of completion of the Project when the entire work including punch list items shall have been completed to the satisfaction of the DISTRICT. Civil Code Section 3093. The work may only be accepted as complete by action of the DISTRICT’s Governing Board.

(b) However, the DISTRICT, at its sole option, may accept completion of the Project and have the Notice of Completion recorded when the entire work including individual portions of the work shall have been completed to the satisfaction of the DISTRICT, except for minor corrective items, as distinguished from incomplete items.

(c) A final walk through of the Project to determine completion and to record the Notice of Completion shall occur only upon a valid claim by CONTRACTOR that the Project is complete except for minor corrective items. Any erroneous claims of completion by CONTRACTOR resulting in a premature walk through shall be at CONTRACTOR’s sole cost and expense and DISTRICT shall make adjustments to the contract price by reducing the amount thereof to pay for any costs incurred by the DISTRICT due to the erroneous claims by the CONTRACTOR that the Project is complete. Minor corrective items shall be identified in the final walk through of the Project.

(d) If the CONTRACTOR fails to complete the minor corrective items prior to the expiration of the thirty-five (35) day period immediately following recording of the Notice of Completion, the DISTRICT shall withhold from the final payment an amount equal to one hundred fifty percent (150%), as determined by the DISTRICT, of the amount of each item until such time as the item is completed. Public Contract Code Section 7107. At the end of such 35-day period, if there are items remaining to be corrected, the DISTRICT may elect to proceed as provided in Article 61(b) entitled "Adjustments to Contract Price."

ARTICLE 62. ADJUSTMENTS TO CONTRACT PRICE

(a) If CONTRACTOR defaults or neglects to carry out the work in accordance with the Project Documents or fails to perform any provision thereof, DISTRICT may, after ten (10) days written notice to the CONTRACTOR and without prejudice to any other remedy it may have, make good such deficiencies.

(b) The DISTRICT shall adjust the total contract price by reducing the amount thereof by the cost of making good such deficiencies. If DISTRICT deems it inexpedient to correct work not done in accordance with the Project Documents, an equitable reduction in the contract price shall be made therefore.

ARTICLE 63. CORRECTION OF WORK

(a) CONTRACTOR shall promptly remove all work identified by DISTRICT as failing to conform to the Project Documents, whether incorporated or not. CONTRACTOR shall promptly replace and re-execute its own work to comply with Project Documents without additional expense to DISTRICT and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

(b) If CONTRACTOR does not remove such work within a reasonable time, fixed by written notice, DISTRICT may remove it and may store the material at CONTRACTOR’s expense. If CONTRACTOR does not pay expenses of such removal within ten (10) days time thereafter, DISTRICT may, upon ten (10) days
written notice, sell such materials at auction or at private sale and shall account for net proceeds thereof, after deducting all costs and expenses that should have been borne by CONTRACTOR.

**ARTICLE 64. EXTENSION OF TIME - LIQUIDATED DAMAGES**

(a) The CONTRACTOR and DISTRICT hereby agree that the exact amount of damages for failure to complete the work within the time specified is extremely difficult or impossible to determine. CONTRACTOR shall be assessed liquidated damages for each and every day the work required under the Project Documents remains unfinished past the time for completion, as set forth in the Agreement, and any extensions of time granted by the DISTRICT to the CONTRACTOR under the terms of the Project Documents. The CONTRACTOR will pay to the DISTRICT or DISTRICT may retain from amounts otherwise payable to the CONTRACTOR, said amount for each day after failure to meet the requirements of the contract completion as scheduled in the Agreement. Government Code Section 53069.85. For purposes of this article, the work shall be considered "complete" in accordance with the provisions of Article 60, "COMPLETION", except that the work may be considered complete without formal acceptance by the DISTRICT Governing Board so long as the Governing Board, at its next regularly scheduled meeting, accepts the work.

(b) CONTRACTOR shall not be charged for liquidated damages, as set forth above, because of any delays in completion of work which are not the fault or negligence of CONTRACTOR, including but not restricted to acts of God. CONTRACTOR shall within ten (10) days of beginning of any such delay, notify DISTRICT in writing of causes of delay. CONTRACTOR shall provide documentation and justification to substantiate the delay and its relation to the Project's critical path. DISTRICT shall ascertain the facts and extent of delay and grant extension of time for completing work when, in its judgment, the findings of fact justify such an extension. The DISTRICT's finding of fact thereon shall be final and conclusive on the parties hereto. Extension of time shall apply only to that portion of work affected by the delay, and shall not apply to other portions of work not so affected.

**ARTICLE 65. PAYMENTS WITHHELD**

(a) In addition to amount which DISTRICT may retain under Article entitled "COMPLETION" and Article entitled "PAYMENTS," DISTRICT may withhold a sufficient amount or amounts of any payment or payments otherwise due to CONTRACTOR, as in its judgment may be necessary to cover:

1. Payments which may be past due and payable for just claims against CONTRACTOR or any subcontractors, or against and about the performance of work on the Project, including, without limitation, payments made pursuant to the Article entitled "PAYMENTS BY CONTRACTOR."
2. The cost of defective work which CONTRACTOR has not remedied.
3. Liquidated damages assessed against CONTRACTOR.
4. Penalties for violation of labor laws.
5. The cost of materials ordered by the DISTRICT pursuant to Article 33 entitled "MATERIALS AND WORK."
6. The cost of completion of this Agreement if there exists a reasonable doubt that this Agreement can be completed for the balance then unpaid to CONTRACTOR.
7. Damage to DISTRICT, another contractor, or subcontractor.
8. Site clean-up as provided in Article 44 entitled "CLEANING UP."
9. Payments to indemnify, defend, or hold harmless the DISTRICT.
10. Any payments due to the District including but not limited to payments for failed tests, utilities or imperfections.
(11) Extra services for ARCHITECT.

(12) Extra services for the INSPECTOR including but not limited to reinspection required due to CONTRACTOR’s failed tests or installation of unapproved or defective materials and CONTRACTOR’s requests for inspection and CONTRACTOR’s failure to attend the inspection.

(13) Failure of CONTRACTOR to submit on a timely basis, proper and sufficient documentation required by the Project Documents, including without limitation, monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed change orders and verified reports.

(14) Any other obligation(s) of the DISTRICT which the DISTRICT is authorized and/or compelled by law to perform.

(b) If the above grounds are in the opinion of the DISTRICT removed by or at the expense of CONTRACTOR, payment shall be made for amounts withheld because of them.

(c) DISTRICT may apply such withheld amount or amounts to payment of such claims or obligations at its discretion. In so doing, DISTRICT shall make such payments on behalf of CONTRACTOR. If any payment is so made by DISTRICT, then such amount shall be considered as a payment made under contract by DISTRICT to CONTRACTOR and DISTRICT shall not be liable to CONTRACTOR for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligations. DISTRICT will render CONTRACTOR an accounting of such funds disbursed on behalf of CONTRACTOR.

(d) As an alternative to payment of such claims or obligations, DISTRICT, in its sole discretion, may reduce the total contract price as provided in Article 61 entitled "ADJUSTMENTS TO CONTRACT PRICE."

**ARTICLE 66. TAXES**

(a) CONTRACTOR will pay all applicable federal, state and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Project Documents.

(b) If under federal excise tax law any transaction hereunder constitutes a sale on which a federal excise tax is imposed and the sale is exempt from such excise tax because it is a sale to a state or local government for its exclusive use, the DISTRICT, upon request, will execute documents necessary to show (1) that the DISTRICT is a political subdivision of the State for the purposes of such exemption and (2) that the sale is for the exclusive use of the DISTRICT. No excise tax for such materials shall be included in any bid price.

**ARTICLE 67. NO ASSIGNMENT**

The CONTRACTOR shall not assign, transfer, convey, sublet or otherwise dispose of this Agreement or of its rights, title or interest in or to the same or any part thereof. If the CONTRACTOR shall assign, transfer, convey, sublet or otherwise dispose of the Agreement or its right, title or interest therein, or any part thereof, such attempted or purported assignment, transfer, conveyance, sublease or other disposition shall be null, void and of no legal effect whatsoever; and the Agreement may, at the option of the DISTRICT, be terminated, revoked and annulled, and the DISTRICT shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the CONTRACTOR, and to its purported assignee or transferee.

**ARTICLE 68. NOTICE**

Any notice from one party to the other or otherwise under the Agreement shall be in writing and shall be dated and signed by party giving such notice or by a duly authorized representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in one of the following manners:
(1) If notice is given to DISTRICT, by personal delivery thereof to DISTRICT, or by depositing same in United States mail, enclosed in a sealed envelope addressed to DISTRICT, and sent by registered or certified mail with postage prepaid;

(2) If notice is given to CONTRACTOR, by personal delivery thereof to said CONTRACTOR, or to CONTRACTOR's superintendent at site of Project, or by depositing same in United States mail, enclosed in a sealed envelope addressed to said CONTRACTOR at its regular place of business or at such address as may have been established for the conduct of work under this Agreement, and sent by registered or certified mail with postage prepaid;

(3) If notice is given to surety or other persons, by personal delivery to such surety or other person, or by depositing same in United States mail, enclosed in a sealed envelope, addressed to such surety or person at the address of such surety or person last communicated by surety or other person to party giving notice, and sent by registered or certified mail with postage prepaid.

ARTICLE 69. NO WAIVER

The failure of the DISTRICT in any one or more instances to insist upon strict performance of any of the terms of this Agreement or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion.

ARTICLE 70. NON-UTILIZATION OF ASBESTOS MATERIAL

(a) The CONTRACTOR will be required to execute and submit the Certificate Regarding Non-Asbestos Containing Materials.

(b) Should asbestos containing materials be installed by the CONTRACTOR in violation of this certification, or if removal of asbestos containing materials is part of the Project, decontaminations and removals will meet the following criteria:

(1) Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency (EPA).

(2) The asbestos removal contractor shall be an EPA accredited contractor qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant who shall have sole discretion and final determination in this matter.

(3) The asbestos consultant shall be chosen and approved by the DISTRICT who shall have sole discretion and final determination in this matter.

(4) The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

(c) Cost of all asbestos removal, including, but not necessarily limited to the cost of the asbestos removal contractor, the cost of the asbestos consultant, analytical and laboratory fees, time delays and additional costs as may be incurred by the DISTRICT shall be borne entirely by the CONTRACTOR.

(d) Hold Harmless: Interface of work for the Project with work containing asbestos shall be executed by the CONTRACTOR at his/her risk and at his/her discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of the Agreement, the CONTRACTOR acknowledges the above and agrees to hold harmless the DISTRICT, its Governing Board, employees, agents, and ARCHITECT and assigns for all asbestos liability.
which may be associated with this work. The CONTRACTOR further agrees to instruct his/her employees with respect to the above mentioned standards, hazards, risks and liabilities.

ARTICLE 71. LEAD

Pursuant to the Lead-Safe Schools Protection Act (Education Code Sections 32240, et seq.) and other applicable law, the CONTRACTOR shall not use lead-based paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or the modernization or renovation of any existing school facility.

ARTICLE 72. GOVERNING LAW

The laws of the State of California shall govern the Project and the Agreement.
Special Conditions

ARTICLE 1. IMPORT FILL CRITERIA

The import fill material shall meet the following criteria:

1. No particle larger than 6 inches in largest dimension.

2. Free of all perishable material.

3. Plasticity index of 20 or less and liquid limit of 40 or less.

4. Expansion index of 20 or less (UBC Standard 29-2)

Any existing basement slab(s) should be cored in ten locations. The slab subgrade at the cored locations shall be removed for about 2 to 3 feet deep and replaced with gravel to allow for percolation of water.

The backfill material should then be placed in layers less than 8 inches in loose thickness, moisture conditioned to about 2 to 3 percent above optimum moisture content, and compacted to minimum 90 percent relative compaction as obtained by the ASTM D1557-00 test method.

ARTICLE 2. CAPPING UTILITIES

All utilities must be capped at the foundation of the structure and are to be demolished in a safe and approved manner. A utility severance plan must be submitted to and approved by the City of Tustin. The Plan must show the location of capping and rerouting/removal of all existing utilities proposed for demolition. Evidence of approval must be submitted to the District prior to commencing utility severance work. There shall be no alterations, rerouting or removal of the underground utilities as part of this contract. Therefore, there will be no trenching or filling activities. Contractor to provide an as-built identifying all capped utility locations.

ARTICLE 3. DEPARTMENT OF THE NAVY RIGHT TO ACCESS

The United States Department of the Navy, its officers, agents, employees, contractors and subcontractors shall have the right, upon reasonable notice, to enter upon the Property in any case in which a response or corrective action is found to be necessary at such property or when such access is necessary to carry out a response action or corrective action on adjoining property. No claim shall exist on account of such entries. The right to enter shall include the right to conduct tests, investigations and surveys, including, where necessary, drilling, test-pitting, boring and other similar activities. Such right shall also include the right to construct, operate, maintain or undertake any other response or corrective action as required or necessary, including, but not limited to monitoring wells, pumping wells, treatment facilities, and, except in the case of imminent and substantial endangerment to human health or the environment, shall give reasonable notice of any action to be taken related to remedial or corrective actions on the Property.

ARTICLE 4. DEPARTMENT OF THE NAVY ENVIRONMENTAL RESTRICTIONS

The United States Department of the Navy has installed monitoring and pumping wells, together with associated monitoring and other equipment on the Property. Contractor shall not alter, disturb or remove said wells or equipment without the prior written approval of the Navy, the United States Environmental Protection Agency, California Department of Toxic Substance Control and the Regional Water Quality Board.

Phases I, III, V, VII
February 2009
ARTICLE 5. NON DISCRIMINATION

There shall be no discrimination against or segregation of any person or group of persons on account of race, color, creed, religion, sex, sexual orientation, marital status, national origin or ancestry in the use of the property upon which this contract is executed.


ARTICLE 6. TRANSPORTATION PERMIT REQUIREMENT

The contractor will be required to acquire a transportation permit from the City of Tustin which requires provision of a Haul Route Plan for removal of demolition material via a public street.

ARTICLE 7. NO LIEN OR STOP NOICE

Public contract code requirements must be met for all portions of the property of this contract. No lien or stop notice shall be placed on that portion of the District’s property commonly referred to as the LIFOC property (Lease in Furtherance of Conveyance) and specific to Phases II, IV and VI.

ARTICLE 8. BURIED TRANSITE PIPE

No buried transite pipe will be removed during the demolition of this contract.
Storm Water Pollution Prevention Plan

For:
ATEP Hanger # 524
Tustin, CA 92415

ADVANCED TECHNOLOGY & EDUCATION PARK

Prepared for:
South Orange County Community College District
28000 Marguerite Parkway
Mission Viejo, CA 92692-3635
(949) 582-4664

Contractor:
TBD

Project Site Location/Address:
North of Future Warner Drive
East of Redhill Ave

Contractor’s Storm Water Pollution Prevention Manager
TBD

SWPPP Prepared by:
Psomas
3 Hutton Centre Drive, Suite 200
Santa Ana, CA 92707
(714) 751-7373
Bruce Kirby, PE

SWPPP Preparation Date:
March 2010

Estimated Project Dates:
Start of Construction: 4/1/2011
Completion of Construction: 4/1/2012

WDID No.:________________
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Section 100
SWPPP Certifications and Approval

100.1 SWPPP Certification by Preparer

Project Name: ATEP Hanger # 524
Tustin, CA 92415

Project Number: ADVANCED TECHNOLOGY & EDUCATION

"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 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."

Preparer’s Signature: Bruce W. Kirby PE
Preparer’s Name and Title: 951.787.8421
Telephone Number: 951.787.8421
Date: March 2010
100.2 Owner Approval and Certification of SWPPP

Owner’s (or Authorized Representative) Approval and Certification of the Storm Water Pollution Prevention Plan

Project Name: ATEP Hanger # 524
Tustin, CA 92415

Project Number: ADVANCED TECHNOLOGY & EDUCATION PARK

"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 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 (or Authorized Representative) Signature Date

Name and Title Telephone Number
100.3 Annual Compliance Certification

By July 1 of each year, the Owner shall complete an Annual Certification of Compliance stating compliance with the terms and conditions of the Permit and the SWPPP. The blank Annual Certification of Compliance Form is included in Attachment M. Completed Annual Certifications of Compliance and Approvals can be found in the following pages.
Section 200

SWPPP Amendments

200.1 SWPPP Amendment Certification and Approval

This SWPPP shall be amended:

- Whenever there is a change in construction or operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4); or
- If any condition of the Permits is violated or the general objective of reducing or eliminating pollutants in 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 14-calendar days after notification by the RWQCB;
- Annually, prior to the defined rainy season; and
- When deemed necessary by the Owner.

The following items will be included in each amendment:

- Who requested the amendment.
- The location of proposed change.
- The reason for change.
- The original BMP proposed, if any.
- The new BMP proposed.

The amendments for this SWPPP, along with the Owner’s Certification and the Owner approval, can be found in the following pages. Amendments are listed in the Amendment Log in section 200.2
SWPPP Amendment No.

Project Name: ATEP Hanger # 524 
Tustin, CA 92415

Project Number: Advanced Technology & EDUCATION PARK

Preparer Certification 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 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."

Preparer’s Signature
Bruce Kirby, PE
Preparer’s Name and Title

Date
951.787.8421
Preparer’s Telephone Number

Owner (or Owner’s Authorized Representative) 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 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 (or Authorized Representative) Signature

Date

Name and Title

Telephone Number
## Amendment Log

**Project Name:** ATEP Hanger # 524  
Tustin, CA 92415

**Project Number:**

<table>
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Section 300

Introduction and Project Description

300.1 Introduction and Project Description

This project consists of the demolition of an existing airfield Hanger Building in the old Tustin Air Station, now part of the Advanced Technology & Education Park (ATEP) in the City of Tustin, County of Orange. The project site is approximately 1.5 acres and is bounded by Future Warner Drive to the South and Redhill Ave to the West.

300.2 Unique Site Features

The current existing site consists of a foundation of the Hanger #524 Building within an undeveloped open area. The site currently drains to the southwest and sheet flows onto the adjacent offsite area.

300.3 Construction Site Estimates

The following are estimates of the construction site:

<table>
<thead>
<tr>
<th>Description</th>
<th>Estimated Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction site area</td>
<td>7.1</td>
<td>acres</td>
</tr>
<tr>
<td>Percentage impervious area before construction</td>
<td>10</td>
<td>%</td>
</tr>
<tr>
<td>Runoff coefficient before construction (1)</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Percentage impervious area after construction</td>
<td>100</td>
<td>%</td>
</tr>
<tr>
<td>Runoff coefficient after construction (1)</td>
<td>0.85</td>
<td></td>
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<tr>
<td>Anticipated storm water flow on to the construction site (2)</td>
<td>0</td>
<td>cfs</td>
</tr>
</tbody>
</table>

(1) Calculations are shown in Attachment D
(2) Calculations are shown in Attachment E

300.4 Project Schedule/Water Pollution Control Schedule

Estimate Construction Start: 4/1/11
Estimate Construction Finish: 4/1/12

Construction schedule will be included in this report when available.
300.5 Contact Information/List of Responsible Parties

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

TBD

TBD

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, and 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
- Storm event inspections
- Post-storm inspections
- Routine inspections as specified in the project’s specifications or described in the SWPPP
- Updates/Amendments to the SWPPP, as needed
- Preparing annual compliance certification for owner’s, or owner’s authorized representative, signature
- Ensuring elimination of all unauthorized discharges
The SWPPM shall be assigned authority by the Contractor to mobilize crews in order to make immediate repairs to the control measures.

Coordinate with the Contractor to assure all of the necessary corrections/repairs are made immediately, and that the project complies with the SWPPP, the Permit and approved plans at all times.

Submitting Notices of Discharge and reports of Illicit Connections or Illegal Discharges.
Section 400

References

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

- Project plans Demolition Plan, dated March 4, 2011, prepared by Psomas.

- State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity.

- California Stormwater BMP Handbook – Construction, January 2003
Section 500
Body of SWPPP

500.1 Objectives

This Storm Water Pollution 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 (storm water discharges) 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).

- Identify a sampling and analysis strategy and sampling schedule for discharges from construction activity which discharge directly into water bodies listed on Attachment 3 of the Permit (Clean Water Act Section 303(d) [303(d)] Water Bodies listed for Sedimentation).

- For all construction activity, identify a sampling and analysis strategy and 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 with the required elements of the General Permit No. CAS000002 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, groundwaters, 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.
500.2 Vicinity Map

The construction project vicinity map showing the project location, surface water boundaries, geographic features, construction site perimeter, and general topography, is located in Attachment A. The project’s Title Sheet provides more detail regarding the project location and is also included in Attachment A.

500.3 Pollutant Source Identification and BMP Selection

500.3.1 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 the Water Pollution Control Drawings (WPCDs) and/or in Sections 500.3.4 through 500.3.9:

- Construction Equipment: Vehicle fluids, including oil, grease, petroleum, coolants
- Asphaltic emulsions
- Cement materials
- Base materials
- Joint and curing compounds
- Concrete curing compounds
- Paint, solvents, thinners, acids
- General litter
- PCC rubble, masonry block rubble
- Treated lumber (materials and waste)

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

- Clear and Grub operations
- Grading operations
- Building excavation operations
- Utility removal excavation operations
- Landscaping / replanting operations

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

500.3.2 Existing (pre-construction) Control Measures

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

- Silt Fencing is being used throughout the Campus during the demolition operations.

500.3.3 Nature of Fill Material and Existing Data Describing the Soil

No soils reports were provided for this project.
Existing site features that, as a result of past usage, may contribute pollutants to storm water (e.g., toxic materials that are known to have been treated, stored, disposed, spilled, or leaked onto the construction site) include:

- Historical use by the military may have included fuel spills that will be addressed if encountered.

500.3.4 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 BMPs protect the soil surface by covering and/or binding soil particles. This project will incorporate erosion control measures required by the contract documents, and other measures selected by the Contractor, SWPPP Manager, or Owner. This project will implement the following practices for effective temporary and final erosion control during construction:

1) Preserve existing vegetation where required and when feasible.

2) Apply temporary erosion control to remaining active and non-active areas as required by the California Stormwater BMPs Handbook – Construction, and the contract documents. Reapply as necessary to maintain effectiveness.

3) Implement temporary erosion control measures at regular intervals throughout the defined rainy season to achieve and maintain the contract’s disturbed soil area requirements. Implement erosion control prior to the defined rainy season.

4) Stabilize non-active areas as soon as feasible after the cessation of construction activities.

5) Control erosion in concentrated flow paths by applying erosion control blankets, erosion control seeding, and lining swales as required in the contract documents.

6) Apply seed to areas deemed substantially complete by the Owner during the defined rainy season.
7) At completion of construction, apply permanent erosion control to all remaining disturbed soil areas.

Sufficient erosion control materials will be maintained 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.

Implementation and locations of temporary erosion control BMPs are shown on the Water Pollution Control Drawings (WPCDs) in Attachment B and/or described in this section. The BMP Consideration Checklist in Attachment C indicates the BMPs that will be implemented to control erosion on the construction site; these are:

- EC-1, Scheduling
- EC-2, Preservation of Existing Vegetation
- EC-5, Soil Binders
- EC-10, Velocity Dissipator Devices

Implementation of Erosion Control BMPs

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

Year-round
- The Storm Water Pollution Prevention Manager (SWPPM) will monitor weather using National Weather Service reports to track conditions and alert crews to the onset of rainfall events.
- Disturbed soil areas will be stabilized with temporary erosion control or with permanent erosion control as soon as possible after grading or construction is complete.
- The Storm Water Pollution Prevention Manager (SWPPM) will monitor weather using National Weather Service reports to track conditions and alert crews to the onset of rainfall events.
• Disturbed soil areas will be stabilized with temporary erosion control or with permanent erosion control as soon as possible after grading or 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 substantially complete will be stabilized with permanent erosion control (soil stabilization) and vegetation (if within seeding window for seed establishment).

• Prior to forecast 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 control and sediment control measures. The construction schedule will be arranged as much as practicable to leave existing vegetation undisturbed until immediately prior to grading.

500.3.5 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 been detached and transported by the force of water. This project will incorporate sediment control measures required by the contract documents, and other measures selected by the Contractor, SWPPP Manager, or Owner.

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.
Implementation and locations of temporary sediment control BMPs are shown on the Water Pollution Control Drawings (WPCDs) in Attachment B. The BMP Consideration Checklist in Attachment C indicates all the BMPs that will be implemented to control sediment on the construction site; these are:

- SE-1, Silt Fence
- SE-2, Sediment Basin
- SE-4, Check Dams
- SE-8, Sandbag Barrier
- E-10, Storm Drain Inlet Protection
- S

Implementation of Temporary Sediment Controls

- Temporary sediment control BMPs will be deployed according to the schedule shown in SWPPP Section 300.4.
- During the rainy season, temporary sediment controls will be implemented at the draining perimeter of disturbed soil areas, at the toe of slopes, at storm drain inlets and at outfall areas at all times.
- During the non-rainy season, temporary sediment controls will be implemented at the draining perimeter of disturbed soil areas and at storm drain downstream from disturbed areas before rain events.
- Temporary sediment control will be deployed along the toe of exterior slopes to filter storm water runoff.
- Storm drain inlet protection will be used at all operational internal inlets to the storm drain system during the rainy season.
- 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 materials, sandbags for linear barriers, fiber rolls.
500.3.6 Tracking Control

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

- SE-7, Street Sweeping and Vacuuming
- TC-1, Stabilized Construction Entrance/Exit
- TC-2, Stabilized Construction Roadway
- TC-3, Entrance/Outlet Tire Wash

Tracking controls shall be considered and implemented year-round and throughout the duration of the project, at all access (ingress/egress) points to the project site where vehicles and/or equipment may track sediment from the construction site onto public roadways.

BMP’s to Reduce Sediment Tracking

- Road sweeping and vacuuming will occur during soil hauling and as necessary to keep street surfaces clear of soil and debris. Washing of sediment tracked onto streets into storm drains will not occur.

TC-1: Stabilized Construction Entrance/Exit

- A stabilized construction entrance/exit will be constructed and maintained at construction site entrances and exits, equipment yard, water filling area for water trucks.
- The site entrance/exit will be stabilized to reduce tracking of sediment as a result of construction traffic. The entrance will be designated and graded to prevent runoff from leaving the site. Stabilization material will be 3 to 6 inch aggregate. The entrance will be flared where it meets the existing road to provide an adequate turning radius. During dirt hauling activities that extend over a one-week time period, a site entrance/exit will be installed to reduce tracking of sediment.

TC-2: Stabilized Construction Roadway

- The construction roadway through the site will be designated and stabilized to prevent erosion and to control tracking of mud and soil material onto adjacent roads. The roadway will be clearly marked for limited speed to control dust. Refer to WPCD for entrance/exit and construction roadway locations. Stabilization material will be 3 to 6 inch
aggregate. A regular maintenance program will be conducted to replace sediment-clogged stabilization material with new stabilization material.

TC-3: Entrance/Outlet Tire Wash

- An entrance/outlet tire station will be used to ensure that sediment tracking to public street is minimized.

500.3.7 Wind Erosion Control

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

- WE-1, Wind Erosion Control
- WM-3, Stockpile Management
- WE-1, Wind Erosion Control

Wind erosion control shall be considered and implemented year-round and throughout the duration of the project on all disturbed soils on the project site that are subject to wind erosion, and when significant wind and dry conditions are anticipated during construction.

Dust Control

- WE-1: Wind Erosion Control

BMP WE-1, Wind Erosion Control, will be implemented to provide dust control and prevent discharges from dust control activities and water supply equipment. Water application rates will be minimized as necessary to prevent runoff and ponding and water equipment leaks will be repaired immediately.

- Potable water will be applied to disturbed soil areas of the project site to control dust and maintain optimum moisture levels for compaction. The water will be applied using water trucks. Water applications will be concentrated during the late summer and early fall months.

- During windy conditions (forecast or actual wind conditions of approximately 25 mph or greater), dust control will be applied to disturbed areas to adequately control wind erosion.
• BMP WM-3, Stockpile Management, using plastic covers will be implemented to prevent wind dispersal of sediment from stockpiles.

500.3.8 Non-Storm Water Control

An inventory of construction activities and potential non-storm water discharges is provided in Section 5.3.1. The BMP Consideration Checklist in Attachment C and the following list indicates the BMPs that have been selected to control non-storm water pollution on the construction site. Implementation and locations of some non-storm water control BMPs are shown on the Water Pollution Control Drawings (WPCDs) in Attachment B. A narrative description of each BMP follows.

- NS-6, Illicit Connection/Illegal Discharge Detection and Reporting
- NS-8, Vehicle and Equipment Cleaning
- NS-9, Vehicle and Equipment Fueling
- NS-10, Vehicle and Equipment Maintenance
- NS-1, Water Conservation Practices
- NS-3, Paving and Grinding Operations
- NS-7, Potable Water / Irrigation

500.3.9 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 Attachment 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, Material Delivery and Storage
- WM-2, Material Use
- WM-3, Stockpile Management
500.3.10 Cost Breakdown for Water Pollution Control

A cost breakdown itemizing the contract lump sum for water pollution control has been developed for this project and included in Attachment O. The cost breakdown reflects the items of work, quantities and costs for BMPs shown in the SWPPP, except for those construction site BMPs and permanent BMPs that are shown on the project plans and for which there is a contract item of work.

500.4 Water Pollution Control Drawings (WPCDs)

The Water Pollution Control Drawings can be found in Attachment B of the SWPPP.

500.5 Construction BMP Maintenance, Inspection, and Repair

Inspections will be conducted as follows:

- Prior to a forecast storm
- after a rain event that causes runoff from the construction site
- at 24-hour intervals during extended rain events
- at any other time(s) or intervals of time specified in the contract documents

Completed inspection checklists will be kept with the SWPPP.
A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs. A program for Maintenance, Inspection and Repair of BMPs is shown in Attachment G.

### 500.6 Post-Construction Storm Water Management

#### 500.6.1 Post-Construction Control Practices

The following are the post-construction BMPs that are to be used at this construction site after all construction is complete:

- Outlet protection at all culvert outlets
- Bioretention area
- "No Dumping, Drains to Ocean" logo shall be painted near grate inlets.
- All landscape areas shall be seeded, planted and protected per landscape plans

#### 500.6.2 Operation/Maintenance after Project Completion

The post-construction BMPs that are described above will be funded and maintained by SOCCC District.

### 500.7 Training

Section 300.5 shows the name of the Contractor’s Storm Water Pollution Prevention Manager (SWPPM). This person has received the following training:

- LIST
The training log showing formal and informal training of various Contractor personnel is shown in Attachment I.

INSERT HERE ANY ADDITIONAL TEXT REGARDING TRAINING OF PERSONNEL.

This SWPPP was prepared by Psomas.

500.8  List of Subcontractors

All contractors and subcontractors will be notified of the requirement 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 project, the list will be updated accordingly. The subcontractor notification letter and log is included in the SWPPP as Attachment J.

500.9  Other Plans/Permits

Attachment N includes copies of other local, state, and federal plans and permits. Following is a list of the plans and permits included in Attachment N:

- State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity.


Section 600
Monitoring Program and Reports

600.1 Site Inspections

The SWPPM will inspect the site prior to a forecast storm, after a rain event that causes runoff from the construction site, at 24-hour intervals during extended rain events, and as specified in the contract documents. The results of all inspections and assessments will be documented. Copies of the completed inspection checklists will be maintained with the SWPPP. Site inspections conducted for monitoring purposes will be performed using the inspection checklist shown in Attachment H.

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

Assigned inspector: NAME OF INSPECTOR   Contact phone: TELEPHONE NUMBER

600.2 Non-Compliance Reporting

If a discharge occurs or if the project receives a written notice of non-compliance, the Contractor will immediately notify the Owner and will file a written report to the Owner within 7 days of the discharge or notice. The Owner is responsible for filing a written report to the Regional Water Quality Control Board (RWQCB) within 30 days or identification of non-compliance. Corrective measures will be implemented immediately following the discharge, notice or order. A sample Notice of Non-Compliance (NONC) form is provided in Attachment K. All discharges will be documented on a Discharge Reporting Log using the example form in Attachment T.

The report to the Owner and 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 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

600.3 Record Keeping and Reports

Records shall be retained for a minimum of three years for the following items:
- Site inspections
- Compliance certifications
- Discharge reports
- Approved SWPPP document and amendments

600.4 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 Clean Water Act, Section 303(d).

600.4.1 Scope of Monitoring Activities

This project discharges directly into [specify 303(d) water body], a water body listed as impaired due to [specify reason(s) for impairment: Sedimentation/Siltation and/or Turbidity] pursuant to Clean Water Act, Section 303(d). This Sampling and Analysis Plan (SAP) has been prepared pursuant to the requirements of the General Permit (including Resolution 2001-046). The SAP describes the sampling and analysis strategy and schedule for monitoring [specify impairment: Sedimentation/Siltation and/or Turbidity] in the 303(d) listed water body and potential increases in the [specify impairment: Sedimentation/Siltation and/or Turbidity] levels caused by storm water discharges from the project site.

The project has the potential for direct (concentrated) storm water discharges to [specify 303(d) water body] at the following locations, as shown on the WPCDs in Attachment B.

- 
- 
- 

The project does not receive run-on with the potential to combine with storm water that discharges directly to the 303(d) listed water body.

The project receives run-on with the potential to combine with storm water that discharges directly to the 303(d) listed water body at the following locations, as shown on the WPCDs in Attachment B:

- 

600.4.2 Monitoring Strategy

Sampling Schedule

Upstream, downstream, discharge, and run-on samples, if applicable, shall be collected for [specify impairment: Sedimentation/Siltation and/or Turbidity] during the first two hours of discharge from rain events that result in a direct discharge from the project site to [enter 303(d) water body]. Samples shall be collected during daylight hours (sunrise to sunset) and shall be collected regardless of the time of the year, status of the construction site, or day of the week.

All storm events that occur during daylight hours will be sampled up to a maximum of four rain events within a 30-day period. 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.

Sampling Locations

Sampling locations are based on proximity to identified discharge or run-on location(s), accessibility for sampling, personnel safety, and other factors in accordance with the applicable requirements in the General Permit. Sampling locations are shown on the WPCDs and include:

- A sample location (designated number ) is upstream of all direct discharge from the construction site for the collection of a control sample to be analyzed for the prevailing condition of the receiving water without any influence from the construction site. The control sample will be used to determine the background levels of [specify impairment: Sedimentation/Siltation and/or Turbidity] in the 303(d) listed water body upstream of the project, if any.
  - Sample location number is located .

- A sample location (designated number ) is immediately downstream from the last point of direct discharge from the construction site for the collection of a sample to be analyzed for potential increases in [specify impairment: Sedimentation/Siltation and/or Turbidity] in the 303(d) listed water body caused by the storm water discharged from the project, if any.
Sample location number is located.

[Enter number of locations] sampling location(s) (designated number(s)) has been identified for the collection of samples of run-on to the project site with the potential to combine with discharges from the construction site in other than MS4 to the 303(d) water body. These samples will identify potential [specify impairment: Sedimentation/Siltation and/or Turbidity] that originates off the project site and contributes to direct storm water discharges from the construction site to the 303(d) listed water body.

Sample location number is located.

If needed Sample location number is located.

If needed Sample location number is located.

600.4.3 Monitoring Preparation

Samples on the project site will Select one of the following Contractor sampling personnel:

Name/Telephone Number: Name  Phone Number
Name/Telephone Number: Name  Phone Number
Alternate(s)/Telephone Number: Name  Phone Number
Alternate(s)/Telephone Number: Name  Phone Number

Prior to the rainy season, all sampling personnel and alternates will review the SAP. Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I. An adequate stock of supplies and equipment for monitoring [specify impairment: Sedimentation/Siltation and/or Turbidity] will be available on the project site or provided by [specify laboratory] 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 will not be 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 600.4.5, for analyzing samples in the field by Contractor sampling personnel. Safety practices for sample collection will be in accordance with the [enter title and publication date of contractor health and safety plan for the project].

Samples on the project site will be collected by the following [specify laboratory or environmental consultant]:

Company Name:
Address:

Telephone Number:
Point of Contact:

Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I.

SWPPM will contact [specify name of laboratory or environmental consultant] [enter number of hours] hours prior to a predicted rain event to ensure that adequate sample collection personnel, supplies and field test equipment for monitoring [specify impairment: Sedimentation/Siltation and/or Turbidity] are available and will be mobilized to collect samples on the project site in accordance with the sampling schedule.

[Specify name of laboratory or environmental consultant] will obtain and maintain the field-testing instruments, as identified in Section 600.4.5, for analyzing samples in the field by their sampling personnel.

600.4.4 Sample Collection and Handling

Sample Collection Procedures

Grab samples will be collected and preserved in accordance with the methods identified in Table 600-1, “Sample Collection, Preservation and Analysis for Monitoring Sedimentation/Siltation and/or Turbidity” provided in Section 600.4.5. Only personnel trained in proper water quality sampling will collect samples.
Upstream samples will be collected to represent the condition of the water body upgradient of the construction site. Downstream samples will be collected to represent the water body mixed with direct flow from the construction site. Samples will not be collected directly from ponded, sluggish, or stagnant water.

Upstream and downstream samples will be collected using one of the following methods:

- Placing a sample bottle directly into the stream flow in or near the main current upstream of sampling personnel, and allowing the sample bottle to fill completely;

  OR,

- Placing a decontaminated or ‘sterile’ bailer or other ‘sterile’ collection device in or near the main current to collect the sample, and then transferring the collected water to appropriate sample bottles, allowing the sample bottles to fill completely.

Run-on samples, if applicable, will be collected to identify potential sedimentation/siltation and/or turbidity that originates off the project site and contributes to direct discharges from the construction site to the 303(d) listed water body. Run-on samples will be collected downgradient and within close proximity of the point of run-on to the project by pooling or ponding water and allowing the ponded water to spill over into sample bottles directly in the stream of water.

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 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 (COC) form provided by the analytical laboratory, sealed in a re-sealable plastic 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:
Address:

Telephone Number:
Point of Contact:

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 Attachment R. 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:* 0G5304-081801-Upstream).
  - Quality assurance/quality control (QA/QC) samples shall be identified similarly using a unique sample number or designation
    (*Example:* 0G5304-081801-DUP1).
  - 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 sample collection of upstream, downstream, run-on, 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 sedimentation/siltation and/or turbidity were taken during a rain event.
600.4.5 Sample Analysis

Samples will be analyzed for the constituents indicated in Table 600-1, “Sample Collection, Preservation and Analysis for Monitoring Sedimentation/Siltation and/or Turbidity”. 
### Table 600-1

Sample Collection, Preservation and Analysis for Monitoring Sedimentation/Siltation and/or Turbidity

<table>
<thead>
<tr>
<th>Constituent (1)</th>
<th>Analytical Method</th>
<th>Test to be Used?</th>
<th>Sample Preservation</th>
<th>Minimum Sample Volume</th>
<th>Sample Bottle</th>
<th>Maximum Holding Time</th>
<th>Reporting Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Suspended Sediment Concentration (SSC)</td>
<td>ASTM D3977-97</td>
<td>□ YES □ NO</td>
<td>Store at 4˚ C (39.2˚ F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Settleable Solids (SS)</td>
<td>EPA 160.5 Std Method 2540(f)</td>
<td>□ YES □ NO</td>
<td>Store at 4˚ C (39.2˚ F)</td>
<td></td>
<td></td>
<td>mL/L/hr</td>
<td></td>
</tr>
<tr>
<td>(c) Total Suspended Solids (TSS)</td>
<td>EPA 160.2 Std Method 2540(d)</td>
<td>□ YES □ NO</td>
<td>Store at 4˚ C (39.2˚ F)</td>
<td></td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>(d) Turbidity</td>
<td>EPA 180.1 Std Method 2130(b)</td>
<td>□ YES □ NO</td>
<td>Store at 4˚ C (39.2˚ F)</td>
<td></td>
<td></td>
<td>NTU</td>
<td></td>
</tr>
</tbody>
</table>

Notes: (1) Samples shall be analyzed by using methods (b) and (c), or only method (a).

ASTM – American Society for Testing and Materials
°C – Degrees Celsius
°F – Degrees Fahrenheit
EPA – U.S. Environmental Protection Agency
L – Liter
mL/L/hr – Milliliters per liter per hour
mg/L – Milligrams per liter
mL – Milliliters
NTU – Nephelometric Turbidity Unit
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:

<table>
<thead>
<tr>
<th>Field Instrument</th>
<th>Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 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.

600.4.6 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, and will be collected where contaminants are likely, and not on the upstream sample. A duplicate sample will be collected immediately after the primary sample has been collected. Duplicate samples will not influence any evaluations or conclusions; however, they will be used as a check on laboratory quality assurance.

600.4.7 Data Management and Reporting

A copy of all water quality analytical results and QA/QC data will be included in the on-site SWPPP within 5 days of sampling (for field analyses) and within 30 days of sampling (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 document.

600.4.8 Data Evaluation

An evaluation of the water quality sample analytical results, including figures with sample locations, the water quality analytical results, and the QA/QC data for every event that samples are collected, will be included in the on-site SWPPP. Should the downstream sample concentrations exceed the upstream sample concentrations, the Storm Water Pollution Prevention Manager or other personnel will evaluate the BMPs, site conditions, surrounding influences (including the run-on sample analysis), and other site factors to determine the probable cause for the increase.
As determined by the data and project evaluation, appropriate BMPs will be repaired or modified to mitigate increases in sediment concentrations in the water body. Any revisions to the BMPs will be recorded as an amendment to the SWPPP.

600.4.9 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, testing protocols will be revised accordingly. All such revisions will be recorded as amendments to the SWPPP.

600.5 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 the project, in accordance with the requirements of Section B of the General Permit, including SWRCB Resolution 2001-046.

600.5.1 Scope of Monitoring Activities

The following construction materials, wastes or activities, as identified in Section 500.3.1, are potential sources of non-visible pollutants to storm water discharges from the project. Storage, use, and operational locations are shown on the WPCDs in Attachment B.

- LIST
- LIST
- LIST

The following existing site features, as identified in Section 500.3.3, are potential sources of non-visible pollutants to storm water discharges from the project. Locations of existing site features contaminated with non-visible pollutants are shown on the WPCDs in Attachment B.

- (DESCRIBE)
- LIST
- LIST
The following soil amendments have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil and will be used on the project site. Locations of soil amendment application are shown on the WPCDs in Attachment B.

- (LIST)
- 
- 

The project has the potential to receive storm water run-on with the potential to contribute non-visible pollutants to storm water discharges from the project. Locations of such run-on to the project site are shown on the WPCDs in Attachment B.

- (LIST LOCATIONS)
- 
- 

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 the rain event; and (3) there is the potential for discharge of non-visible pollutants to surface waters or drainage system.

600.5.2 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 hours of discharge from rain events that result in a 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 rain events:
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 (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 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 600.5.1, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) applicable BMPs 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 a storm sewer system.

**Sampling Locations**

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrence or use; accessibility for sampling, personnel safety; and other factors in accordance with the applicable requirements in the Permit. Planned sampling locations are shown on the WPCDs in Attachment B and include the following:

[Enter number of locations] sampling locations have been identified for the collection of samples of runoff that drain areas where soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil will be applied.

If applicable Sample location number(s) is located .

[Enter number of locations] sampling locations have been identified for the collection of samples of runoff that drain areas contaminated by historical usage of the site.

If applicable Sample location number(s) is located .
[Enter number of locations] sampling locations have been identified for the collection of samples of run-on to the project site with the potential to combine with discharges being sampled for non-visible pollutants. These samples are intended to identify sources of potential non-visible pollutants that originate off the project site.

If applicable Sample location number(s) is located .

A location has been identified for the collection of an uncontaminated sample of runoff as a background sample for comparison with the samples being analyzed for non-visible pollutants. This location was selected such that the sample will not have come in contact with (1) operational or storage areas associated with the materials, wastes, and activities identified in Section 500.3.1; (2) potential non-visible pollutants due to historical use of the site as identified in Section 500.3.3; (3) areas in which soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied; or (4) disturbed soils areas.

If applicable Sample location number(s) is located .

If an operational activity or storm water inspection conducted 24 hours prior to or during a rain event identifies 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 an unplanned location and has not been identified on the WPCDs, sampling locations will be selected using the same rationale as that used to identify planned locations.

600.5.3 Monitoring Preparation

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

Name/Telephone Number:
Name/Telephone Number:
Alternate(s)/Telephone Number:
Alternate(s)/Telephone Number:

Prior to the rainy season, all sampling personnel and alternates will review the SAP. Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I.
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 600.5.6, for analyzing samples in the field by Contractor sampling personnel.

Safety practices for sample collection will be in accordance with the [ENTER TITLE AND PUBLICATION DATE OF CONTRACTOR'S HEALTH AND SAFETY PLAN FOR THE PROJECT OR PROVIDE SPECIFIC REQUIREMENTS HEREIN].

Samples on the project site will be collected by the following [specify laboratory or environmental consultant]:

Company Name:
Address:

Telephone Number:
Point of Contact:

Qualifications of designated Contractor personnel describing environmental sampling training and experience are provided in Attachment I.

SWPPM will contact [specify name of laboratory or environmental consultant] [enter number of hours] hours prior to a predicted rain 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.
[Specify name of laboratory or environmental consultant] will obtain and maintain the field-testing instruments, as identified in Section 600.5.6, for analyzing samples in the field by their sampling personnel.

### 600.5.4 Analytical Constituents

#### Identification of Non-Visible Pollutants

Table 600-2 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 600-2**

<table>
<thead>
<tr>
<th>Pollutant Source</th>
<th>Pollutant</th>
<th>Water Quality Indicator Constituent</th>
</tr>
</thead>
</table>

### 600.5.5 Sample Collection and Handling

#### Sample Collection Procedures

Samples of discharge will be collected at the designated sampling locations shown on the WPQCDs 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 the Table 600-3, “Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants,” provided in Section 600.5.6. 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 downgradient and within close proximity to the potential non-visible pollutant discharge location. This separate lab-provided sample container will be used to collect water, which will be transferred to sample bottles for laboratory analysis. The upgradient and uncontaminated background samples shall be collected first prior to
collecting the downgradient to minimize cross-contamination. The sampling personnel will collect the water upgradient 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 analyte(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:
Address:

Telephone Number:
Point of Contact:

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 Attachment R.

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: 0G5304-081801-Inlet472).
    - Quality assurance/quality control (QA/QC) samples shall be identified similarly using a unique sample number or designation
      (Example: 0G5304-081801-DUP1).
  - 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 non-visible pollutants were taken during a rain event.

600.5.6 Sample Analysis

Samples will be analyzed for the applicable constituents using the analytical methods identified in Table 600-3, “Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants” in this section.
### Table 600-3
Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Analytical Method</th>
<th>Minimum Sample Volume</th>
<th>Sample Bottle</th>
<th>Sample Preservation</th>
<th>Reporting Limit</th>
<th>Maximum Holding Time</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

Notes:
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:

<table>
<thead>
<tr>
<th>Field Instrument</th>
<th>Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 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.

600.5.7 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.

600.5.8 Data Management and Reporting

A copy of all water quality analytical results and QA/QC data will be included in the on-site SWPPP 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.

600.5.9 Data Evaluation

An evaluation of the water quality sample analytical results, including figures with sample locations, the water quality analytical results, and the QA/QC data, will be included in the on-site SWPPP.
Should the runoff/downgradient sample show an increased level of the tested analyte 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.

600.5.10 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.
RISK ASSESSMENT SECTION

PURPOSE AND OBJECTIVE.

This SWPPP has been updated to provide additional information, per the new requirements, to enhance the current existing SWPPP Report. This Supplemental information includes:

• **Updated Key Project Personnel** - List the Qualified SWPPP Developer (QSD), and Qualified SWPPP Practitioners (QSP).

• **Risk Assessment** - Determine Risk Level - this will address any sampling requirements.

• **Updated Exhibits** - Provide a New Exhibit showing the current graded condition.

II. KEY PROJECT PERSONNEL:

The new General Permit requires that key personnel (e.g., SWPPP preparers, inspectors, etc.) have specific training or certifications to ensure their level of knowledge and skills are adequate to ensure their ability to design and evaluate project specifications that will comply with General Permit requirements.

To ensure that the preparation, implementation, and oversight of the SWPPP is sufficient for effective pollution prevention, a Qualified SWPPP Developer (QSD) and Qualified SWPPP Practitioner (QSP) responsible for creating, revising, overseeing, and implementing the SWPPP must be assigned.

**The QSD / QSP for this SWPPP is:**

Bruce W. Kirby P.E. – RCE 42393
PSOMAS - Vice President Civil Engineering Services
Inland Empire Office:
2010 Iowa Avenue, Suite 101
Riverside, CA 92507
Direct Line: 951.300.2827
bruce.kirby@psomas.com
The Legally Responsible Person (LRP) for this project is:

TBD_______________

ATEP / SOCCC District
28000 Marguerite Parkway
Mission Viejo, CA 92692-3635
Phone: 949.582.4344

III. RISK ASSESSMENT:
Using the Risk based permitting approach, per the new General Permit establishes three levels of risk possible for a construction site. Risk is calculated in two parts: 1) Project Sediment Risk, and 2) Receiving Water Risk.

Risk Determination: Traditional Projects / Overall Risk Determination
There are two major requirements related to site planning and risk determination in this General Permit. The project’s overall risk is broken up into two elements:

(1) project sediment risk (the relative amount of sediment that can be discharged, given the project and location details) and;

(2) receiving water risk (the risk sediment discharges pose to the receiving waters).

Project Sediment Risk:
Project Sediment Risk is determined by multiplying the R, K, and LS factors from the Revised Universal Soil Loss Equation (RUSLE) to obtain an estimate of project-related bare ground soil loss expressed in tons/acre. The RUSLE equation is as follows:

\[ A = (R) (K) (LS) (C) (P) \]

Where:
- \( A \) = the rate of sheet and rill erosion
- \( R \) = rainfall-runoff erosivity factor
- \( K \) = soil erodibility factor
- \( LS \) = length-slope factor
- \( C \) = cover factor (erosion controls)
- \( P \) = management operations and support practices (sediment controls)

The \( C \) and \( P \) factors are given values of 1.0 to simulate bare ground conditions. There is a map option and a manual calculation option for determining soil loss. For the map option, the \( R \) factor for the project is calculated using the online calculator at


The product of \( K \) and \( LS \) are shown on Figure 1.
To determine soil loss in tons per acre, the discharger multiplies the \( R \) factor times the value for \( K \) times \( LS \) from the map.
Calculations Method A – GIS Map Method:

Using the map calculation alternative:

- The KxLS factor is 1.8 (see Statewide Map attached)
- The R Factor is 39 (see below)
- Soils Loss = 1.8 x 39 = 70.2 tons / acre

Rainfall Erosivity Factor Calculator for Small Construction Sites

Facility Information

<table>
<thead>
<tr>
<th>Facility Name:</th>
<th>ATEP</th>
</tr>
</thead>
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<td>Start Date:</td>
<td>04/01/2011</td>
</tr>
<tr>
<td>End Date:</td>
<td>04/01/2012</td>
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<td>Redhill Ave, Tustin, California 92606</td>
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<tr>
<td>Latitude:</td>
<td>33.7083812</td>
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<tr>
<td>Longitude:</td>
<td>-117.8404288</td>
</tr>
</tbody>
</table>

Erosivity Index Calculator Results

AN EROSIVITY INDEX VALUE OF 39.12 HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF 04/01/2011 - 04/01/2012.

A rainfall erosivity factor of 5.0 or greater has been calculated for your site and period of construction. You do not qualify for a waiver from NPDES permitting requirements.

Calculations Method B– Individual Method:

Using the Sediment Risk Factor Worksheet : (see RISK Attachment B)

- The Watershed Erosion Estimate = 2.2 tons/acre.

Summary:
This is a 1.5 acre site, therefore we are using the Method B value of 2.2 tons/acre.
Risk Sediment Risk Level:
Soil loss of less than 15 tons/acre is considered **low** sediment risk.
Soil loss between 15 and 75 tons/acre is **medium** sediment risk.
Soil loss over 75 tons/acre is considered **high** sediment risk.

**Conclusion:**
For this project, we are considered a **Low Sediment Risk**

Receiving Water Risk:
Receiving water risk is based on whether a project drains to a sediment-sensitive waterbody. A sediment-sensitive waterbody is either:
1) on the most recent 303d list for waterbodies impaired for sediment;
2) has a USEPA-approved Total Maximum Daily Load implementation plan for sediment; or
3) has the beneficial uses of COLD, SPAWN, and MIGRATORY.

A project that meets at least one of the three criteria has a **high** receiving water risk.
A list of sediment-sensitive waterbodies will be posted on the State Water Board’s website. It is anticipated that an interactive map of sediment sensitive water bodies in California will be available in the future.

The Risk Levels have been altered by eliminating the possibility of a Risk Level 4, and expanding the constraints for Risk Levels 1, 2, and 3. Therefore, projects with high receiving water risk and high sediment risk will be considered a Risk Level 3 risk to water quality.

Our project discharges into a down stream detention basin and not directly in any receiving waters.
Based upon review of the most recent 303d List, there are no local waterbodies impaired for treatment.

**Summary:**
Therefore, our project has a **Low Receiving Water Risk.**
**Combined Risk**

Using the Combined Risk Management Matrix calculation for our project, we have defined it as a **Level 1 Risk Project**.

Definitions:

- **Risk Level 1 projects will be subject to minimum BMP and visual monitoring requirements**, and
- Risk Level 2 projects will be subject to NALs and some additional monitoring requirements, and
- Risk Level 3 projects will be subject to NELs, and more rigorous monitoring requirements such as receiving water monitoring and in some cases bioassessment.

See Risk Level 1 Requirements – Attachment C
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sediment Risk Factor Worksheet</strong></td>
<td>Entry</td>
<td></td>
</tr>
<tr>
<td><strong>A) R Factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. &quot;Isoerodent&quot; maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B) K Factor (weighted average, by area, for all site soils)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.</td>
<td></td>
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<tr>
<td><strong>Site-specific K factor guidance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C) LS Factor (weighted average, by area, for all slopes)</strong></td>
<td></td>
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<tr>
<td>The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.</td>
<td></td>
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</tr>
<tr>
<td><strong>LS Table</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Watershed Erosion Estimate (=RxKxLS) in tons/acre</strong></td>
<td>2.2464</td>
<td></td>
</tr>
<tr>
<td><strong>Site Sediment Risk Factor</strong></td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Low Sediment Risk: &lt; 15 tons/acre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium Sediment Risk: &gt;=15 and &lt;75 tons/acre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Sediment Risk: &gt;= 75 tons/acre</td>
<td></td>
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</tr>
</tbody>
</table>
For the manual calculation option, the R factor for the project is calculated using the online calculator at http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm. The K and LS factors are determined using Appendix 1.

Soil loss of less than 15 tons/acre is considered low sediment risk. Soil loss between 15 and 75 tons/acre is medium sediment risk. Soil loss over 75 tons/acre is considered high sediment risk.
ATTACHMENT A

Sample Subcontractor Notification Letter

[DATE]

[Subcontractor/Supplier's Name]
[Company]
[Address]
[City, State]

Dear [Subcontractor/Supplier's Name]

Please be advised that this contract is subject to the requirements and conditions of the Riverside Flood Control Board, Order No. 99-08, Requirement for Discharges of Storm Water Runoff associated with New Developments in the General Permit.

In short, the purpose of this system is to eliminate pollutants from entering into the storm drain systems and eventually into our lakes, streams and ocean. Some pollutants include oil, grease, trash, sediment, asphalt emulsions and concrete wastes.

ATEP has developed a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the State requirements.

You, as a Subcontractor/supplier are required to comply with the SWPPP and the Riverside Flood Control Board, Order No. 99-08 and Regional Permits (if any) for all work performed on this site.

Any person or group who violates any condition of the General Permit may be subject to substantial penalties in accordance with Section 309 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. You are encouraged to advise each of your employees working on this project of the pollution prevention plan. Periodic memorandums with paychecks are often effective (see attached sample memorandum).

In the event that any violation of the above referenced permit conditions is committed by a representative of [Subcontractor/Supplier, the liability for any associated penalties levied against ATEP becomes the responsibility of [Subcontractor/Supplier].

A copy of the General Permit, and the SWPPP developed for this site is available for your review at the construction office.

Please call if you have any questions.

Sincerely,

I hereby acknowledge receipt of this document, and agree with the terms and conditions represented herein.

[Subcontractor/Supplier]
## Subcontractor Information/Notification Log

Project Name: **ATEP Hanger Bldg #524**

The list shall include all subcontractor names, responsible individuals, telephone numbers, addresses, specific areas of responsibility, and emergency contact numbers.

<table>
<thead>
<tr>
<th>SUBCONTRACTOR NAME/AREA OF RESPONSIBILITY</th>
<th>CONTACT NAME</th>
<th>ADDRESS</th>
<th>PHONE NUMBER</th>
<th>PAGER/FIFLD EMERGENCY PHONE NUMBER</th>
<th>DATE NOTIFICATION LETTER SENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
ATTACHMENT A

Memorandum to Employees
(May Be Attached Periodically to Paychecks)

TO ALL EMPLOYEES:

ATEP supports the protection of our environment and has developed a program for this project to reduce pollutants from entering the local waterways.

You will be expected to do your part to comply with this program while you are working on this project by:

- Disposing of trash, rubbish, and construction debris properly.
- Reporting, to _________ Contact phone: __________, leaky vehicles or equipment or other pollution sources.
- Covering materials, which may be exposed to the rain,
- Encouraging your co-workers to do the same.

Remember, you and your family are the ones who drink, shower, fish, and enjoy the recreation that is provided by these waters.

A copy of the storm water pollution plan developed for this site is available for your review at the construction office.
Attachment B

BMP Consideration Checklist

<table>
<thead>
<tr>
<th>CONSTRUCTION SITE BMPs</th>
<th>CONSIDERATION CHECKLIST</th>
</tr>
</thead>
</table>

The Contractor shall consider using all BMPs listed hereon. Those BMPs which are not included in the SWPPP shall be checked as "Not Used" with a brief statement describing why it is not being used.

All selected BMPs shall be included in the Schedule of Values, except for those items shown on the plans and paid for as a separate item or work.

### TEMPORARY SOIL STABILIZATION BMPs

<table>
<thead>
<tr>
<th>BMP No.</th>
<th>BMP</th>
<th>MINIMUM REQUIREMENT (a)</th>
<th>CHECK IF CONTRACT REQUIREMENT</th>
<th>CHECK IF USED</th>
<th>CHECK IF NOT USED</th>
<th>IF NOT USED, STATE REASON</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS-1</td>
<td>Scheduling</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>SS-2</td>
<td>Preservation of Existing Vegetation</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>●</td>
<td>Applied if needed</td>
</tr>
<tr>
<td>SS-3</td>
<td>Hydraulic Mulch</td>
<td>4(1)</td>
<td>❌</td>
<td></td>
<td>●</td>
<td>hydroseeding will be used</td>
</tr>
<tr>
<td>SS-4</td>
<td>Hydroteering</td>
<td>4(1)</td>
<td>❌</td>
<td></td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>SS-5</td>
<td>Soil Binders</td>
<td>4(1)</td>
<td>❌</td>
<td></td>
<td>●</td>
<td>hydroseeding will be used</td>
</tr>
<tr>
<td>SS-6</td>
<td>Straw Mulch</td>
<td>4(1)</td>
<td>❌</td>
<td></td>
<td>●</td>
<td>hydroseeding will be used</td>
</tr>
<tr>
<td>SS-7</td>
<td>Geotextiles, Plastic Covers, &amp; Erosion Control Blankets/Mats</td>
<td>4(1)</td>
<td>❌</td>
<td></td>
<td>●</td>
<td>Applied if needed</td>
</tr>
<tr>
<td>SS-8</td>
<td>Wood Mulching</td>
<td></td>
<td>❌</td>
<td></td>
<td>●</td>
<td>applied if needed</td>
</tr>
<tr>
<td><strong>Temporary Concentrated Flow Conveyance Controls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS-9</td>
<td>Earth Dikes/Drainage Swales &amp; Lined Ditches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not anticipated</td>
</tr>
<tr>
<td>SS-10</td>
<td>Outlet Protection/Velocity Dissipation Devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>SS-11</td>
<td>Slope Drains</td>
<td></td>
<td>❌</td>
<td></td>
<td>●</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

(1) The Contractor shall select one of the five measures listed or a combination thereof to achieve and maintain the contract’s rainy season disturbed soil area (DSA) requirements.

(2) Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be verified by the Contractor or determined by Caltrans.
CONSTRUCTION SITE BMPs
CONSIDERATION CHECKLIST

The Contractor shall consider using all BMPs listed hereon. Those BMPs which are not included in the SWPPP shall be checked as "Not Used" with a brief statement describing why it is not being used.
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<table>
<thead>
<tr>
<th>BMP No.</th>
<th>BMP</th>
<th>MINIMUM REQUIREMENT (2)</th>
<th>CHECK IF CONTRACT REQUIREMENT</th>
<th>CHECK IF USED</th>
<th>CHECK IF NOT USED</th>
<th>IF NOT USED, STATE REASON</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-1</td>
<td>Silt Fence</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC-2</td>
<td>Desilting Basin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>grass swale wil be utilize</td>
</tr>
<tr>
<td>SC-3</td>
<td>Sediment Trap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not anticipated</td>
</tr>
<tr>
<td>SC-4</td>
<td>Check Dam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Applicable</td>
</tr>
<tr>
<td>SC-5</td>
<td>Fiber Rolls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Applied if needed</td>
</tr>
<tr>
<td>SC-6</td>
<td>Gravel Bag Berm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sand Bag Barrier will be used</td>
</tr>
<tr>
<td>SC-7</td>
<td>Street Sweeping and Vacuuming</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC-8</td>
<td>Sand Bag Barrier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>applied if needed</td>
</tr>
<tr>
<td>SC-9</td>
<td>Straw Bale Barrier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>silt fence will be used</td>
</tr>
<tr>
<td>SC-10</td>
<td>Storm Drain Inlet Protection</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>applied if needed</td>
</tr>
</tbody>
</table>

| WE-1    | Wind Erosion Control      | 4                       |                               |               |                  | Not Applicable                      |

| TC-1    | Stabilized Construction Entrance/Exit |             |                               |               |                  |                                     |
| TC-2    | Stabilized Construction Roadway      |             |                               |               |                  | No Haul Road                         |
| TC-3    | Entrance/Outlet Tire Wash           |             |                               |               |                  |                                     |

(2) Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be verified by the contractor or determined by Caltrans.
CONSTRUCTION SITE BMPs
CONSIDERATION CHECKLIST

The Contractor shall consider using all BMPs listed hereon. Those BMPs which are not included in the SWPPP shall be checked as "not used" with a brief statement describing why it is not being included. All selected BMPs shall be included in the Schedule of Values, except for those items shown on the plans and paid for as a separate item or work.

### NON-STORM WATER MANAGEMENT BMPs

<table>
<thead>
<tr>
<th>BMP No.</th>
<th>BMP</th>
<th>MINIMUM REQUIREMENT (2)</th>
<th>CHECK IF CONTRACT REQUIREMENT</th>
<th>CHECK IF USED</th>
<th>CHECK IF NOT USED</th>
<th>IF NOT USED, STATE REASON</th>
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</thead>
<tbody>
<tr>
<td>NS-1</td>
<td>Water Conservation Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>NS-2</td>
<td>Dewatering Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Applicable</td>
</tr>
<tr>
<td>NS-3</td>
<td>Paving and Grinding Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>NS-4</td>
<td>Temporary Stream Crossing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Applicable</td>
</tr>
<tr>
<td>NS-5</td>
<td>Clear Water Diversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Applicable</td>
</tr>
<tr>
<td>NS-6</td>
<td>Illicit Connection/Illegal Discharge Detection and Reporting</td>
<td>4</td>
<td></td>
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<tr>
<td>NS-7</td>
<td>Potable Water/Irrigation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Anticipated</td>
</tr>
<tr>
<td><strong>Vehicle and Equipment Operations</strong></td>
<td></td>
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</tr>
<tr>
<td>NS-8</td>
<td>Vehicle and Equipment Cleaning</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NS-9</td>
<td>Vehicle and Equipment Fueling</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>Applied if needed</td>
</tr>
<tr>
<td>NS-10</td>
<td>Vehicle and Equipment Maintenance</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>Applied if needed</td>
</tr>
</tbody>
</table>

(2) Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be verified by the contractor or determined by Caltrans.
CONSTRUCTION SITE BMPs
CONSIDERATION CHECKLIST

The Contractor shall consider using all BMPs listed hereon. Those BMPs which are not included in the SWPPP shall be checked as "not used" with a brief statement describing why it is not being used.
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### WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs

<table>
<thead>
<tr>
<th>BMP No.</th>
<th>BMP</th>
<th>MINIMUM REQUIREMENT (2)</th>
<th>CHECK IF CONTRACT REQUIREMENT</th>
<th>CHECK IF USED</th>
<th>CHECK IF NOT USED</th>
<th>IF NOT USED, STATE REASON</th>
</tr>
</thead>
<tbody>
<tr>
<td>WM-1</td>
<td>Material Delivery and Storage</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-2</td>
<td>Material Use</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-3</td>
<td>Asphalt Concrete Stockpiles</td>
<td></td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-4</td>
<td>Spill Prevention and Control</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-5</td>
<td>Solid Waste Management</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-6</td>
<td>Hazardous Waste Management</td>
<td></td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-7</td>
<td>Contaminated Soil Management</td>
<td></td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-8</td>
<td>Concrete Waste Management</td>
<td></td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-9</td>
<td>Sanitary/Septic Waste Management</td>
<td>4</td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>WM-10</td>
<td>Liquid Waste Management</td>
<td></td>
<td>❌</td>
<td></td>
<td>✗</td>
<td></td>
</tr>
</tbody>
</table>

(2) Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be verified by the contractor or determined by Caltrans.
The Contractor/Owner shall use the following guidelines for maintenance inspection and repair of erosion and sediment control BMPs

<table>
<thead>
<tr>
<th>CONTROLS</th>
<th>MAINTENANCE/ REPAIR MEASURES</th>
<th>INSPECTION FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilization of Graded Areas</td>
<td>Erosion control blankets, or plastic sheeting as necessary.</td>
<td>Prior to a forecasted storm and at 24-hr intervals during extended precipitation events,</td>
</tr>
<tr>
<td>Fiber Rolls</td>
<td>Replace fiber rolls. Remove any accumulated debris.</td>
<td>After any precipitation which cause runoff capable of carrying sediment from the construction site</td>
</tr>
<tr>
<td>Inlet Protection</td>
<td>Remove accumulated debris and repair Sand bags frequently.</td>
<td>After any precipitation which cause runoff capable of carrying sediment from the construction site</td>
</tr>
<tr>
<td>Geotextile, Mats/ Plastic</td>
<td>Check for erosion, undermining, and proper anchoring. Replace torn mats and covers, blankets and anchor as necessary.</td>
<td>After any precipitation which cause runoff capable of carrying sediment from the construction site</td>
</tr>
<tr>
<td>&quot;Chevrons&quot;</td>
<td>Remove accumulated debris and sediment.</td>
<td>After any precipitation which cause runoff capable of carrying sediment from the construction site</td>
</tr>
<tr>
<td>Street Tracking Controls</td>
<td>Clean as necessary using sweeping and/or vacuuming. Do not rely on washing into storm drain.</td>
<td>After any precipitation which cause runoff capable of carrying sediment from the construction site</td>
</tr>
</tbody>
</table>
The Contractor/Owner shall use the following guidelines for maintenance inspection and repair of Non-storm Water BMPs. Inspect before and after storms and at 24 hour intervals during extended storms and as follows:

<table>
<thead>
<tr>
<th>CONTROLS</th>
<th>MAINTENANCE/ REPAIR MEASURES</th>
<th>INSPECTION FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Handling</td>
<td>Check storage facility and replace secondary containers or re-grade any containment berms.</td>
<td>Weekly</td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td>Cover any stockpile with appropriate mats or covers, and or properly dispose of vegetative matter.</td>
<td>Weekly</td>
</tr>
<tr>
<td>Contaminated soil Management</td>
<td>Cover any stockpile with appropriate mats or covers.</td>
<td>Daily; As Necessary</td>
</tr>
<tr>
<td>Waste Container</td>
<td>Schedule pickup. Remove unacceptable materials. Segregate waste. Repair or replace leaking containers as necessary.</td>
<td>Weekly</td>
</tr>
<tr>
<td>Vehicle Storage Areas</td>
<td>Remove leaked material. Replace drip pans or absorbent material. Restock spilled materials.</td>
<td>Weekly; As Necessary</td>
</tr>
<tr>
<td>Septic Waste Facilities</td>
<td>Replace septic container or have container pumped as needed.</td>
<td>Weekly</td>
</tr>
<tr>
<td>Street Sweeping and Vacuuming</td>
<td>Inspect access points, Sweep trucked sediment</td>
<td>Daily; as necessary</td>
</tr>
</tbody>
</table>
ATTACHMENT D

Subcontractor List
(To be filled out upon availability by owner)

Project Name: ATEP Hanger Bldg #524

The list shall include all subcontractor names, responsible individuals, telephone numbers, addresses, specific areas of responsibility, and emergency contact numbers.

<table>
<thead>
<tr>
<th>SUBCONTRACTOR NAME/AREA OF RESPONSIBILITY</th>
<th>CONTACT NAME</th>
<th>ADDRESS</th>
<th>PHONE NUMBER</th>
<th>PAGER/FIFLD EMERGENCY PHONE NUMBER</th>
<th>DATE NOTIFICATION LETTER SENT</th>
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ATTACHMENT E

Training Documentation log

Insert any documentation of training here

<table>
<thead>
<tr>
<th>Date</th>
<th>Training type (ex. Formal class, tailgate session, video) and brief description of subjects discussed (include copy of agenda, training materials, etc.)</th>
<th>Training Duration</th>
<th>Attendees</th>
</tr>
</thead>
</table>

Note: Attach copies of sign-in sheets or other documentation of training (certificates, materials presented, agenda, etc.)
ATTACHMENT G

Construction Site Inspection Checklist

Date: ____________________

Inspected By (Name/title): ____________________________________________

Project: _____________________________________________________________

Weather Information:
Beginning of storm event: ______________________________________________
Storm Duration: _________________________________________________________
Time elapsed since last storm: ___________________________________________
Approximate amount of precipitation (inches): ______________________________

Owner: __________________________________________________________________

Owner’s Inspector: ______________________________________________________

________________________________________________________________________

Check “Yes” or “No” or “N/A” if not applicable
YES   NO   N/A

____     ____     ____    1. Has there been a presence of rain since the last inspection?

____     ____     ____    2. Are all inlets and perimeter control in place?

____     ____     ____    3. Are all BMPs (sediment, erosion, tracking control devices) in-place in accordance with the SWPPP and are they functioning properly?

____     ____     ____    4. If present, are all significant erodible slopes protected from erosion through the implementation of acceptable soil stabilization practices?

____     ____     ____    5. If present, are all sediment basins/traps functioning properly?

____     ____     ____    6. Are all material handing and storage areas reasonably clean and free of spills, leaks, or other deleterious materials?

____     ____     ____    7. Are all equipment storage and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious materials?

____     ____     ____    8. Are all materials and equipment properly covered?

____     ____     ____    9. Are all discharged points reasonably free of any noticeable pollutant discharges?

____     ____     ____    10. Are all discharge points reasonably free of any significant erosion or sediment transport?

____     ____     ____    11. Are all BMPs identified on the SWPPP installed in the proper location and according to the specifications for the plan?

____     ____     ____    12. Are all BMPs in good repair and maintained in functional order?
ATTACHMENT H

REPORTING RECORDS

Keeping all reportable records listed below, except site inspections reports, here. The Owner/Contractor will submit an annual report by September 1st of each year for July 31st to August 1st to the Riverside Flood Control Board. The annual report shall include all items that are applicable, listed below.

• All inspection reports (from Attachment G)
• All analytical data (sampling results) for the past 12 months
• Proposed revisions to the SWPPP (Amendments)
• Compliance Certification

If no analytical data is obtained due to lack of discharge and no revisions to the SWPPP occur, the report shall note the following:

• No analytical (sampling) where taken in the past 12 months
• There have been no revisions to the swppp in the past 12 months
<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
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13. Are all on-site traffic routes, parking, and storage of equipment and supplies restricted to areas designated in the SWPPP for those uses?

14. Are all locations of temporary soil stockpiles or construction materials in approved areas?

15. Are all seeded or landscaped areas properly maintained?

16. Are sediment controls in place at discharge points from the site?

17. Are slopes free of significant erosion?

18. Is sediment, debris, or mud being cleaned from public roads at intersections with site access roads?

19. Does the SWPPP reflect current site conditions?

If you answered “no” to any of the above questions, describe any inadequate BMPs, describe any corrective action necessary including changes to the SWPPP, which must be taken to remedy the problem, and when the corrective action is to be completed.

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
If it is possible to safely access during inclement weather, list observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list result of visual inspection at relevant outfall, discharge point, or downstream location and projected required maintenance activities.

Erosion Controls:

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

Sediment Controls:

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

Chemical and Waste Controls:

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

Inspector Signature:______________________________
Date:______________________________
<table>
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<tr>
<th>Date</th>
<th>Inspector</th>
<th>Comments</th>
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ATTACHMENT I

ANNUAL CERTIFICATION OF COMPLIANCE (SAMPLE)
(TO BE COMPLETED PRIOR TO DECEMBER 1 OF EACH CALENDAR YEAR)

[DATE]

To: State Water Resources Control Board
   Division of Water Quality
   1001 I Street
   Sacramento, CA 95814

Site: ATEP Hanger Bldg #524

The undersigned, being a person duly authorized by the Owner/Contractor of the site to make this certification and used upon the site inspections conducted at the site during the prior twelve month period in accordance with the storm water pollution prevention plan prepared for this site and construction activity covered by the General Permit, does hereby certify that the construction activity is in compliance with the requirements of the Riverside Flood Control Board, Order No. 99-08, General Permit, and the Storm Water Pollution Prevention Plan (SWPPP) prepared for this project.

__________________________________________
Contractor's Signature

__________________________________________
Title

__________________________________________
Date
ATTACHMENT K

NOTICE OF NON-COMPLIANCE

(SAMPLE)

To: State Water Resources Control Board
   Division of Water Quality
   1001 I Street
   Sacramento, CA 95814

Site: ATEP Hanger Bldg #524

In accordance with the Riverside Flood Control Board, Order No. 99-08, Requirement for discharges of storm water runoff associated with new developments in the General Permit. Notice is hereby given that the following event(s) of non-compliance with the General Permit or the Storm Water Pollution Prevention Plan (SWPPP) for the subject site located at [insert general description of site location] occurred within ________________ days prior to the date of the notice:

Date of non-compliance event: ___________________________

Describe event(s) of non-compliance: __________________________________________________________

Initial assessment of impact caused by event: ______________________________________________________

The following actions are necessary to achieve compliance and shall be implemented by the dates stated below.

<table>
<thead>
<tr>
<th>Actions to be Taken</th>
<th>Commencement Date</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>[list]</td>
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</tbody>
</table>

Steps to be taken to reduce or eliminate chance of recurrence: __________________________________________
______________________________________________________________________________________________

Please notify the undersigned should you need any further information concerning this notice or desire to modify the above schedule.

________________________  ______________________
Contractor's Signature      Date

________________________  ______________________
Name, Title      Phone Number
SECTION 01010-SUMMARY OF PROJECT

PART 1-GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Work covered by Contract Documents for this portion of the project.
   2. Contracts.
   3. Administrative and procedural sections applicable to all Contracts.

1.02 RELATED SECTIONS

A. General Conditions, Supplementary Conditions, Special Conditions or such other Conditions/Provisions as may be applicable to this Contract.

1.03 PROJECT-WORK COVERED BY ALL CONTRACT DOCUMENTS

A. Work of the prime Contract shall include the construction of:

   1. Project Title: South Orange County Community College District
      ATEP – Advanced Education & Technology Park
      15445 Lansdowne Road
      Tustin, California 92782

   2. Project Location:
      South Orange County Community College District
      ATEP – Advanced Education & Technology Park
      15445 Lansdowne Road
      Tustin, California 92782

   3. Project Description:
      a. Removal of existing building #524 (Hangar), building #526,
         miscellaneous utility structures, and utilities from the site.
      b. Site shall be finished clear and level.
      c. Existing vaults shall be filled with engineered fill.
         1. Fill to be compacted to requirements indicated in section 02300
            Earthwork.

1.04 WORK INCLUDED IN THE CONTRACT

A. The Work Includes: Architectural, Civil, and Dry Utility Demolition.

B. Cooperate fully with separate Contractors so that work under those Contracts may be
   carried out smoothly, without interfacing with or delaying work under this Contract.

C. The District may award separate Contracts for additional work to be performed at the site.

1.05 CONTRACT

A. Perform Work of this Contract as bid, under a stipulated sum with the District.

1.06 DOCUMENTS

A. The Contract shall consist of the execution and completion of all work described in the
   Project Manual and the Drawings, including:
   1. Owner-Contractor Agreement.
4. General Conditions.
5. Special Conditions.
7. Drawings: All those sheets titled and numbered on the Title Sheet.
8. Specifications: All those sections titles and numbered in the Table of Contents in the forepart of the Project Manual.
9. Addenda issued prior to execution of the Contract.
10. Modifications issued after execution of the Contract.
11. Performance Bond.
12. Labor and Material Bond.

1.07  CONTRACT DRAWINGS

A. The Drawings provided with and identified in the Project Manual are the Drawings referenced in the Project Manual.
B. The location, extent and configuration of the required construction and improvements are shown and noted on Drawings. An index of Drawings is included on the title page of the Drawings.
C. Drawings are arranged into series according to design discipline. Such organization and all references to trades, sub-contractors, specialty contractors or suppliers shall not control the Contractor in assigning the Work among sub-contractors or in establishing the extent of the work to be performed by any trade.
D. Where the terms “as shown,” “as indicated,” “as noted,” “as detailed,” “as scheduled,” or terms of like meaning are used in the Drawings or Specifications, it shall be understood that reference is being made to the Drawings referenced in the Project Manual.
E. Where reference to the word “plans” is made anywhere in Drawings, Specifications and related Contract Documents, it shall be understood to mean the Drawings references in the Project Manual.

1.08  CONTRACT SPECIFICATIONS

A. The Specifications provided in the Project Manual are the Specifications referenced in the Agreement.
B. Specifications are organized by Divisions and Sections in accordance with the recommended practices of the Construction Specifications Institute. Such organization shall not control the Contractor in assigning the work among subcontractors or in establishing the extent of work to be performed by any trade.
C. Specifications are included in the Project Manual, which also may include other documents related to the project, including, but not limited to, Information for Bidders, Proposal Form or Bid Form, Agreement, Certifications and Attachments, Soils and Geotechnical Data, Sample Forms and Schedules.

PART 2-PRODUCTS

Not Used.

PART 3-EXECUTION

3.01  USE OF PREMISES

A. CONTRACTOR shall coordinate the Work of all trades, with DISTRICT and/or Separate Work Contract. CONTRACTOR shall sequence, coordinate, and perform the Work to
impose minimum hardship on the operation and use of the existing facilities and/or Project site. CONTRACTOR shall install all necessary protection for existing improvements, Project site, property, and new Work against dust, dirt, weather, damage, vandalism, and maintain and relocate all protection to accommodate progression of the Work.

B. CONTRACTOR shall confine entrance and exiting to the Project site and/or facilities to routes designated by the District.

C. CONTRACTOR shall utilize all available means to prevent generation of unnecessary noise and maintain noise levels to a minimum. When required by the District, CONTRACTOR shall immediately discontinue noise-generating activities and/or provide alternative methods to minimize noise generation. CONTRACTOR shall install and maintain air compressors, tractors, cranes, hoists, vehicles, and other internal combustion engine equipment with mufflers, including unloading cycle of compressors. CONTRACTOR shall discontinue operation of equipment producing objectionable noise as required by the District.

D. CONTRACTOR shall secure work areas with fencing, gates, and locking devices.

E. CONTRACTOR assumes custody and control of DISTRICT property, both fixed and portable, remaining in existing facilities vacated during the Work.

END OF SECTION 01010
SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination Drawings.
2. Administrative and supervisory personnel.
3. Project meetings.

B. Related Sections include the following:

1. General Conditions.
2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly demolition of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other.

B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly demolition of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other.

1. Schedule demolition operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Installation and removal of temporary facilities and controls.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1.5 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Pre-demolition Conference: Schedule a Pre-demolition Conference before starting, at a time convenient to Owner, Construction Manager, and Architect, but no later than 10 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and District Environmental consultant; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
   a. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing.
d. Designation of key personnel and their duties.
e. Procedures for processing field decisions and Change Orders.
f. Procedures for requests for interpretations (RFIs).
g. Procedures for testing and inspecting.
h. Procedures for processing Applications for Payment.
i. Distribution of the Contract Documents.
j. Submittal procedures.
k. Preparation of Record Documents.
l. Use of the premises.
m. Work restrictions.
n. Owner's occupancy requirements.
o. Responsibility for temporary facilities and controls.
q. Parking availability.
r. Office, work, and storage areas.
s. Equipment deliveries and priorities.
t. First aid.
u. Security.
w. Progress cleaning.
x. Working hours.

C. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner, Construction Manager, Architect, District Environmental consultant, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review Short-Interval Progress Schedule since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Access.
5) Site utilization.
6) Temporary facilities and controls.
7) Work hours.
8) Hazards and risks.
9) Progress cleaning.
10) Quality and work standards.
11) Status of correction of deficient items.
12) Field observations.
13) Requests for interpretations (RFIs).
14) Status of proposal requests.
15) Pending changes.
16) Status of Change Orders.
17) Pending claims and disputes.
18) Documentation of information for payment requests.

3. Minutes: Construction Manager will record and distribute to Contractor the meeting minutes.

4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue Short-Interval Schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310
SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections include the following:

1. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
2. Division 1 Section "Quality Requirements" for submitting test and inspection reports.
3. Division 1 Section "Closeout Procedures" for submitting warranties.
4. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
5. Divisions 2 through 16 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's and Construction Manager's responsive action.

B. Informational Submittals: Written information that does not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

   a. Architect and/or Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
B. Submittals Schedule: Provide list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal from Construction Manager. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

   1. Initial Review: Allow fourteen (14) calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
   2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. Resubmittal Review: Allow ten (10) calendar days for review of each resubmittal.

D. Identification: Place a permanent label or title block on each submittal for identification.

   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect and Construction Manager.
   3. Include the following information on label for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name and address of Architect and Construction Manager.
      d. Name and address of Contractor.
      e. Name and address of subcontractor.
      f. Name and address of supplier.
      g. Name of manufacturer.
      h. Submittal number or other unique identifier, including revision identifier.

         1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
         i. Number and title of appropriate Specification Section.
         j. Drawing number and detail references, as appropriate.
         k. Location(s) where product is to be installed, as appropriate.
         l. Other necessary identification.

E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect or Construction Manager observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

   1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Construction Manager.
   2. Additional copies submitted for maintenance manuals will not be marked with action taken.
G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Construction Manager will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Provide locations on form for the following information:
   a. Project name.
   b. Date.
   c. Destination (To:).
   d. Source (From:).
   e. Names of subcontractor, manufacturer, and supplier.
   f. Category and type of submittal.
   g. Submittal purpose and description.
   h. Specification Section number and title.
   i. Drawing number and detail references, as appropriate.
   j. Remarks.
   k. Signature of transmitter.

2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and Construction Manager on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating from Architect's and Construction Manager's action stamp taken by Architect and Construction Manager.

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. General: Electronic copies of CAD Drawings of the Contract Drawings can be purchased from the Architect for Contractor's use in preparing submittals.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Standard color charts.
   e. Manufacturer's catalog cuts.
   f. Wiring diagrams showing factory-installed wiring.
   g. Printed performance curves.
   h. Operational range diagrams.
   i. Mill reports.
   j. Standard product operation and maintenance manuals.
   k. Compliance with specified referenced standards.
   l. Testing by recognized testing agency.
   m. Application of testing agency labels and seals.
   n. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit six (6) copies of Product Data, unless otherwise indicated. Architect, through Construction Manager, will return three (3) copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. All submittals of shop drawings, catalog cuts, data sheets, schedules and material lists shall be complete and shall conform to contract drawings and specifications. The Contractor shall prepare, pay for and print the necessary quantities of shop drawings and submittals as required. Submittal copies shall be neatly bound with sturdy labeled covers. For each item listed include manufacturer’s name and address, trade name, local supplier’s name and address, catalog number, catalog cuts and brochures, complete technical and performance data for machinery and equipment. Mark cuts, brochures, and data to indicate items proposed and the intended use.

2. The term “shop drawing” as used herein shall be understood to include, but not be limited to, detail design calculations, fabrication and installation drawings, lists, graphs and operating instructions.

3. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.
m. Relationship to adjoining construction clearly indicated.
n. Seal and signature of professional engineer if specified.
o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

4. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

5. Number of Copies: Submit six (6) opaque (bond) copies of each submittal. Architect, through Construction Manager, will return three (3) copies.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, through Construction Manager, will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit six (6) sets of Samples.
   1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
   2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
   1. Number of Copies: Submit three (3) copies of each submittal, unless otherwise indicated. Architect and Construction Manager will not return copies.
   2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers’ names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

U. Material Safety Data Sheets (MSDSs): Submit information directly to Construction Manager; do not submit to Architect, except as required in "Action Submittals" Article.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S AND/OR CONSTRUCTION MANAGER'S / ACTION

A. General: Architect and Construction Manager will not review submittals that do not bear Contractor's approval stamp and will return them without action.
1. Action Submittals: Architect and Construction Manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect and Construction Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

B. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect and Construction Manager will forward each submittal to appropriate party.

C. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

D. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01330
SECTION 01420 - TESTING AND INSPECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Testing and inspection services to meet requirements of the California Building Code (CBC), Title 24, Parts 1 and 2, and as indicated on the Drawings.

B. One or more DSA certified inspectors employed by the OWNER in accordance with the requirements of California Building Standards Administrative Code will be assigned to the Work with their duties as specifically defined in Section 4-333(b).

C. Tests of materials are required by a DSA certified testing agency as set forth in Section 4-335 of the California Building Standards Administrative Code.

PART 2 – PRODUCTS (Not applicable)

PART 3 – EXECUTION

3.01 TESTS

A. OWNER will select an independent testing agency to conduct tests, sampling, and testing of materials. Selection of material to be tested shall be by the agency and not by CONTRACTOR.

B. Any material shipped from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from IOR such testing and inspection is not required shall not be incorporated into the Work.

C. OWNER will select and directly reimburse testing agency the costs for all Agency and/or Agency required tests and inspections, but may be reimbursed by CONTRACTOR for such costs as noted in related sections of the Contract Documents.

D. The independent testing agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work. The agency shall not perform any duties of CONTRACTOR.

E. CONTRACTOR shall provide an insulated curing box for concrete cylinders and will relocate said box and cylinders as rapidly as required in order to provide for progress of the Work.

3.02 TEST REPORTS

A. Test reports shall include all tests performed, regardless of whether such tests indicate the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. Reports shall indicate the material or materials were sampled and tested in accordance with requirements of CBC, Title 24, Parts 1 and 2, as indicated on the Drawings. Test reports shall indicate specified design strength. They shall also definitely state whether or not material or materials tested comply with the specified requirements.
3.03 VERIFICATION OF TEST REPORTS

A. Each testing agency shall submit to the District, Architect, and Construction Manager, a verified report in duplicate covering tests which are required to be performed by that agency during progress of the Work. Such report shall be furnished each time construction on the Work is suspended, covering tests up to that time, and prior to Final Completion of the Work, covering all tests.

3.04 INSPECTION BY OWNER

A. OWNER and its representatives shall at all times have access, for purpose of inspection, to all parts of the Work and to shops wherein the Work is in preparation, and CONTRACTOR shall at all times maintain proper facilities and provide safe access for such inspection.

B. OWNER shall have the right to reject materials and/or workmanship deemed defective Work, and to require correction. Defective workmanship shall be corrected in a satisfactory manner and defective materials shall be removed from the premises and legally disposed of, all without charge to OWNER. If CONTRACTOR does not correct such defective Work within a reasonable time, fixed by written notice and in accordance with the terms and conditions of the Contract Documents, OWNER may correct such defective Work and proceed in accordance with related Articles of the Contract Documents.

C. CONTRACTOR is responsible for compliance to all applicable local, state, and federal regulations regarding codes, regulations, ordinances, restrictions, and requirements.

3.05 INSPECTOR OF RECORD

A. Inspector of Record is employed by OWNER in accordance with requirements of Title 24 of the California Code of Regulations with their duties specifically defined therein.

B. Inspection of Work shall not relieve CONTRACTOR from any obligation to fulfill all of the terms and conditions of the Contract Documents.

C. CONTRACTOR shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

3.06 TESTS AND INSPECTIONS

A. The following tests and inspections do not limit inspection of the Work but are required by DSA, other agencies, or are required in related Sections of the Contract Documents.

B. Excavations, Foundations and Retaining Walls - CBC, Chapter 18A:

1. Inspection:
   a. All excavation foundation work and soil compaction shall be inspected by the Inspector of Record.
F. Site work, Demolition & Construction

1. Inspection

   a. Excavation and Fill CBC 1803A

END OF SECTION 01420
SECTION 01430 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.

3. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.

2. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect or Construction Manager.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing,
or operation; they are not Samples. Accepted mockups establish the standard by which the Work will be judged.

D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Product Testing: Tests and inspections that are performed by a District approved testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspection.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST’s National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:
   a. Provide test specimens representative of proposed products and construction.
   b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
   c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
   d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
   e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
   f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, through Construction Manager, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect or Construction Manager.
2. Notify Architect and Construction Manager seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's and Construction Manager's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 16.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 72 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
C. Manufacturer’s Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section “Submittal Procedures.”

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor’s responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.


1. Notify Architect, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work.
1. Distribution: Distribute schedule to Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency and required special inspector(s) to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.
7. Submit Final Verified Report (DSA-6 format) at completion of accepted work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's and Construction Manager's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor’s responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01430
SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

PART 1 – GENERAL

1.01 WORK INCLUDED

A. Waste Management Objective for the Project:

1. This Project shall minimize the generation of construction and demolition waste at the site. Factors that contribute to waste, such as over-packaging, improper storage, ordering error, poor planning, breakage, mishandling, and contamination shall be minimized.

2. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused or recycled. Waste disposal in landfills shall be minimized.

B. Diversion From Landfill: Waste categories appropriate for diversion from landfill shall include, but not be limited to, the following:

1. Land clearing debris
2. Soil
3. Wood: Clean dimensional wood, palette wood
4. Sheet Wood: Plywood, OSB and particle board
5. Concrete
6. Concrete Masonry Units (CMU)
7. Asphalt Concrete
8. Paper
   a. Bond
   b. Newsprint
   c. Cardboard and paper packaging materials
9. Cement Fiber Products: panels,
10. Metals
   a. Ferrous
   b. Non-ferrous
11. Paint
12. Rigid Foam
13. Glass
14. Plastics
15. Beverage containers
16. Insulation
17. Gypsum Board
18. Porcelain Plumbing Fixtures
19. Fluorescent Light Tubes (per Dept. of Toxic Substances Control regulations)

1.02 RELATED REQUIREMENTS

A. General & Supplementary Conditions

1.03 REFERENCES

A. The California Integrated Waste Management Board (CIWMB); including the California Materials Exchange (CalMAX), Telephone 877-520-9703; www.ciwmb.ca.gov/calmax/.
B. Local Integrated Waste Management Programs and Re-Use Programs in the Project area.

C. The Department of Toxic Substances Control (DTSC)

1.04 WASTE MANAGEMENT

A. Waste management goals:

1. The Owner has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.

2. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

B. Manager: Contractor shall designate on-site party (or parties) responsible for instructing workers and subcontractors, and overseeing and documenting results of Waste Management for the Project.

C. Distribution: Contractor shall distribute copies of the Construction Waste Estimate and Waste Management Report forms to the Job Site Foreman, each Subcontractor, and the State’s Representative.


E. Field Measurements: Contractor is to verify that field measurements are as indicated on construction and/or shop drawings before confirming product orders or proceeding with work, in order to minimize waste due to excessive materials.

F. Materials Handling Procedures: Provide means by which waste materials will be protected from contamination, and means to be employed in reuse or recycling of waste material consistent with requirements for acceptance by receiving facilities.

1. Separation Facilities: Contractor shall lay out and label a specific area to facilitate separation of materials for reuse and recycling. Recycling and waste bin areas shall be kept neat and clean and clearly marked in order to avoid contamination of materials.

2. Hazardous Wastes: Hazardous wastes shall be separated, stored, and disposed of according to local regulations, and in accordance with specifications for such work as may be included in this Project.

3. Instruction: Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at appropriate stages of the Project.

G. PACKING AND SHIPPING:

1. Shipping: Coordinate the schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
2. Packing: Arrange for the return of packing materials, such as wood pallets, where economically feasible.

1.05 WASTE MANAGEMENT PLAN

A. Draft Waste Management Plan: Within 10 calendar days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Owner and Architect a Draft Waste Management Plan.

B. The Draft Plan shall contain the following:

1. Analysis of the proposed jobsite waste to be generated, including types and quantities.
2. Landfill options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
3. Alternatives to Landfilling: A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material.
4. “Net” means that the following have been subtracted from the cost of separating and recycling: (a) revenue from the sale of recycled or salvaged materials and (b) landfill tipping fees saved due to diversion of materials from the landfill. The list of these materials is to include, at minimum, the following materials:
   a. Cardboard.
   b. Clean dimensional wood.
   c. Beverage containers.
   d. Land clearing debris.
   e. Concrete.
   f. Bricks.
   g. Concrete Masonry Units (CMU).
   h. Steel.
   i. Asphalt.
   j. Metals from banding, stud trim, ductwork, piping, rebar.
   k. Roofing, other trim, steel, iron, galvanized sheet steel.
   l. Stainless steel, aluminum, copper, zinc, lead, brass, and bronze.

C. Resources for Development of Waste Management Plan: The following sources may be useful in developing the Draft Waste Management Plan:

1. Triangle J Council of Governments
2. Recycling Haulers and Markets

D. Final Waste Management Plan: Once the Owner has determined which of the recycling options addressed in the draft Waste Management Plan are acceptable, the Contractor shall submit, within 10 calendar days a Final Waste Management Plan.

E. The Final Waste Management Plan shall contain the following:

1. Analysis of the proposed jobsite waste to be generated, including types and quantities.
2. Landfill options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
3. Alternatives to Landfilling: A list of the waste materials from the Project that will be separated for reuse, salvage, or recycling.
4. Meetings: A description of the regular meetings to be held to address waste management.
5. Materials Handling Procedures: A description of the means by which any waste materials will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.
6. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.

1.06 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project.

B. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Architect.

C. Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.

D. Separation facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.

E. Hazardous wastes: Hazardous wastes shall be separated, stored, and disposed of according to local regulations and Hazardous Material Removal Specifications.

F. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste Generated by the Project. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:

1. The amount (in tons or cubic yards) of material land filled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost.
2. Include manifests, weight tickets, receipt, and invoices.
3. For each material recycled, reused, or salvaged from the Project, the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling each material. Attach manifests, weight tickets, receipts, and invoices.

1.07 WASTE MANAGEMENT REPORT

A. Upon completion of Work, including final cleanup, provide a final Waste Management Report.
1. The total quantity of each waste material generated; and the date(s) removed from the job-site.

2. The percent of the total quantity generated of each material sent to landfill, the identity of the landfill (receiving facility), handling costs, transport costs, tipping fees paid at the landfill, and total landfill costs. Attach copies of manifests, weight tickets, receipts, and invoices.

3. For each material reused or recycled from the Project, include the percent of the total quantity generated, the identity of the receiving facility, the total costs of handling and transportation, and income. Attach manifests, weight tickets, receipts, and/or invoices.

1.08 PREPARATION

A. Storage and Protection: Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products, and accessories covered and off the ground, and store in a dry, secure area.

C. Prevent contact with material that may cause corrosion, discoloration, or staining.

D. Protect all materials and installations from damage by the activities of other trades.

1.09 INSTALLATION

A. Install product(s) per manufacturer’s recommendations to reduce damage to or waste of materials by required replacement.

1.10 WASTE MANAGEMENT

A. Source separation: Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to maximize recyclability and salvageability of identified materials.

B. Return: Set aside and protect misdelivered and substandard products and materials and return to supplier for credit.

C. Reuse and Salvage: Set aside, sort, and protect separated products and materials for collection, re-use, and/or salvage.

D. Recycling: Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclables.

END OF SECTION 01524
## FORM CWM-1: CONSTRUCTION WASTE IDENTIFICATION

<table>
<thead>
<tr>
<th>MATERIAL CATEGORY</th>
<th>GENERATION POINT</th>
<th>EST. QUANTITY OF MATERIALS RECEIVED* (A)</th>
<th>EST. WASTE - % (B)</th>
<th>TOTAL EST. QUANTITY OF WASTE* (C = A x B)</th>
<th>EST. VOLUME CY (CM)</th>
<th>EST. WEIGHT TONS (TONNES)</th>
<th>REMARKS AND ASSUMPTIONS</th>
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* Insert units of measure.
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## FORM CWM-3: CONSTRUCTION WASTE REDUCTION WORK PLAN

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<th>MATERIAL CATEGORY</th>
<th>GENERATION POINT</th>
<th>TOTAL EST. QUANTITY OF WASTE TONS (TONNES)</th>
<th>DISPOSAL METHOD AND QUANTITY</th>
<th>HANDLING AND TRANSPORTION PROCEDURES</th>
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<td>EST. AMOUNT SALVAGED TONS (TONNES)</td>
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<td>Packaging: Crates</td>
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<td>Packaging: Paint Cans</td>
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<td>Plywood or OSB (scraps)</td>
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<td>Wood Forms</td>
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<th>QUANTITY OF WASTE RECYCLED ESTIMATED TONS (TONNES) (C)</th>
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SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
1. Coordinate product list with Contractor's Construction Schedule and the Submittal Schedule.
2. Form: Tabulate information for each product under the following column headings:
   a. Specification Section number and title.
   b. Generic name used in the Contract Documents.
   c. Proprietary name, model number, and similar designations.
   d. Manufacturer's name and address.
   e. Supplier's name and address.
   f. Installer's name and address.
   g. Projected delivery date or time span of delivery period.
   h. Identification of items that require early submittal approval for scheduled delivery date.
3. Initial Submittal: Within 10 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
4. Completed List: Within 30 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
5. Architect's Action: Architect will respond in writing to Contractor within 14 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Prior to Bid Opening.
   a. Should the bidder wish to request prior to bid opening, any substitution for the materials, process, service or equipment specified, the bidder shall submit a written request at least ten (10) working days before the bid opening date and hour.
   b. If the substituted item is acceptable, the DISTRICT will approve it in an Addendum issued to all bidders of record. Requests received less than ten (10) working days prior to bid opening will not be considered.
   c. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the project.
2. After Bid Opening and Prior to Award of Contract.
   a. If the bidder clearly indicates in its bid that it is proposing to use an “equal” product, the brand name or trade name, if any, of a proposed substitute item shall be provided in the bid or shall be otherwise clearly identified in the bid. Any submittal provided, that is not indicated in the Bid, will not be considered. If the bidder fails to indicate an “equal” product, its bid shall be considered as offering the material,
process, service or equipment referred to by the brand name or trade name specified. It is expressly understood and agreed to by the bidder that the DISTRICT reserves the right to reject any such proposed substituted item. It is further expressly understood and agreed by bidder that in the event the DISTRICT rejects a proposed “equal” item, the bidder will then supply the material; process, service or equipment designated by brand name or trade name or a substitute therefore which meets with the approval of the DISTRICT.

b. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the Project. The DISTRICT is not responsible for locating or securing any information which is not included in such substantiating data. The burden of proof as to the quality or suitability of proposed substituted items shall be borne by the bidder. The DISTRICT shall be the sole judge as to the quality and suitability of proposed substituted items, and decisions of the DISTRICT shall be final and conclusive. Unless extended by the mutual agreement of the parties, the DISTRICT shall notify the successful bidder of the decision concerning the proposed substitution of “equal” items prior to the award of the contract. Also such decisions by the DISTRICT shall be in writing, and no proposed substituted item shall be deemed approved unless the DISTRICT has so indicated in writing. These time limitations shall be complied with strictly, and in no case will an extension of time for completion be granted because of the bidder’s failure to request the substitution of an item at the times and in the manner set forth herein.

c. Whenever in specifications any materials, process, service or equipment is indicated or specified by brand name, trade name, proprietary name or by name of manufacturer, such specification shall be deemed to be used for the purpose of facilitating description of material, process, service or equipment desired and shall be deemed to be followed by the words "or equal," and CONTRACTOR may, unless otherwise stated, offer any material, process, service, or equipment which shall be substantially equal or better in every respect to that so indicated or specified subject to DISTRICT or ARCHITECT approval.

d. If material, process, service, or equipment offered by CONTRACTOR is not, in opinion of ARCHITECT, or DISTRICT, substantially equal or better in every respect to that specified, then CONTRACTOR shall furnish the material, process, service, or equipment specified. Burden of proof as to equality of any material, process, service, or equipment shall rest with CONTRACTOR. Provision authorizing submission of "or equal" substantiating data shall not in any way authorize an extension of time for performance of this Agreement nor shall DISTRICT or ARCHITECT authorize the submission of “or equal” substantiating data within twenty five (25) days of the filing of the Notice of Completion on the Project.

e. In the event CONTRACTOR furnishes material, process, service or equipment other than what was specified by the DISTRICT and which has been accepted by the DISTRICT and which later is defective, then CONTRACTOR at its sole cost and expense shall furnish the DISTRICT specified material, process, service or equipment or fully replace with new the defective material process, service or equipment at DISTRICT’s discretion.

f. In the event CONTRACTOR furnishes material, process service, or equipment more expensive than that specified, difference in cost of such material, process, service, or equipment so furnished shall be borne by CONTRACTOR. Any engineering, design fees, or approval agencies’ fees required to make adjustments
in material or work of all trades directly or indirectly affected by the approved substituted items shall be borne entirely by CONTRACTOR. Any difference in cost between an approved substitution which is lower in cost than the originally specified item shall be refunded or credited by CONTRACTOR to DISTRICT.

g. Price, fitness and quality being equal with regard to supplies, the District may prefer supplies grown, manufactured, or produced in California and next prefer supplies partially manufactured grown, or produced in California provided the bids of said suppliers or the prices quoted by them do not exceed by more than 5% of the lowest bids/prices quoted by out of state suppliers, the major portion of the manufacture of the supplies is not done outside of California and the public good will be served thereby. (Government Code section 4330-4334)

3. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Submit six (6) copies of pertinent information, technical data and a letter identifying the changes shall be issued by the CONTRACTOR when requesting use of alternate materials

b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

4. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor, through Construction Manager, of acceptance or rejection of proposed substitution within 14 days of receipt of request.

a. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor, through Construction Manager, of approval or rejection of proposed comparable product request within 14 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.

2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600
SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Demolition.
2. Field Engineering.
3. Correction of the Work.

B. Related Sections include the following:

1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section "Submittal Procedures" for submitting surveys.
3. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
4. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

A. Certified Surveys: Submit two copies signed by land surveyor or professional engineer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.
B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning demolition, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, and record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   a. Description of the Work.
   b. List of detrimental conditions, including substrates.
   c. Recommended corrections.
2. Proceed with demolition only after unsatisfactory issues have been resolved. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Construction Manager that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.


3.3 DEMOLITION

A. Verification: Before proceeding to lay out the demolition work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Construction Manager and Architect promptly.

B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Construction Manager.

E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

3.4 FIELD ENGINEERING

A. Identification: Identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction.

B. Restore permanent facilities used during construction to their specified condition.

END OF SECTION 01700
SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary
      Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. This Section includes procedural requirements for cutting and patching.

1.3 DEFINITIONS
   A. Cutting: Removal of in-place construction adjacent to existing construction to remain.
   B. Patching: Fitting and repair work required to restore surfaces to original conditions after
      installation of other Work.

1.4 SUBMITTALS
   A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days
      before the time cutting and patching will be performed, requesting Construction Manager's
      approval to proceed. Include the following information:

      1. Extent: Describe cutting and patching, show how they will be performed, and indicate
         why they cannot be avoided.
      2. Changes to In-Place Construction: Describe anticipated results. Include changes to
         structural elements and operating components as well as changes in building's
         appearance and other significant visual elements.
      3. Products: List products to be used and firms or entities that will perform the Work.
      4. Dates: Indicate when cutting and patching will be performed.
      5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting
         and patching procedures will disturb or affect. List services/systems that will be relocated
         and those that will be temporarily out of service. Indicate how long services/systems will
         be disrupted.
      6. Construction Manager's Approval: Obtain approval of cutting and patching proposal
         before cutting and patching. Approval does not waive right to later require removal and
         replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE
   A. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved
      in cutting and patching, including mechanical and electrical trades. Review areas of potential
interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731
SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Final cleaning.

B. Related Sections include the following:

1. "General Conditions" for requirements for Applications for Payment for Substantial and Final Completion.
2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
3. Division 1 Section "Project Record Documents" for submitting Record Drawings.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Construction Manager will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's
list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to "General Conditions."
   2. Submit certified copy of Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.

1. Include the following information at the top of each page:
   a. Project name.
   b. Date.
   c. Name of Architect and Construction Manager.
   d. Name of Contractor.
   e. Page number.
PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 FINAL SITE CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

   d. Remove tools, construction equipment, machinery, and surplus material from Project site.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770
SECTION 01781 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary
Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record
Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. Related Sections include the following:

1. Division 1 Section "Closeout Procedures" for general closeout procedures.
2. Divisions 2 through 16 Sections for specific requirements for Project Record Documents
of the Work in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up Record Prints.
   1) Electronic Media: CD-R.

B. Record Specifications: Submit one copy of Project's Specifications, including addenda and
contract modifications.

C. Record Product Data: Submit one copy of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals,
submit marked-up Product Data as an insert in manual instead of submittal as Record
Product Data.
PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations below first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Duct size and routing.
   i. Locations of concealed internal utilities.
   j. Changes made by Change Order or Construction Change Directive.
   k. Changes made following District’s and/or Architect's written orders.
   l. Details not on the original Contract Drawings.
   m. Field records for variable and concealed conditions.
   n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings, whichever is most capable of showing actual physical conditions, completely and accurately.
4. Mark record sets with revisions in red. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect and Construction Manager. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to Architect through Construction Manager for resolution.
3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.

4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor’s print shop.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.

5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer’s written instructions for installation.

3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

1. Construction Manager to review on a regular basis.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Construction Manager's reference during normal working hours.

END OF SECTION 01781
SECTION 02210 - FINISH GRADING

1.00 GENERAL

1.01 SECTION INCLUDES

A. Furnish all labor, materials, equipment, appliances and necessary incidentals for the finish grading as shown on the drawings and as specified herein.

1. Preliminary Grading: Grades in all planting areas will be established to within +/- 1/10 foot by others prior to beginning of landscape construction.

2. Weeding: Before and during finish grading, all weeds and grasses shall be dug out by the root and disposed of off the site.

3. Finish Grading: Finish grading shall consist of finishing surfaces by raking smoothly and evenly, removing and disposal of all extraneous matter to facilitate natural run-off water. All extraneous matter shall be disposed of off the site.

4. Moisture Content: The soil shall not be worked when the moisture content is so great that excessive compaction will occur; nor when it is so dry that a dust will form in the air or that clods will not break readily. Water shall be applied, if necessary, to provide ideal moisture content for tilling and for planting herein specified.

1.02 JOB CONDITIONS

A. Verification of existing conditions

1. Visit the site to determine existing conditions, including access to the site and the nature and extent of existing improvements upon adjacent public and private property, nature of materials to be encountered and other factors that may affect the work of this section.

2. Additional compensation resulting from the alleged ignorance of local conditions, and their effect upon the cost of the work will not subsequently be approved.

B. Protection:

1. Protect the Owner's property from injury or loss. All damage to existing property to remain (buildings, utilities, etc.) or planting (trees, shrubs, lawn or ground cover) caused by the Contractor during his operation or as a result of malfunction of installed work during the warranty period shall be repaired at contractor's expense.

2. Cause minimum interference with workers, materials, or other equipment of other trades on the project.

2.00 PRODUCTS

NO MATERIALS ARE REQUIRED OF THIS SECTION.
3.00 Execution

3.01 Surface Condition

A. Observation

1. Prior to commencing work required by this section, observe the work of other trades and verify that such work has been properly completed and installed to allow for proper installation of all materials and methods required of this section.

2. All finish grading shall be installed in accordance with the requirements of all governing authorities, the original design, and the referenced standards.

3.02 Performance

A. Finish Grading

1. General: When preliminary grading and weeding has been completed and the soil has dried sufficiently to be readily worked, all lawn and planting areas shall be graded to the elevations indicated on the drawings. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given. Minor adjustments of finish grades shall be made at the direction of the Architect or Civil Engineer if required. Finish grade shall be smooth, even, and uniform plane with no abrupt change of surface. Soil areas adjacent to building shall slope away from the buildings to allow a natural run-off of water, and surface drainage shall be directed as indicated on the drawings by remodeling surfaces to facilitate the natural run-off water. Low spots and pockets shall be graded to drain properly.

2. Drainage: Contractor is to finish grade with proper slope to drains. All flow lines, designated or not, shall be graded and maintained to allow free flow of surface water, and shall conform to the intent of all plans and sections after thorough settlement and compactment of the soil.

B. Observations

1. Observations herein specified shall be made by the Civil Engineer. Request observations at least twenty-four hours in advance of the time observation is desired. Observation is required as follows:

a. When finish grading is completed.

2. No observations will commence without an as-built drawing. In the event the Contractor calls for an observation without as-built drawings, without completing previously noted corrections, or without preparing the work for observation, he shall be responsible for reimbursing the Architect at the rate of two and one-half times the normal office hourly rate per hour portal to portal (plus transportation costs) for the inconvenience. No further observation will be scheduled until this charge has been paid.
SECTION 02221 - BUILDING DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of buildings and structures.
2. Demolition and removal of site improvements adjacent to a building or structure to be demolished.
3. Disconnecting, capping or sealing, and removing site utilities.

B. Related Sections include the following:

1. "General Conditions" for use of the premises and phasing requirements.
2. Division 2 Section "Building Demolition" for demolition of buildings, structures, and site improvements.
3. Division 2 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements not part of building demolition.
4. HAZARDOUS MATERIALS AND DEMOLITION PROJECT SPECIFICATIONS, as prepared by District Environmental Consultant, H2 Environmental Consulting Services, Inc.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or recycled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or recycled.

1.4 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be encountered during building demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
1.5 SUBMITTALS

A. Schedule of Building Demolition Activities: Indicate the following:
   1. Detailed sequence of demolition and removal work, with starting and ending dates for each activity.
   2. Interruption of utility services.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Locations of temporary protection.
   5. Coordination of Owner's continuing occupancy of adjacent buildings and partial use of premises.

B. Inventory: After building demolition is complete, submit a list of items that have been removed and salvaged.

C. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements. Submit before Work begins.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of Work.

B. Owner and other property owners will occupy another building immediately adjacent to project site/demolition area. Conduct building demolition so Owner's and other property owners' operations will not be disrupted.
1. Provide not less than fourteen (14) days notice to Owner of activities that will affect Owner's operations.
2. Maintain access to existing walkways, exits, and other adjacent occupied or used facilities.
   a. Do not close or obstruct walkways, exits, or other occupied or used facilities without written permission from authorities having jurisdiction.

C. Owner assumes no responsibility for buildings and structures to be demolished.

D. Storage or sale of removed items or materials on-site is not permitted.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soils: Comply with requirements in Division 2 Section "Earthwork."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of building demolition required.

B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are the same as those indicated in Project Record Documents.

C. When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to Construction Manager and Architect.

3.2 PREPARATION

A. Refrigerant: Remove and store refrigerant according to 40 CFR 82 and regulations of authorities having jurisdiction.

B. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
   1. Construction Manager will arrange to shut off indicated utilities when requested in writing by Contractor, a minimum of fourteen (14) days, prior.
   2. Arrange to shut off indicated utilities with utility companies.
3. If utility services are required to be removed, relocated, or abandoned, before proceeding with building demolition provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.

4. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

C. Existing Utilities: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

1. Remove and recycle refrigerant from air-conditioning equipment before starting demolition.

D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of demolition.

E. Removed and Salvaged Items: Comply with the following:

1. Clean salvaged items of dirt and demolition debris.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site designated by Owner.
5. Protect items from damage during transport and storage.

3.3 PROTECTION

A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations.

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during demolition and cleaned and reinstalled in their original locations after demolition operations are complete.

C. Existing Utilities: Maintain utility services indicated to remain and protect them against damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.

1. Protect existing site improvements, appurtenances, and landscaping to remain.
2. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
4. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
5. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
6. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise from occupied portions of adjacent buildings.

3.4 DEMOLITION, GENERAL

A. General: Demolish indicated existing buildings and structures and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
2. Maintain adequate ventilation when using cutting torches.
3. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Engineering Surveys: Engage a professional engineer to survey unknown conditions of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

1. Subsidence monitoring of the remaining building structure as demolition proceeds, shall be monitored / performed by a registered surveyor on a weekly basis.

C. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

1. Surveys of the remaining building structure as demolition proceeds, shall be performed by a registered surveyor on a weekly basis.

D. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

3.5 DEMOLITION

A. Remove buildings and structures and site improvements intact when permitted by authorities having jurisdiction.
B. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

C. Remove debris from elevated portions by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
   1. Remove structural framing members and lower to ground by method suitable to minimize ground impact or dust generation.

D. Concrete: Cut concrete full depth at junctures with construction indicated to remain, using power-driven saw, then remove concrete between saw cuts.

E. Masonry: Cut masonry at junctures with construction indicated to remain, using power-driven saw, then remove masonry between saw cuts.

F. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished at junctures with construction indicated to remain, then break up and remove.

G. Basements: Existing concrete foundations and slabs-on-grade will remain.
   1. Existing basements shall be filled with engineered fill.
      a. Fill to be compacted to requirements indicated in section 02300 Earthwork.
      b. Existing basement, vault, cellar, planter, or other below grade floor slabs, the contractor shall core-drill to allow for drainage per the following:
         1) Provide one (1) 4-inch diameter drainage core per each 25 square feet of floor, typical.

H. Structural Steel: Dismantle field connections without bending or damaging steel members. Do not use flame-cutting torches unless otherwise authorized by Construction Manager and authorities having jurisdiction.

I. Below-Grade Construction:
   1. Cut at-grade construction (foundation walls, etc.) flush with grade.
      a. Cuts to be neat and level.
      b. Cut rebar, steel, etc. flush with top of wall or slab.
      c. Remove sharp edges or dangerous conditions from remaining building elements.
      d. Abandon remainder of foundation walls below cut line.
   2. For foundation walls at slab-on-grade conditions, cut wall flush with top of slab-on-grade.
      a. Cuts to be neat and level.
      b. Cut rebar, steel, etc. flush with top of wall / slab.
      c. Remove sharp edges or dangerous conditions from remaining building elements.
      d. Abandon remainder of foundation walls below cut line.

J. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.
   1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

3.6 EXPLOSIVE DEMOLITION
   A. Explosives: Use of explosives is not permitted.

3.7 SITE RESTORATION
   A. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.
   B. Provide new landscaping and irrigation per Drawings.

3.8 REPAIRS
   A. General: Promptly repair damage to adjacent construction caused by building demolition operations.
   B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
   C. Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.9 DISPOSAL OF DEMOLISHED MATERIALS
   A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner’s property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
      1. Do not allow demolished materials to accumulate on-site.
      2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   B. Burning: Do not burn demolished materials.

3.10 CLEANING
   A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 02221
SECTION 02230 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. This Section includes the following:
      1. Removing existing landscaping (trees and shrubs).
      2. Clearing and grubbing.
      3. Removing above-and below-grade site improvements.
      4. Disconnecting, capping or sealing, and abandoning site utilities in place.
      5. Temporary erosion and sedimentation control measures.
   B. Related Sections include the following:
      1. "General Conditions" for temporary utilities, temporary construction and support facilities, temporary security and protection facilities.
      2. Division 2 Section "Building Demolition" for partial demolition of buildings or structures undergoing alterations.
      3. Division 2 Section "Earthwork" for soil materials, excavating, backfilling, and site grading.

1.3 DEFINITIONS
   A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.
   B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.4 MATERIAL OWNERSHIP
   A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.
1.5 SUBMITTALS

A. Schedule of Building Demolition Activities: Indicate the following:
   1. Detailed sequence of demolition and removal work, with starting and ending dates for each activity.
   2. Interruption of utility services.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Locations of temporary protection.
   5. Coordination of Owner's continuing occupancy of adjacent buildings and partial use of premises.

B. Inventory: After building demolition is complete, submit a list of items that have been removed and salvaged.

C. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements. Submit before Work begins.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of Work.

B. Owner and other property owners will occupy another building immediately adjacent to project site/demolition area. Conduct building demolition so Owner's and other property owners' operations will not be disrupted.
1.5 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

B. Record drawings; according to Division 1 Section “Project Record Documents,” identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section “Project Management and Coordination.”

1.7 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

   2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 2 Section “Earthwork.”

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly flag trees and vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.

   1. Restore damaged improvements to their original condition, as acceptable to Owner.
3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction and the specific to the site, that complies with requirements of authorities having jurisdiction, whichever is more stringent.

B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 PROTECTION

A. Protect utilities that are designated to remain from damage.

B. Protect trees, plant growth and features designated to remain as final landscaping.

C. Protect bench marks and designated existing structures from damage or displacement.

D. Erect barricades in accordance with Title 8, Subchapter 4, Construction Safety Orders, California Code of Regulations.

E. Protect existing items not indicated to be altered.

3.4 UTILITIES

A. District’s Construction Manager will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.

   1. Verify that utilities have been disconnected and capped before proceeding with site clearing.

B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

   1. Arrange with utility companies to shut off indicated utilities.
   2. District’s Construction Manager will arrange to shut off indicated utilities when requested by Contractor.

C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

   1. Notify District’s Construction Manager not less than 72 hours in advance of proposed utility interruptions.

D. Excavate for and remove underground utilities indicated to be removed.
3.5 CLEARING

A. Clear areas required for access to site and execution of Work.

B. Contractor shall remove all trees and shrubs on project site, unless noted otherwise.
   1. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
   2. Chip removed tree branches and dispose of off-site.

C. Verify that existing plant life and features designated to remain are tagged or identified.

D. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
   1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

E. Keep site free of dust by sprinkling with water. Maintain adequate water trucks, hoses and water supply.

3.6 SITE DEMOLITION

A. Contractor shall remove existing above and below grade construction/items as indicated.

B. Remove paving, curbs, foundations and surface improvements. Patch and repair surfaces not indicated to be removed.

C. Keep site free of dust by sprinkling with water. Maintain adequate water trucks, hoses and water supply.

D. In addition, the following represents a list of typical, but not comprehensive list of miscellaneous items that the contractor shall remove from the site, in addition to the site, buildings and/or specific items indicated in Contract Documents. The contractor shall survey the site and include the removal of these typical items in the Bid:
   1. Basketball backstops
   2. Volleyball net poles
   3. Chinning bars
   4. Bicycle racks
   5. Light posts
   6. Plinths
   7. Hydrants
   8. Brick and CMU walls and enclosures
   9. Exposed Rebar
   10. Grounding stakes
   11. Loose bricks, rocks, concrete blocks, etc. (larger than fist-sized)
   12. Dumpsters
   13. Trash receptacles and barrels
   14. Wooden posts
   15. Some chain-link fencing
   16. Electrical transformers, controls, etc. (inactive)
17. Site Furniture

3.7 CONSTRUCTION EROSION AND SEDIMENTATION CONTROL

A. Provide site sediment and erosion control plan that follows best management practices outlined by State Water Resources Control Board (WRCB) to comply with Stormwater Construction Activities General Permit. The plan shall meet the following objectives:
   1. Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
   2. Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.

3.8 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 02230
SECTION 02300 - EARTHWORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Earth preparation outside building areas.

1.02 REFERENCES

A. ASTM D 1557 Laboratory compaction characteristics of soil using modified effort.

1.03 SUBMITTALS

A. Compaction Report indicating requirements per ASTM D1556.

B. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.04 GENERAL REQUIREMENTS

A. Existing Conditions: Contractor shall examine site of Work and verify existing conditions under which work will be performed, including subsurface conditions.

B. Drainage and Pumping: Maintain excavations and site free from water throughout work. Run surface water or seepage to sumps with float-switch controlled pumps. Pump to drainage system as approved by Architect.

C. Protection: Provide and maintain protection to retain earthbanks and protect adjoining existing monuments, grades and structures from caving, sliding, erosions or other damage and suitable forms of protection against bodily injury or property damage.

D. Bulkheads and shoring shall conform to Occupational Safety and Health Act Construction Safety Orders, Title 8, Industrial Relations, California Code of Regulations.

E. Provide barricades and berms at top of slopes to prevent water from flowing over top.

F. Borrow. Fill, backfill, aggregate base, and other soil materials obtained from off-site sources shall be sampled and tested in compliance with California EPA Department of Toxic Substances Control recommendations to prevent the importation of contaminated materials to the Site.

1. Testing Frequency

a. For borrow up to 1,000-cu.yd, conduct 1 test for each 250-cu.yds.

b. For borrow between 1,001- and 5,000-cu.yd; conduct 4 tests for first 1,000-cu.yd., if material tests acceptable, conduct 1 test for each additional 500-cu.yds.

c. For borrow over 5,000-cu.yds, conduct 12 tests during import of first 5,000-cu.yd, if material tests acceptable, conduct 1 test for each additional 1,000-cu.yds.

2. Owner’s Testing Laboratory shall take samples at source, conduct testing and evaluate test results prior to delivery.
3. Conduct tests for lead and other heavy metals, asbestos, PCB’s, pesticides, herbicides, VOCs, and semi-VOCs.

4. When detectable quantities of hazardous materials are found, determine the risk to human health, the environment, or both using the DTSC Preliminary Endangerment Assessment Guidance Manual.

5. Do not import soils, that exhibit a known risk to human health, the environment, or both.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Excavated material, Imported Fill and Backfill: As specified in Section 31 23 23 and as approved by District’s Geotechnical Engineer or Inspector prior to placement on site.

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION INSPECTION

A. Inspection of Site: Inspect entire site prior to commencing work and determine character of materials to be encountered and all conditions affecting Work.

B. Existing Site Conditions: Verify location of existing underground structures and facilities and take adequate precautions to avoid damage to any active service or structure.

C. Repair or replace property damaged by Work of this Section immediately.

D. Piping and conduit encountered shall be adequately supported and protected until permanent support is provided or removal of same is approved by Architect.

E. Support and protect existing pipes and conduits where required during construction.

F. Site Clearing: Conform to Section 02230.

G. Loose fill and natural on-site soils that are approved by District’s Geotechnical Engineer or Inspector may be stock-piled and used as fill material.

H. After clearing and removal of loose fill, exposed surfaces shall be inspected and approved by District’s Geotechnical Engineer or Inspector prior to placing fill.

3.02 SITE PREPARATION

A. Building areas shall be those areas indicated on grading plan that includes building area and distance of 5 feet minimum beyond footing lines, including covered walks. Excavation for building areas shall be as specified in Section 31 23 16.

B. Over-excavate and remove loose existing soils to depth of required by the Geotechnical Investigation Report or 3 feet below existing grade.

C. Scarify or blade mix exposed soil to depth of 6 inches below exposed grade.
D. District’s Geotechnical Engineer or Inspector shall inspect scarified areas.

E. After approval has been received from District’s Geotechnical Engineer or Inspector to proceed, bring soil mix to optimum moisture content and re-compact to 90 percent of maximum dry density per ASTM D 1557. Geotechnical Engineer shall test and approve results.

F. Bring grade to subgrades indicated or to accommodate conditions in 8 inches maximum loose lifts. Compact to 90 percent of maximum dry density per ASTM D1557.

G. No jetting or flooding permitted.

3.03 INSPECTION

A. Grading operations shall be inspected by District’s Geotechnical Engineer or Inspector. No fill shall be placed on any prepared surface until that surface has been inspected and approved by District’s Geotechnical Engineer or Inspector.

B. Completed earthwork including cuts, fills, and earth bank slopes (cut or fill) shall be inspected by District’s Geotechnical Engineer or Inspector to determine suitability of exposed soils.

3.04 SEASONAL LIMITS

A. No fill material shall be placed, spread or rolled while it is frozen or thawing or during unfavorable weather conditions. When Work is interrupted by heavy rain, fill operations shall not be resumed until field tests by District’s Geotechnical Engineer or Inspector indicate that moisture content and density of fill are as previously specified.

3.05 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:

   a. 24 inches outside of concrete forms other than at footings.
   b. 12 inches outside of concrete forms at footings.
   c. 6 inches outside of minimum required dimensions of concrete cast against grade.
   d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
   e. 6 inches beneath bottom of concrete slabs on grade.
   f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.
3.06 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
   1. With existing basement areas, compact engineered fill material at 95 percent.
   2. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
   3. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
   4. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
   5. For utility trenches, compact each layer of initial and final backfill soil material at 90 percent.

3.07 EARTH BANK SLOPES

A. Earth banks shall be sloped to 2 (horizontal) to 1 (vertical). Tops of banks shall be bermed to prevent surfaces water from running off over cut banks. Tops of earth banks shall be level to distance of 5 feet minimum from existing structures and 5 feet minimum behind construction barricades adjacent to driveways.

3.08 TOLERANCES

A. Perform rough grading to grades indicated, plus or minus 0.1 foot. Where grades are not indicated, grade uniformly level or slope between points for which elevations are given or from such points to existing grades with due allowance for adequate drainage and subsequent materials.

B. Grading at Asphaltic Concrete Areas: Rough grade soil to elevation to conform to specified depth of base and pavement.

C. Place necessary fill to bring sub-grade to proper elevations. Fill shall be placed as Compacted Fill.

3.09 STOCKPILING OF FILL MATERIAL

A. Fill: Soil removed that is suitable for fill shall be stockpiled separately on site.

B. Stockpile Locations: Materials shall be stockpiled in locations approved by Architect and convenient for future placing, causing least disturbance to site and away from areas of actual building construction.
3.010 FIELD QUALITY CONTROL

A. Testing and Inspection: Owner will engage a qualified independent Geotechnical Engineer or Testing Laboratory to perform field quality-control testing and inspections.

B. When testing agency reports that sub-grades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; re-compact and retest until specified compaction is obtained.

3.011 DISPOSAL OF EXCESS MATERIAL

A. Legally dispose off excess materials. Disposal shall be in areas off Owner's property, unless otherwise approved by Owner.

END OF SECTION
Hazardous Materials Project Specifications

South Orange County Community College District
*Advanced Technology & Education Park (ATEP)*
*Phase #5B, Buildings 524*
*15445 Lansdowne Rd., Tustin, CA 92782*

Prepared By:
H2 Environmental Consulting Services, Inc.
800-524-3578
DIVISION 1 - GENERAL REQUIREMENTS

01013 Summary of Work - Asbestos Abatement
01043 Project Coordination - Asbestos Abatement
01046 Cutting & Patching - Asbestos-Containing Materials
01091 Definitions and Standards - Asbestos Abatement
01092 Codes, Regulations, and Standards - Asbestos Abatement
01220 Project Meetings
01301 Submittals
01410 Air Monitoring - Test Laboratory Services
01503 Temporary Facilities - Asbestos Abatement
01513 Temporary Negative Pressure & Air Circulation System
01526 Temporary Enclosures
01560 Worker Protection - Asbestos Abatement
01562 Respiratory Protection
01563 Decontamination Units
01601 Materials and Equipment - Asbestos Abatement
01632 Product Substitutions - Asbestos Abatement
01701 Project Closeout - Asbestos Abatement
01711 Project Decontamination
01712 Cleaning & Decontamination Procedures
01714 Work Area Clearance

DIVISION 2 - SITE WORK

02081 Removal of Asbestos-Containing Materials
02084 Disposal of Asbestos-Containing Waste Material

DIVISION 3 - GENERAL REQUIREMENTS

03810 Inorganic Lead Specification
SECTION 01013

SUMMARY OF WORK-ASBESTOS ABATEMENT

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings, general provisions of Contract, including General and Supplementary Conditions, and other Division-1 Specification Sections, apply to work of this section.

1.2 PROJECT WORK IDENTIFICATION

1.2.1 General: Project name is, Advanced Technology & Education Park (ATEP), Phase #5B, Buildings 524 15445 Lansdowne Rd., Tustin, CA 92782 as shown on Contract Documents prepared by Owner's Representative, H2 Environmental Consulting Services, and Specifications are dated March 13th, 2010.

1.2.2 Contract Documents: Indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:

A. Applicable codes and regulations.
B. Notices and permits.
C. Existing site conditions and restrictions on use of the site.
D. Work performed prior to work under this Contract.
E. Alterations and coordination with existing work.
F. Work to be performed concurrently by the Owner.
G. Work to be performed concurrently by separate contractors.
H. Work to be performed subsequent to work under this Contract.
I. Requirements for partial Owner occupancy prior to substantial completion of the Contract Work.

1.2.3 Abbreviated Written Summary: Briefly and without force and effect upon the contract documents, the work of the Contract can be summarized as follows:

A. The work includes the removal of asbestos-containing materials according to the requirements of the following specification sections in the sequence indicated:

<table>
<thead>
<tr>
<th>Asbestos Containing Material</th>
<th>Location</th>
<th>Quantity*</th>
<th>Section Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof Mastic</td>
<td>Throughout Roof</td>
<td>300 SF</td>
<td>02081</td>
</tr>
<tr>
<td>Black Window Sealent</td>
<td>Ext. of Building</td>
<td>1,600 SF</td>
<td>02081</td>
</tr>
<tr>
<td>Black Floor Mastic</td>
<td>Throughout Building</td>
<td>16,000 SF</td>
<td>02081</td>
</tr>
<tr>
<td>12&quot;x12&quot; Floor Tile Associated With ACM Black Floor Mastic</td>
<td>Throughout Building</td>
<td>16,000 SF</td>
<td>02081</td>
</tr>
</tbody>
</table>

South Orange County Community College District, ATEP 15445 Lansdowne Rd., Tustin, CA, Building #524

<table>
<thead>
<tr>
<th>Asbestos Containing Material</th>
<th>Location</th>
<th>Quantity*</th>
<th>Section Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buried Transite Pipe</td>
<td>Throughout Property Lot</td>
<td>Unknown</td>
<td>02081</td>
</tr>
</tbody>
</table>

South Orange County Community College District, ATEP 15445 Lansdowne Rd., Tustin, CA, Building Property Lot

South Orange County Community College District Remediation Specifications H2 Environmental Consulting Services Summary of Work-Asbestos Abatement 01013 - 2
SECTION 01013

SUMMARY OF WORK-ASBESTOS ABATEMENT

* Quantities are approximate it is the contractor’s responsibility to verify these quantities prior to submitting a proposal.

1.1.1 Demolish Existing Buildings And Structures
A. Remove existing buildings and structures from site to the level of the existing concrete slabs.
B. Do not remove concrete foundations or floor slabs.
C. Seal all holes in slabs including basements with owner approved fill materials. Basements to be filled with certified clean fill soil.
D. Remove all equipment from site within Phasing area including the light standards, transformers, bollards, parking blocks (leaving asphalt intact)
E. Remove all trees, vegetation in the phasing area. Trees that are to be saved will be pointed out during the project pre construction meeting. The intention of the project is to have a clean semi level site.
F. Remove recycle and dispose of all materials and debris.
G. Disconnect, cap and identify utilities. All utilities must be capped at the foundation of the structure to be demolished in a safe and approved manner.

OTHER HAZARDOUS MATERIALS

1.2.4 Recommendations For Removal And Disposal
1.2.4.1 H2 Environmental observed hazardous materials that may be impacted during the scheduled demolition activities. Those materials must be removed by a waste removal contractor under the guidelines as defined by Local, State, and Federal regulations prior to the start of demolition activities

These items include: PCB’s, Freon, Mercury Vapor Light Tubes and T-Stats, Stored Cleaning Chemicals and miscellaneous. other items.

1.2.5 General and Administrative Requirements: Are set forth in the following specification sections:
A. Summary of the Work - Asbestos Abatement
B. Project Coordination - Asbestos Abatement
C. Definitions and Standards - Asbestos Abatement
D. Submittals
E. Materials and Equipment - Asbestos Abatement
F. Product Substitutions
G. Project Closeout - Asbestos Abatement

1.2.6 Abatement Work: Requirements are set forth in the following specification sections, listed here according to the sequence of the work:
A. 01092 Codes, Regulations and Standards - Asbestos Abatement: sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to
SECTION 01013

SUMMARY OF WORK-ASBESTOS ABATEMENT

the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

B. 01503 Temporary Facilities - Asbestos Abatement: sets forth the support facilities needed such as electrical and plumbing connections for the decontamination unit and office space for the Project Administrator.

C. 01526 Temporary Enclosures: details the requirements for the sheet plastic barriers isolating the work area from the balance of the building.

D. 01410 Test Laboratory Services: describes air monitoring by Owner so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.

E. 01563 Decontamination Units: explains the setup and operation of the personnel and material decontamination units.

F. 01513 Negative Pressure System: sets forth the procedures to set up pressure differential isolation and ventilation of the work area.

G. 01560 Worker Protection - Asbestos Abatement: describes the equipment and procedures for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

H. 01562 Respiratory Protection: sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.

1.2.7 Asbestos Removal Work Procedures: Are described in the following specification sections:

A. 01046 - Cutting and Patching - Asbestos-Containing Materials
B. 02063 - Demolition of Asbestos-Contaminated Materials
C. 02081 - Removal of Asbestos-Containing Materials
D. 02082 - Removal of Asbestos-Contaminated Soil
E. 02083 - Disposal of Asbestos Containing Waste Material
F. 02084 - Removal of Interior Non-Friable Asbestos-Containing Materials

1.2.8 Decontamination of the Work Area: After completion of abatement work is described in the following sections:

A. 01712 Cleaning and Decontamination Procedures: sets forth procedures to be used on contaminated objects and rooms which are not part of an abatement work area.

B. 01711 Project Decontamination: describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.

C. 01714 Work Area Clearance: describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.
SECTION 01013
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D. 01701 Project Closeout: details the closeout procedures to end the project once abatement work is complete including final paperwork requirements.

1.3 PLAN OF ACTION

1.3.1 At pre-construction conference, submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. The plan must be approved by the Owner's Representative prior to commencement of work.

1.4 INSPECTION

1.4.1 Prior to commencement of work: Inspect areas in which work will be performed. Prepare a listing of damage to structure, surfaces and finishes, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

1.5 POTENTIAL ASBESTOS HAZARD

1.5.1 The disturbance or dislocation of asbestos-containing materials may cause asbestos fibers to be released into the building’s atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

1.5.2 Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos-containing materials, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state, and local agencies.

1.6 STOP WORK

1.6.1 If the Owner or the Project Administrator presents a written stop work order immediately and automatically stop all work. Do not recommence work until authorized in writing by Owner's Representative.

1.7 CONTRACTOR USE OF PREMISES

1.7.1 General: The Contractor shall limit his use of the premises to the work and area indicated, so as to allow for Owner occupancy and use by the public.
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1.7.2 Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.

A. Keep existing driveways and entrances serving the premises clear and available to the Owner and his employees at all times. Do not use these areas for parking or storage of materials.

B. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary obtain and pay for such storage off site.

C. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

1.7.3 Contractor's Use of the Existing Building: Maintain existing building in a safe and weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

A. Keep public areas such as hallways, stairs, elevator lobbies and toilet rooms free from accumulation of waste, rubbish or construction debris.

B. Smoking or open fires will not be permitted within the building enclosure or on the premises.

C. Except for Toilet Rooms designated by Owner at Pre Construction Meeting use of existing toilets within the building, by the Contractor and his personnel, will not be permitted.
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1.8 OWNER OCCUPANCY

1.8.1 Full Owner Occupancy: The Owner will occupy the site and the existing building during the entire period of construction. Cooperate fully with the Owner or his representative during construction operations to minimize conflicts and to facilitate Owner usage. Perform the work so as not to interfere with the Owner's operation.

1.9 SUBMITTALS FOR SUMMARY OF WORK

1.9.1 Before the Start of Work: Submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1.9.2 Plan of Action: Submit as a written report in the same manner as product data.

1.9.3 Inspection: Report on inspection carried out as required by this section. Include copies of all photographs, video tapes, etc. Submit in the same manner as product data.

2 PART 2 - PRODUCTS (Not Applicable)

3 PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01013
SECTION 01043

PROJECT COORDINATION-ASBESTOS ABATMENT

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY

1.2.1 This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

A. Administrative and supervisory personnel
B. Progress Meetings
C. Pre-Construction Conference
D. Daily Log
E. Special Reports
F. Contingency Plans
G. Notifications to other entities at job site

1.2.2 Requirements for the Contractor's Construction Schedule are included in Section 1301 "Submittals".

1.3 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

1.3.1 General Superintendent: Provide a full-time General Superintendent who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Contractors Representative responsible for compliance with all applicable federal, state and local laws and regulations, particularly those relating to asbestos-containing materials.

1.3.2 Experience and Accreditation: The General Superintendent is to be accredited as an Asbestos Abatement Supervisor in accordance with the AHERA regulation 40 CFR 763, Subpart E, Appendix C, and have had a minimum of two (2) years on-the-job training in asbestos abatement procedures.

1.3.3 Competent Person: The General Superintendent is to be a Competent Person as required by OSHA in 29 CFR 1926.1101. The superintendent must be present at all times when response actions are being performed. In the absence of the superintendent, the Contractor shall designate a similarly qualified individual who will perform all required project superintendent duties. The project superintendent shall remain until the project is complete; if removed from the job, contractor shall notify Owner immediately.

1.4 PROGRESS MEETINGS

1.4.1 General: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, Owner's Representative will hold general progress meetings as required. These
meetings will be scheduled, where possible, at time of preparation of payment request. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting.

1.5 PRE-CONSTRUCTION CONFERENCE

1.5.1 An initial progress meeting, recognized as "Pre-Construction Conference" will be convened by the Owner's Representative prior to start of any work. Meet at project site, or as otherwise directed with General Superintendent, Owner, Owner's Representative, Project Administrator, and other entities concerned with the asbestos abatement work.

1.5.2 72 hours advance notice will be provided to all participants prior to convening Pre-Construction Conference.

1.5.3 This is an organizational meeting, to review responsibilities and personnel assignments and to locate the containment and decontamination areas and temporary facilities including power, light, water, etc.

1.6 DAILY LOG

1.6.1 Daily Log: Maintain within Clean Room of the Decontamination Unit a daily log documenting the dates and time of but not limited to, the following items:

1.6.2 Meetings; purpose, attendees, brief discussion.

1.6.3 Visitations; authorized and unauthorized.

1.6.4 Personnel; by name, entering and leaving the work area.

1.6.5 Special or unusual events, i.e., barrier breaching, equipment failures, accidents.

1.6.6 Air monitoring tests and test results

1.6.7 Documentation of Contractor's completion of the following:

A. Inspection of work area preparation prior to start of removal and daily thereafter

B. Removal of any sheet plastic barriers

C. Contractor's inspections prior to spray back, lock back, encapsulation, enclosure or any other operation that will conceal the condition of asbestos-containing materials or the substrate from which such materials have been removed

D. Removal of waste materials from work area

E. Decontamination of equipment (list items)

F. Contractor's final inspection/final air test analysis.

1.6.8 Provide two (2) copies of this log to Project Administrator on a daily basis.
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1.6.9 Submit copies of this log at final closeout of project as a project close-out submittal.

1.7 SPECIAL REPORTS

1.7.1 General: Except as otherwise indicated, submit Special Reports directly to Owner within one day of occurrence requiring Special Report, with copy to Owner's Representative and others affected by occurrence. This requirement is separate from any change order procedures. Compliance with change order procedures is required regardless of any reports proposed pursuant to this section.

1.7.2 Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a Special Report listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.

1.7.3 Reporting Accidents: Prepare and submit Special Reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.7.4 Report Discovered Conditions:
   A. When an unusual condition of the building is discovered during the work (e.g. leaks, termites, corrosion) prepare and submit a Special Report indicating condition discovered.
   B. Where suspect asbestos-containing materials not otherwise described in the specifications are discovered, prepare, and submit a Special Report.

1.8 CONTINGENCY PLAN

1.8.1 Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative pressure system failure, supplied air system failure, or any other event that may require modification or abridgement of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.

1.8.2 Post: in clean room of Personnel Decontamination Unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, Telephone Company.

1.9 NOTIFICATIONS

1.9.1 Notify other entities at the job site in compliance with 29 CFR 1926.1101 of the nature of the asbestos abatement activities, of the existence of and requirements pertaining to regulated areas, of the measures taken to ensure that these entities are not exposed to asbestos, and any other requirements relative to asbestos set forth in these specifications and applicable regulations.
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1.9.2 Notify emergency service agencies including fire, ambulance, police or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, modifications to fire notification or fire fighting equipment, and other information needed by agencies providing emergency services.

1.9.3 Notifications of Emergency: Any individual at the job site may notify emergency service agencies if necessary without effect on this Contract or the Contract Sum.

1.10 SUBMITTALS RELATIVE TO PROJECT COORDINATION

1.10.1 Before the Start of Work: Submit the following to the Owner's Representative for review. No work shall begin until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1.10.2 Contingency Plans: for emergency actions.

1.10.3 Telephone Numbers: and location of emergency services.

1.10.4 Notifications: sent to other entities at the work site.

1.10.5 Notifications: sent to emergency service agencies.

1.10.6 Resume: of General Superintendent.

1.10.7 Accreditation: submit evidence in form of training course certificate of accreditation of General Superintendent as an asbestos abatement supervisor.

1.10.8 Staff Names: Within 5 days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list addresses and telephone numbers of key personnel.

2 PART 2 - PRODUCTS (Not Applicable)

3 PART 3 - EXECUTION (Non-Applicable)

END OF SECTION - 01043
SECTION 01046
CUTTING & PATCHING-ASBESTOS-CONTAINING MATERIALS

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.

1.2 SUBMITTALS

1.2.1 Before the Start of Work: Submit the following to the Owner's Representative for review. Begin no work until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1.2.2 Tools: Equipped with HEPA vacuum dust collection attachments.

2 PART 2 - PRODUCTS

2.1.1 Provide local exhaust ventilation systems that comply with ANSI 29.2-1971.

3 PART 3 - EXECUTION

3.1.1 Before beginning work of this section, comply with:

A. Section 01503 - Temporary Facilities - Asbestos Abatement
B. Section 01513 - Negative Pressure and Air Circulation System
C. Section 01526 - Temporary Enclosures
D. Section 01560 - Worker Protection - Asbestos Abatement
E. Section 01562 - Respiratory Protection
F. Section 01563 - Decontamination Units

3.1.2 Perform cutting, drilling, abrading, or otherwise penetrating any asbestos-containing material in a manner that will minimize the dispersal of asbestos fibers into the air.

3.1.3 Provide adequate local exhaust to capture fibers produced by cutting, drilling, or abrading by means of an approved High Efficiency Particulate Absolute (HEPA) filter vacuum. Use specialized equipment such as drills or saws having integral ventilation hoods which are connected to a HEPA vacuum with a flexible hose. Handle and dispose of HEPA filters as contaminated material. See Section 02084.

3.1.4 Thoroughly saturate absorbent surfaces of asbestos-containing material to be penetrated with a penetrating type encapsulant. Allow encapsulant to penetrate to substrate before working on materials.

3.1.5 Seal edges of asbestos-containing material exposed by cutting, drilling, or abrading, etc. with two (2) coats of an approved penetrating encapsulant applied in accordance with manufacturers' printed instruction for use of the encapsulant as an asbestos coating.

END OF SECTION - 01046
SECTION 01091
DEFINITIONS AND STANDARDS-ASBESTOS ABATEMENT

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.) Certain terms used in Contract Documents are defined in this article.

1.3 DEFINITIONS

1.3.1 General: Definitions contained in this Article are not necessarily complete, but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents.

1.3.2 Indicated: This term refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

1.3.3 Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Owner's Representative", "requested by the "Owner's Representative", and similar phrases. However, no implied meaning shall be interpreted to extend the Owner's Representative's responsibility into the Contractor's area of construction supervision.

1.3.4 Approve: The term "approved," where used in conjunction with the Owner's Representative's action on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in General and Supplementary Conditions. Such approval shall not release the Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.

1.3.5 Regulation: The term "Regulations" includes laws, statutes, ordinances, patents, royalties and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work, whether they are lawfully imposed by authorities having jurisdiction or not.

1.3.6 Furnish: The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations."

1.3.7 Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying,
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working to dimension, finishing, curing, and protecting, cleaning and similar operations."

1.3.8 Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."

1.3.9 Installer: An "Installer" is an entity engaged by the Contractor, either as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1.3.10 Project Site is the space available to the Contractor for performance of the work, either exclusively or in conjunction with others performing other construction as part of the project.

1.3.11 Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, both at the project site or elsewhere, and to report on, and, if required, to interpret results of those inspections or tests.

1.3.12 Owner's Representative: This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during construction and until final payment is due. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.

1.3.13 Project Administrator: This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Project Administrator is a full time representative of the Owner at the job site with authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgment of the Project Administrator, Owner's Representative, Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work. The Project Administrator is different from the position of Owner's Representative as used in these documents, the latter having more limited authority in general and specifically not having authority to stop the work.

1.3.14 General Superintendent: This is the Contractor's Representative at the work site. This person will generally be the Competent Person required by OSHA in 29 CFR 1926.

1.4 DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT

1.4.1 Accredited or Accreditation: (when referring to a person or laboratory): A person or laboratory accredited in accordance with section 206 of Title II of the Toxic Substances Control Act (TSCA).

1.4.2 Aerosol: A system consisting of particles, solid or liquid, suspended in air.
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1.4.3 **Air Cell**: Insulation normally used on pipes and duct work that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractory binders.

1.4.4 **Air Monitoring**: The process of measuring the fiber content of a specific volume of air.

1.4.5 **Amended Water**: Water to which a surfactant has been added to increase the ability of the liquid to penetrate ACM.

1.4.6 **Asbestos**: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

1.4.7 **Asbestos-Containing Material (ACM)**: Any material containing more than one percent asbestos of any type or mixture of types.

1.4.8 **Asbestos-Containing Building Material (ACBM)**: Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.

1.4.9 **Asbestos-Containing Waste Material**: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.

1.4.10 **Asbestos debris**: Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

1.4.11 **Authorized Visitor**: The Owner, the Owner's Representative, testing lab personnel, the Architect/Engineer, emergency personnel or a representative of any federal, state and local regulatory or other agency having authority over the project.

1.4.12 **Barrier**: Any surface that seals off the work area to inhibit the movement of fibers.

1.4.13 **Breathing Zone**: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

1.4.14 **Ceiling Concentration**: The concentration of an airborne substance that shall not be exceeded.

1.4.15 **Certified Industrial Hygienist (C.I.H.)**: An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

1.4.16 **Class I Asbestos Work**: Activities involving the removal of TSI and surfacing ACM or PACM.

1.4.17 **Class II Asbestos Work**: Activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

1.4.18 **Competent Person**: One who meets the definition in 29 CFR 1926.32(f) and is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take
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prompt corrective measures to eliminate them, and is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan for project designer or supervisor.

1.4.19 Critical Barriers: One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

1.4.20 Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for decontamination of workers, materials and equipment that are contaminated with asbestos.

1.4.21 Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

1.4.22 Disposal Bag: A 6 mil thick leak-tight plastic bag, properly marked with the OSHA Asbestos DANGER legend, used for transporting asbestos waste from work and to disposal site.

1.4.23 Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

1.4.24 Bridging encapsulant: an encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

1.4.25 Penetrating encapsulant: an encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

1.4.26 Removal encapsulant: a penetrating encapsulant specifically designed to minimize fiber release during removal of asbestos-containing materials rather than for in situ encapsulation.

1.4.27 Encapsulation: Treatment of asbestos-containing materials, with an encapsulant.

1.4.28 Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

1.4.29 Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

1.4.30 Friable Asbestos Material: Material that contains asbestos and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

1.4.31 Glovebag: An impervious plastic bag-like enclosure affixed around ACM with glove-like appendages through which materials and tools may be handled.

1.4.32 HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in diameter.

1.4.33 HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.
1.4.34 **High-efficiency particulate air filter** (HEPA): refers to a filtering system capable of trapping and retaining 99.97 percent of all monodispersed particles 0.3 um in diameter or larger.

1.4.35 **Negative Pressure Respirator**: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

1.4.36 **Negative Initial Exposure Assessment**: A demonstration by the contractor which complies with the criteria specified in 29 CFR 1926.1101 that employee exposure during an operation is expected to be consistently below the PELs.

1.4.37 **Negative Pressure System**: A pressure differential and ventilation system, consisting of a local exhaust system, utilizing HEPA filtration capable of maintaining a pressure differential with the inside of the Work Area at a lower pressure than any adjacent area, and which cleans re-circulated air or generates a constant air flow from adjacent areas into the Work Area.

1.4.38 **Personal Monitoring**: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

1.4.39 **Permissible Exposure Limits (PELs)**: Not in excess of 0.1 f/cc airborne asbestos fiber concentration as a 8-hour time weighted average (TWA) or 1.0 f/cc over a sampling period of 30 minutes as measured by NIOSH method 7400.

1.4.40 **Presumed Asbestos-Containing Material (PACM)**: Thermal system insulation and surfacing material found in buildings constructed no later than 1980.

1.4.41 **Protection Factor**: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

1.4.42 **Repair**: Returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.

1.4.43 **Regulated Area**: An area established to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

1.4.44 **Respirator**: A device designed to protect the wearer from the inhalation of harmful atmospheres.

1.4.45 **Surfacing Material**: Material that is sprayed, troweled-on or otherwise applied to surfaces.

1.4.46 **Surfactant**: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

1.4.47 **Thermal System Insulation (TSI)**: ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.
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1.4.48 Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

1.4.49 Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

1.4.50 Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.

1.4.51 Work Area: The area where asbestos-related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

1.5 SPECIFICATION FORMAT AND CONTENT EXPLANATION

1.5.2 Specification Format: These Specifications are organized into Divisions, Sections or Trade Headings based on the Construction Specifications Institute's 16-Division format and the MASTERFORMAT numbering system. This organization conforms generally to recognized construction industry practice.

1.5.3 Specification Content: This Specification has been produced employing conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

A. Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.

B. Imperative language is used generally in the Specifications. Requirements expressed imperatively are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when so noted.

1.5.4 Assignment of Specialists: The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and the assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
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1.5.5 This requirement should not be interpreted to conflict with enforcement of building codes or regulations governing the work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

1.5.6 Trades: Use of titles such as “carpentry” is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter.” It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

1.6 INDUSTRY STANDARDS

1.6.1 Applicability of Standards: Except where Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the Project Site for reference.

1.6.2 Referenced industry standards take precedence over standards that are not referenced but recognized in the construction industry as applicable.

1.6.3 Unreferenced industry standards are not directly applicable to the work, except as a general requirement of whether the work complies with recognized construction industry standards.

1.6.4 Publication Dates: Where compliance with an industry standard is required, comply with standard in effect as of date of execution of the work.

1.6.5 Updated Standards: At the request of the Owner's Representative, Contractor may submit a Change Order proposal where applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. The Owner's Representative will decide whether to issue a Change Order to proceed with the updated standard.

1.6.6 Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Owner's Representative for a decision before proceeding.

1.6.7 Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, as appropriate for the context of the requirements. Refer instances of uncertainty to the Owner's Representative for decision before proceeding.

1.6.8 Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the Contract Documents.
SECTION 01091

DEFINITIONS AND STANDARDS-ASBESTOS ABATEMENT

A. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

B. Although copies of standards needed for enforcement of requirements may be part of required submittals, the Owner's Representative reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

1.6.9 Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the Specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

1.6.10 Trade Union Jurisdictions: Assign and subcontract construction activities, and employ tradesmen and laborers in a manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

1.7 SUBMITTALS REQUIRED BY STANDARDS

1.7.1 Permits, Licenses and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

2 PART 2 - PRODUCTS (Not Applicable)

3 PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01091
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY

1.2.1 This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

1.2.2 Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.

1.2.3 Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS

1.3.1 General Applicability of Codes and Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

1.3.2 Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

1.3.3 Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1.3.4 OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

- Asbestos
  - 29 CFR 1910.1001 and
  - 29 CFR 1926.1101
- Respiratory Protection
  - 29 CFR 134
Access to Employee Exposure and Medical Records
29 CFR 20

Hazard Communication
29 CFR 1910.1200

Specifications for Accident Prevention Signs and Tags
29 CFR 1910.145

1.3.5 **DOT**: U. S. Department of Transportation, including but not limited to:

- Hazardous Substances
  49 CFR 171 and 172

1.3.6 **EPA**: U. S. Environmental Protection Agency (EPA), including but not limited to:

- Asbestos Abatement Projects; Worker Protection Rule
  40 CFR 763, Sub-part G

- Asbestos Hazard Emergency Response Act (AHERA) Regulation
  Asbestos Containing Materials in Schools Final Rule & Notice
  40 CFR 763, Sub-part E

- Training Requirements of (AHERA) Regulation
  Asbestos Containing Materials in Schools Final Rule & Notice
  40 CFR 763, Sub-part E, Appendix C

- National Emission Standard for Hazardous Air Pollutants (NESHAP)
  National Emission Standard for Asbestos
  40 CFR 61, Sub-part A and M

1.3.7 **State Requirements**: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

- California Department of Industrial Relations, Division of Occupational Safety and Health

  - Title 8, Section 1529 Asbestos, Construction Safety Orders
  - Title 8, Section 341 Registration Requirements, Notification of Work Area
  - Title 8, Section 5156 Confined Space Entry
  - Title 8, Section 5194 Hazard Communication, "Prop. 65"
  - Title 22 Minimum Standards for Management of Hazardous Waste

1.3.8 **Local Requirements**: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

- South Coast Air Quality Management District

  - Rule 1403
  - Rule 206

1.4 **STANDARDS**
1.4.1 General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

1.4.2 Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the Owner and Owner’s Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his subcontractors.

1.4.3 Standards: Which apply to asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212)354-3300

Fundamentals Governing the Design and Operation of Local Exhaust Systems, Publication Z9.2-79

Practices for Respiratory Protection, Publication Z88.2-80

American Society for Testing and Materials (ASTM)
1916 Race Street
Philadelphia, PA 19103
(215)299-5400

Safety and Health Requirements Relating to Occupational Exposure to Asbestos, E 849-82

Standard Practice for Visual Inspection of Asbestos Abatement Projects, E 1368-90


1.5 EPA GUIDANCE DOCUMENTS

1.5.1 EPA Guidance Documents: Discuss asbestos abatement work or hauling and disposal of asbestos waste materials listed below for the Contractor's information only. These documents do not describe the work and are not a part of the work of this contract.

A. Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book) EPA 560/5-85-024

B. Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule. EPA 560/5-84-005.
SECTION 01092

CODES, REGULATIONS, AND STANDARDS-ASBESTOS ABATEMENT


F. A Guide to Respiratory Protection for the Asbestos Abatement Industry. EPA-560-OPTS-86-001

1.6 NOTICES

1.6.1 U.S. ENVIRONMENTAL PROTECTION AGENCY

A. Send Written Notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M) to the regional Asbestos NESHAP Contact at least 10 days prior to beginning any work on asbestos-containing materials. Send notification to the following address:

B. Notification: Complete the notification form provided in 40 CFR 61 and send to the NESHAP contact.

1.7 STATE AND LOCAL AGENCIES

1.7.1 NOTIFICATIONS: Send written notification as required by state and local regulations prior to beginning any work on asbestos-containing materials.

1.7.2 PERMITS AND LICENSES: Obtain and maintain current permits and licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.8 POSTING AND FILING OF REGULATIONS

1.8.1 Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain at least one (1) copy of applicable federal, state and local regulations and standard.

1.9 SUBMITTALS RELATED TO REGULATORY REQUIREMENTS

1.9.1 Before Start of Work: Submit the following to the Owner's Representative for review. No work shall begin until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1.9.2 Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work including:
SECTION 01092
CODES, REGULATIONS, AND STANDARDS-ASBESTOS ABATEMENT

A. Notices: Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.

B. Permits: Submit copies of current valid permits required by state and local regulations.

C. Licenses: Submit copies of all State and local licenses and permits necessary to carry out the work of this contract.

2 PART 2 - PRODUCTS (Not Applicable)

3 PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01092
SECTION 01220
PROJECT MEETINGS

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this Section.

1.2 DESCRIPTION

1.2.1 This section describes procedures for scheduling and administration of project progress meetings, including the preconstruction conference.

1.3 RELATED SECTIONS

1.3.1 Agreement between the Owner and Contractor
1.3.2 Section 01043 - Project coordination
1.3.3 Section 01301 - Submittals

1.4 PRECONSTRUCTION CONFERENCE

1.4.1 The Preconstruction Conference covers assignment of responsibilities and personnel, location of contained work areas and temporary facilities for electric and water services, etc.

1.4.2 The Preconstruction Conference will be held at a time and place selected by the Owner or Owner's Representative prior to commencing project work.

1.4.3 At minimum the following personnel shall attend:

A. Contractor and Contractor's superintendent and assistants
B. Owner's Representative
C. Project Manager
D. Project Inspector
E. Building Manager and/or representative
F. Other personnel as indicated by the Owner

1.4.4 Pre-work submittals are to be presented at the Preconstruction Conference. No work shall commence prior to approval of required Pre-work submittals.

1.4.5 The Contractor shall present for approval the Contractor's Schedule and Building Coordination Plan.

1.4.6 The Preconstruction Conference will be chaired by the Owner's Representative or other owner designee.

1.5 WEEKLY PROGRESS MEETINGS
SECTION 01220

PROJECT MEETINGS

1.5.1 The Contractor shall attend weekly progress meetings and other called meetings throughout the duration of the project.

1.5.2 The Contractor shall provide and present materials as required for each progress meeting as delineated herein.

1.5.3 Weekly progress meetings shall be held at the time and place as delineated by the Owner.

1.5.4 The following personnel shall attend the weekly progress meetings:
   A. Contractor and Contractor's superintendent and assistants
   B. Owner's Representative
   C. Project Manager
   D. Project Inspector
   E. Building Manager and/or representative
   F. Other personnel as indicated by the Owner

1.5.5 Agenda shall consist of the review of the following at minimum:
   A. Minutes of previous meeting
   B. Work progress, field observations of operations, problems, etc.
   C. Identified problems which will delay project schedule or adversely affect coordination with other parts of the project
   D. Methods employed to comply with project schedule
   E. Submittal schedule and status of submittals and re-submittals
   F. Means of expediting work to comply with project schedule
   G. Revised schedule for next work period, if necessary
   H. Coordination of scheduled work progress
   I. Issues related to quality of work
   J. Proposed changes in work and their effect on schedule and coordination
   K. Unsettled Contractor claims
   L. Unresolved items and discussion of means of settling them; adoption of such means if possible
   M. Other items of discussion as approved by the Owner or Owner's Representative
SECTION 01220

PROJECT MEETINGS

N. Weekly progress meetings will be chaired by the Owner's Representative or other owner designee.

2 PART 2 - PRODUCTS  (Not Applicable)

3 PART 3 - EXECUTION(Not Applicable)

END OF SECTION - 01220
1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:

A. Contractor's construction schedule
B. Submittal schedule
C. Daily construction reports
D. Product Data
E. Samples
F. Miscellaneous Submittals

1.2.2 Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

A. Permits
B. Applications for payment
C. Performance and payment bonds
D. Insurance certificates
E. List of Subcontractors

1.3 SUBMITTAL PROCEDURES

1.3.1 Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

A. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.

B. The Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
SECTION 01301

SUBMITTALS

1.3.2 Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.

A. No extension of Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the work to permit processing.

1.3.3 Submittal Transmittal: Submittals received from sources other than the Contractor will be returned without action.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

1.4.1 Schedule: Provide proposed detailed schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates. Submit within five days of the date established for "Commencement of the Work."

A. Provide a separate line item for each significant construction activity. Identify the first working day of each week.

B. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.

C. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the work.

D. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.

E. Indicate Clearance of each Work Area in advance of the dates established for Clearance. Allow time for testing and other Owner's Representative's procedures necessary for certification of Clearance.

1.4.2 Phasing: Provide notations on the schedule to show how the sequence of the work is affected by requirements for phased completion to permit work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.

1.4.3 Work Stages: Indicate important stages of construction for each major portion of the work, including testing and installation. Include indication of start and finish times for the following:

A. Preparation of the Work Area

B. Asbestos removal

C. Clearance testing
SECTION 01301

SUBMITTALS

D. Completion (beneficial occupancy is acceptable with punch list.)

1.4.4 Area Separations: Provide a separate time bar to identify each Work Area or major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.

1.4.5 Distribution: Following response to the initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the project meeting room and temporary field office.

1.4.6 When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

1.4.7 Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.5 SUBMITTAL SCHEDULE

1.5.1 Listing: At the end of this section is a listing of the principal submittals required for the work. This listing is not necessarily complete, nor does the listing reflect the significance of each submittal requirement. The listing is included only for the convenience of users of the Contract Documents.

1.5.2 Distribution: Following response to initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.

1.5.3 When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

1.5.4 Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.6 MISCELLANEOUS SUBMITTALS

1.6.1 Material Safety Data Sheets: Process material safety and data sheets as "product data."

1.6.2 Closeout Submittals: Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information.

1.6.3 Record Documents: Furnish set of original documents as maintained on the project site.

END OF SECTION 01301
SECTION 01301

SUBMITTALS

SUBMITTAL CHECKLIST

The submittals required from the Contractor include, but are not limited to the following. Refer to each section for required submittals.

01013 Summary of Work - Asbestos Abatement
Before Start of Work:
- Plan of Action
- Pre-construction Inspection

01043 Project Coordination - Asbestos Abatement
Before Start of Work:
- Construction Schedule
- Contingency Plans
- Telephone Numbers
- Notifications sent to other entities at the work site
- Notifications sent to emergency service agencies
- Resume: of general superintendent
- Accreditation: of accreditation of general superintendent
- Staff Names:
Periodically During Work:
- Daily Logs
- Event Reports
- Accident Reports
- Discovered Condition Reports

01220 Project Meetings
Before Start of Work:
- Building Coordination Plan

01301 Submittals
Before Start of Work:
- Contractors Construction Schedule
Project closeout:
- Record Documents

01503 Temporary Facilities - Asbestos Abatement
Before Start of Work:
- Approved Scaffolding Plan
- Hot water heater
- Decontamination Unit Sub-panel
- Ground Fault Circuit Interrupters (GFCI)
- Lamps and Light Fixtures
- Temporary Heating Units
- Temporary Cooling Units
- Self Contained Toilet Units: Product Data, Sub-contractor
- First Aid Supplies
- Fire Extinguishers: product data, location schedule
Periodically During Work: None
01513 Temporary Negative Pressure & Air Circulation System

Before Start of Work:
- Negative Pressure System Design
- HEPA Filtered Fan Units: Product data
- Monitoring Equipment: Product data
- Auxiliary Generator: Product data
- Power Switch: Product data
- Auxiliary Power System: Shop Drawing

Periodically During Work:
- Pressure Differential Monitoring Results

01526 Temporary Enclosures

Before Start of Work:
- Signs: Samples

Periodically During Work:

01560 Worker Protection - Asbestos Abatement

Before Start of Work:
- AHERA Accreditation: for each worker
- State and Local License: for each worker
- Certificate Worker Acknowledgement: for each worker
- Statement of Physician's opinion for each worker

Periodically During Work:
- Updated workers' information for all new workers, as above

01562 Respiratory Protection

Before Start of Work:
- NIOSH and MSHA Certifications
- Respiratory Protection Program, Negative Exposure Assessment

Periodically During Work:
- None

01563 Decontamination Units

Before Start of Work:
- Personnel Decontamination Unit: Sketch showing location
- Equipment Decontamination Unit: Sketch showing location
- Filters: product data

Periodically During Work:
- None

01601 Materials and Equipment - Asbestos Abatement

Before Start of Work:
- Product List Schedule

01701 Project Closeout - Asbestos Abatement

Before Start of Work:
- None

Periodically During Work:
- Refer to section.

01711 Project Decontamination

Before Start of Work:
- None
SECTION 01301
SUBMITTALS

After Contractor's Final Testing:
Certification of Visual Inspection

02081 Removal of Asbestos-Containing Materials
Before Start of Work:
Surfactant: product data
Removal Encapsulant: product data
NESHAP Certification: on surfactant or removal encapsulant
Material Safety Data Sheet: for each surfactant and encapsulant
Periodically During Work:
None

02084 Disposal of Asbestos-Containing Waste Material
Before Start of Work:
Waste Hauler State License
Waste Hauler Local License
Name and address of landfill
Landfill contact person and telephone number
Name and address of processor
Processor contact person and telephone number
Product data on process to be used
Process parameters or operating conditions
Chain of Custody form
Waste Manifest Form
Disposal Bag: samples
Label Samples
Periodically During Work:
Copies of manifests and disposal site receipts

END OF SUBMITTAL CHECKLIST
1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.

1.1.2 Air Monitoring: during work area clearance is described in Section 01714 Work Area Clearance.

1.2 DESCRIPTION OF THE WORK

1.2.1 Not in Contract Sum: This section describes work being performed by the Owner. This work is not in the Contract Sum.

1.2.2 This section describes air monitoring carried out by the Owner to verify that the building beyond the work area and the outside environment remains uncontaminated. This section also sets forth airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

1.2.3 Air monitoring required by OSHA is work of the Contractor and is not covered in this section.

1.3 AIR MONITORING

1.3.1 Work Area Isolation: The purpose of the Owner's air monitoring is to detect faults in the work area isolation such as:

A. Contamination of the building outside of the work area with airborne asbestos fibers

B. Failure of filtration or rupture in the negative pressure system

C. Contamination of air outside the building envelope by airborne asbestos fibers

1.3.2 Should any of the above occur, immediately cease asbestos abatement activities until the fault is corrected. Do not recommence work until authorized by the Owner's Representative.

1.3.3 Work Area Airborne Fiber Count: The Owner will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne asbestos concentrations which may challenge the ability of the Work Area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

1.3.4 Work area clearance: To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the Owner will sample and analyze air per Section 01714 Work Area Clearance.
SECTION 01410

AIR MONITORING - TEST LABORATORY SERVICES

1.3.5 The Owner will be conducting air monitoring throughout the course of the project.

1.4 STOP ACTION LEVELS

1.4.1 Inside Work Area: Maintain an airborne count in the work area of less than 0.1 f/cc. If a fiber count for any work shift or 8 hour period exceeds the Stop Action Level, stop all work except corrective action, leave negative pressure and air circulation system in operation and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Owner's Representative.

1.4.2 Outside Work Area: If any air sample taken outside of the Work Area exceeds the base line established prior to start of work, immediately and automatically stop all work except corrective action. The Owner's Representative will determine the source of the high reading and so notify the Contractor in writing.

1.4.3 If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:

A. Immediately erect new critical barriers as set forth in Section 01526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (eg. wall, ceiling, floor).

B. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.

C. Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section 01714 Work Area Clearance.

D. Leave Critical Barriers in place until completion of work and insure that the operation of the negative pressure system in the Work Area results in a flow of air from the balance of the building into the affected area.

E. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Clean Room as set forth in Section 01563 Decontamination Units at entry point to affected area.

F. After Certification of Visual Inspection in the Work Area, remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section 01714 Work Area Clearance.

1.4.4 If the high reading was the result of other causes, initiate corrective action as determined by the Owner's Representative.

1.4.5 Effect on Contract Sum

A. Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities; TEM charges will be borne by Contractor.
SECTION 01410

AIR MONITORING - TEST LABORATORY SERVICES

B. The Contract Sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

1.4.6 Fibers Counted: TEM analysis will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.

1.5 ANALYTICAL METHODS

1.5.1 The following methods will be used by the Owner in analyzing filters used to collect air samples. The filters used shall be in accordance with the referenced methods.

1.5.2 Samples collected for PCM analysis shall be analyzed by NIOSH 7400 method.

1.5.3 Samples collected for TEM analysis shall be analyzed by the method set forth in the AHERA Regulations, 40 CFR 763, Appendix A.

1.6 SAMPLE VOLUMES

1.6.1 General: The number and volume of air samples taken by the Owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

1.7 SCHEDULE OF AIR SAMPLES

1.7.1 Sample cassettes: Samples will be collected on 25 mm. cassettes with 50 mm. extension cowl as follows:

A. PCM: 0.8 micrometer mixed cellulose ester.

B. TEM: 0.45 micrometer mixed cellulose ester

1.8 BASELINE

1.8.1 Before Start of Work

A. The Owner will secure the following Air Samples to establish a base line before start of work.
SECTION 01410
AIR MONITORING - TEST LABORATORY SERVICES

<table>
<thead>
<tr>
<th>LOCATION SAMPLED</th>
<th>NUMBER OF SAMPLES</th>
<th>MINIMUM VOLUME (LITERS)</th>
<th>RATE LPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Work Area</td>
<td>5 for up to 5,000 SF; 1 extra per each additional 5,000 SF</td>
<td>1,800</td>
<td>1-12</td>
</tr>
<tr>
<td>Outside Each Work Area</td>
<td>3</td>
<td>1,800</td>
<td>1-12</td>
</tr>
</tbody>
</table>

1.9 DAILY

1.9.1 From start of work of Section 01526 Temporary Enclosures through the work of Section 01711 Project Decontamination, the Owner may be taking the following samples on a daily basis.

<table>
<thead>
<tr>
<th>LOCATION SAMPLED</th>
<th>NUMBER OF SAMPLES</th>
<th>MINIMUM VOLUME (LITERS)</th>
<th>RATE LPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each Work Area</td>
<td>3/shift</td>
<td>480</td>
<td>1-12</td>
</tr>
<tr>
<td>Outside each Work Area at Critical Barrier adjacent to occupied space or space which will be occupied later.</td>
<td>1</td>
<td>1,800</td>
<td>1-12</td>
</tr>
<tr>
<td>Clean Room</td>
<td>1</td>
<td>1,800</td>
<td>1-12</td>
</tr>
<tr>
<td>Equipment Decontamination Unit</td>
<td>1</td>
<td>1,800</td>
<td>1-12</td>
</tr>
<tr>
<td>Output, Negative Pressure System</td>
<td>1</td>
<td>1,800</td>
<td>1-12</td>
</tr>
</tbody>
</table>

1.9.2 *OR AS REQUIRED BY CONDITIONS. LOWER VOLUMES REQUIRED BY TIME CONSTRAINTS OR FILTER LOADING WILL RAISE THE DETECTION LIMIT, REDUCING SAMPLING SENSITIVITY.

1.9.3 Additional samples may be taken at Owner's or Owner's Representative's discretion. If airborne fiber counts exceed allowed limits, additional samples will be taken as necessary to monitor fiber levels.

1.10 LABORATORY TESTING

1.10.1 The services of a testing laboratory will be employed by the Owner to obtain air samples as indicated and to perform laboratory analyses of the air samples. A technician will obtain samples daily. Samples will be analyzed on site at a suitable location as provided by the Owner so that verbal reports on air samples can be obtained within 2-4 hours of collection.
## SECTION 01410
### AIR MONITORING - TEST LABORATORY SERVICES

1.10.2 The Contractor will have access to all air monitoring tests and results.

1.10.3 A complete record of all air monitoring and results will be furnished to the Owner's Representative and the Owner.

1.10.4 **Written Reports:** Of all air monitoring tests will be posted at the job site on a daily basis.

### 2 PART 2 - PRODUCTS (NOT APPLICABLE)

### 3 PART 3 - EXECUTION

#### 3.1 PERSONAL EXPOSURE MONITORING:

3.1.1 Owner will not be performing air monitoring to meet Contractor's OSHA requirements for personnel sampling or any other purpose.

END OF SECTION - 01410
SECTION 01503
TEMPORARY FACILITIES-ASBESTOS ABATEMENT

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

1.2.1 General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.3 SUBMITTALS

1.3.1 Before the Start of Work: Submit the following to the Owner's Representative for review. Begin no work until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1.3.2 Scaffolding: Scaffolding plan must be submitted for all scaffolding to be used on this project. The plan should show layout and construction of the structure and must be approved by a registered professional engineer.

1.3.3 The following information must be made available to the Owner or Owner's Representative upon request.

A. Hot water heater: Submit manufacturers name, model number, size in gallons, heating capacity, power requirements

B. Decontamination Unit Sub-panel: Product data

C. Ground Fault Circuit Interrupters (GFCI): Product data

D. Lamps and Light Fixtures: Product data

E. Temporary Heating Units: Product data

F. Temporary Cooling Units: Product data and installation instructions

G. Self Contained Toilet Units: Product data and name of sub-contractor to be used for servicing self contained toilets. Submit method to used for servicing

H. First Aid Supplies: List of contents of first aid kit. Submit in form of check list

I. Fire Extinguishers: Product data. Submit schedule indicating location at job site.

2 PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT
SECTION 01503

TEMPORARY FACILITIES-ASBESTOS ABATEMENT

2.1.1 **General**: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 **SCAFFOLDING**

2.2.1 Provide all scaffolding, ladders and/or staging, etc., as necessary to accomplish the work of this contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type and must be implemented by a professional scaffolding company. The type, erection and use of all scaffolding shall comply with all applicable OSHA regulations. The contractor shall be responsible for any damage which occurs as a result from improper scaffolding use.

2.2.2 Equip rungs of all metal ladders, etc., with an abrasive non-slip surface.

2.2.3 Provide a non-skid surface on all scaffold surfaces subject to foot traffic.

2.3 **WATER SERVICE**

2.3.1 **Temporary Water Service Connection**: All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

2.3.2 **Water Hoses**: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each Work Area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles, and equipment.

2.3.3 **Hot Water Heater**: Provide UL rated 40 gallon electric hot water heater to supply hot water for the Decontamination Unit shower. Activate from 30 amp circuit breaker located within the Decontamination Unit sub-panel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, NECA, and UL standards.
SECTION 01503
TEMPORARY FACILITIES-ASBESTOS ABATEMENT

2.4 ELECTRICAL SERVICE

2.4.1 General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.

2.4.2 Temporary Power: Provide service to Decontamination Unit sub-panel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Sub-panel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.

2.4.3 Voltage Differences: Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.

2.4.4 Ground Fault Protection: Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

2.4.5 Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

2.4.6 Lamps and Light Fixtures: Provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work of this section. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.5 TEMPORARY HEAT

2.5.1 Heating Units: Temporary heating units must have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. Use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

2.6 TEMPORARY COOLING

2.6.1 Cooling Units: Temporary cooling units must consist of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.7 SELF-CONTAINED TOILETS
SECTION 01503

TEMPORARY FACILITIES-ASBESTOS ABATEMENT

2.7.1 Self-Contained Toilet Units: Provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

2.8 FIRST AID

2.8.1 First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

2.9 FIRE EXTINGUISHERS

2.9.1 Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.

3 PART 3 - EXECUTION

3.1 SCAFFOLDING

3.1.1 During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

3.1.2 Clean as necessary debris from non-slip surfaces.

3.1.3 At the completion of abatement work clean all construction aids within the work area. Either wrap in one layer of 6 mil polyethylene sheet and seal before removal from the Work Area or decontaminate thoroughly through the equipment decontamination unit.

3.2 INSTALLATION, GENERAL

3.2.1 General: Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

A. Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed.

B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

3.3 WATER SERVICE

3.3.1 General: Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm each to hot and cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of 100 F. Supply hot and cold water to the Decontamination Unit.
SECTION 01503
TEMPORARY FACILITIES-ASBESTOS ABATEMENT

A. Maintain hose connections and outlet valves in leakproof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.4 ELECTRICAL SERVICE

3.4.1 General: Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

3.4.2 Lockout: Lockout all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the Work Area are not to be used. All power and lighting to the Work Area and Decontamination facilities are to be provided from temporary electrical panel described below.

A. Lockout power to Work Area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on." Lock panel and have all keys under control of Contractor's Superintendent or Owner's designated Representative.

B. Lockout power to circuits running through Work Area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on." Sign and date danger tag. Lock panel and supply keys to Contractor, Owner and Owner's Representative. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard."

3.4.3 Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative.

3.4.4 Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be at least exposed to damage from construction operations.

3.4.5 Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.

3.4.6 Temporary Wiring: in the Work Area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.
SECTION 01503

TEMPORARY FACILITIES-ASBESTOS ABATEMENT

3.4.7 Number of Branch Circuits: Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:

A. One Circuit for each HEPA filtered fan unit

B. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).

C. One outlet in the work area for each 2500 square feet of work area

D. One outlet at each decontamination unit, located in equipment room

E. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:

F. One in each work area

G. One at clean side of each Decontamination Unit.

H. One at each exhaust location for HEPA filtered fan units

I. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use for conducting final air sampling as set forth in Section 01714 Work Area Clearance as follows:

J. Five inside work area

K. Two outside work area in location designated by Owner's Representative

3.5 TEMPORARY LIGHTING

3.5.1 Lockout: Lock out all existing power to lighting circuits in Work Area as described in section 01526 Temporary Enclosures. Unless specifically noted otherwise existing lighting circuits to the Work Area are not to be used. All lighting to the Work Area and Decontamination facilities is to be provided from temporary electrical panel described above.

3.5.2 Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:

A. One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

B. Provide lighting in areas where work is being performed as required to supply a 100 foot candle minimum light level.
C. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.

D. Provide lighting in the Decontamination Unit as required to supply a 50 foot candle minimum light level.

3.5.3 Number of Lighting Circuits: Provide sufficient lighting circuits as required by the work. All lighting circuits are to originate at temporary electrical panel.

3.5.4 Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

3.6 TEMPORARY HEAT

3.6.1 General: Provide temporary heat where indicated or needed for performance of the Work.

3.6.2 Maintain a minimum temperature of 75 degrees F in the shower of the decontamination unit.

3.7 SANITARY FACILITIES

3.7.1 Toilets: Use of the Owner’s existing toilet facilities, as indicated, will be permitted, so long as these facilities are properly cleaned and maintained in a condition acceptable to the Owner. At substantial completion, restore these facilities to the condition prevalent at the time of initial use. Written permission from the Owner must be obtained, and all provisions of these specifications regarding leaving the work area are met.

3.8 FIRE EXTINGUISHERS

3.8.1 Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers" and local fire regulations. Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area in Equipment Room and One outside Work Area in Clean Room.

END OF SECTION - 01503
PART 1 - GENERAL

1.1 Negative pressure machines and the process of setting up a negative pressure space may be subject to patent rights (e.g. Patent No. 4,604,111). Contractor shall pay all license fees and royalties and assume all costs incidental to the use, in the performance of the work or the incorporation into the work of any invention, design, process, product or device which is the subject of any rights, including but not limited to patents or copyrights, held by others. Contractor shall defend, indemnify and hold harmless South Orange Community College District and H2 Environmental Consulting Services, Inc. and anyone directly or indirectly employed by either of them from and against any and all claims, damages, losses and expenses (including attorney's fees and court and arbitration expenses) arising out of any alleged infringement of such rights of others.

1.2 RELATED DOCUMENTS

1.2.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.3 MONITORING

1.3.1 Continuously monitor and record the pressure differential between the work area and the outside of the work area with a monitoring device incorporating a continuous recorder. For containments greater than 20,000 square feet, two monitoring devices, with recorder, shall be required. Meters shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.02 inches of water.

1.3.2 The monitoring device(s) shall produce a continuous print out of the pressure differential between the work area and the outside of the work area. The Contractor shall date, initial and indicate the beginning and the end of each shift on the printout. Maintain records of pressure differential in the project data binder.

1.4 SUBMITTALS

1.4.1 Before Start of Work: Submit design of negative pressure system to the Owner's Representative for review. Do not begin work until submittal is returned with the Owner's Representative's approval indicating that the submittal is returned for unrestricted use. Include in the submittal at a minimum:

A. Number of HEPA filtered fan units required and the calculations necessary to determine the number of machines

B. Description of projected air flow within Work Area and methods required to provide adequate air flow in all portions of the work area

C. Anticipated pressure differential across Work Area enclosures
SECTION 01513
TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

D. Description of methods of testing for correct air flow and pressure differentials

E. Manufacturer's product data on the HEPA filtered fan units to be used

F. Location of the machines in the Work Area

G. Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power

H. Description of work practices to insure that airborne fibers travel away from workers

I. Manufacturer's product data on equipment used to monitor pressure differential between inside and outside of Work Area

J. Manufacturer's product data on auxiliary generator to be used

1.4.2 On a weekly basis: Submit printout from pressure differential monitoring equipment. Mark printout with date and start of time for each day. Use printout paper that indicates elapsed time in intervals no greater than hours. Indicate on each day's record times of starting and stopping abatement work, type of work in progress, breaks for lunch or other purposes, periods of stop work, and filter changes. Cut printout into segments by day, attach to 8 1/2" by 11" paper. Label with project name, contractor's name and date.

1.5 QUALITY ASSURANCE

1.5.1 Monitor pressure differential at Personnel and Equipment Decontamination Units with a differential pressure meter equipped with a continuous recorder. Meter shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.01" of water.

2 PART 2 - PRODUCTS

2.1 HEPA FILTERED FAN UNITS

2.1.1 General: Supply the required number of HEPA filtered fan units to the site in accordance with these specifications. Use units that meet the following requirements.

2.1.2 Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Provide units whose cabinets are:

A. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance

B. Arranged to provide access to and replacement of all air filters from intake end

C. Mounted on casters or wheels
SECTION 01513

TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

2.1.3 Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions.

2.1.4 HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.

A. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.

B. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.

C. Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.

2.1.5 Prefilters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. Provide units with the following pre-filters:

A. First-stage pre-filter: low-efficiency type (e.g., for particles 100 um and larger)

B. Second-stage (or intermediate) filter: medium efficiency (e.g., effective for particles down to 5 um)

C. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.

2.1.6 Instrumentation: Provide units equipped with:

A. Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed

B. A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point

C. Elapsed time meter to show the total accumulated hours of operation

2.1.7 Safety and Warning Devices: Provide units with the following safety and warning devices:

A. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter
TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

B. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge

C. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red)

D. Audible alarm if unit shuts down due to operation of safety systems

2.1.8 Electrical components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

2.2 AUXILIARY GENERATOR

2.2.1 Provide auxiliary gasoline powered generator located outside of the building in a location protected from the weather. Arrange so that if a power failure occurs the generator automatically starts and supplies power to a minimum of 50% of the negative air machines in operation.

2.3 AUXILIARY POWER SWITCH

2.3.1 Auxiliary Power Switch: Provide a switching relay which will automatically start auxiliary generator and switch over power supplied to HEPA filtered fan units to auxiliary generator.

3 PART 3 - EXECUTION

3.1 NEGATIVE PRESSURE SYSTEM ISOLATION

3.2 Isolate the Work Area from all adjacent areas or systems of the building with a pressure differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the Work Area ("Negative Air").

3.2.1 Relative Pressure in Work Area: Continuously maintain the Work Area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of 0.02 inches of water.

A. Accomplish the pressure differential by exhausting a sufficient number of HEPA filtered fan units from the Work Area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the Work Area. Determine the number of units required for pressure isolation by the following procedure:

B. Establish required air circulation in work area, personnel and equipment decontamination units. Exhaust a sufficient number of units from the work area to develop the required pressure differential.
SECTION 01513

TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

C. The required number of units is the number determined above plus one additional unit.

3.2.2 Vent HEPA filtered fan units to outside of building unless authorized in writing by Owner’s Representative.

3.2.3 Vent each HEPA filtered fan to inlet of second unit. Vent second unit to a controlled area in building. Insure that controlled area is isolated from balance of building by critical barriers at all times that units are in operation.

A. Mount units to exhaust directly or through disposable ductwork
B. Use only new ductwork except for sheet metal connections and elbows
C. Use ductwork and fittings of same diameter or larger than discharge connection on fan unit
D. Use inflatable, disposable plastic ductwork in lengths not greater than 100 feet
E. Use spiral wire-reinforced flex duct in lengths not greater than 50 feet
F. Arrange exhaust as required to inflate duct to a rigidity sufficient to prevent flapping
G. If direction of discharge from fan unit is not aligned with duct use sheet metal elbow to change direction. Use six feet of spiral wire reinforced flex duct after direction change

3.2.4 Isolation of elevators, stair towers, and return air intakes: Erect seals with an air space at doors to elevators and stair towers.

A. Fabricate seal by first sealing door with duct tape and 6 mil polyethylene. Construct a barrier from ½” CDX plywood or ½” gypsum board supported by wood studs at 16” on centers. Space face of barrier a minimum of 3” from face of door. Seal barrier with 6 mil sheet plastic and duct tape.

B. Use plywood and framing lumber that is treated to be fire resistant

3.2.5 Isolation of return air ductwork: Return air duct work which must be kept operating is to be isolated from the Work Area.

A. Wrap the duct with 2 layers of 6 mil polyethylene. Seal all polyethylene seams with spray glue and duct tape.

3.3 AUXILIARY GENERATOR

3.3.1 Provide auxiliary gasoline-powered generator located outside of the building in a location which is protected from the weather. Arrange so that if a power failure occurs the generator automatically starts and supplies power to a minimum of 50% of the HEPA filtered fan units in operation.
SECTION 01513
TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

3.4 AIR CIRCULATION IN THE WORK AREA

3.4.1 **Air Circulation:** For purposes of this section air circulation refers to either the introduction of outside air to the Work Area or the circulation and cleaning of air within the Work Area.

3.4.2 **Determining the Air Circulation Requirements:** Provide a fully operational air circulation system supplying a minimum of four (4) air changes per hour.

3.4.3 **Determine Number of Units** needed to achieve required air circulation according to the following procedure:

A. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by multiplying this volume by the air change rate and dividing by 60.

\[
\text{Air Circulation Required in Cubic Feet of Air per Minute (CFM)} = \frac{\text{Volume of work area (cu. ft.)} \times \text{Number of air changes per hour}}{60 \text{ (minutes per hour)}}
\]

B. Divide the air circulation requirement (CFM) above by capacity of HEPA filtered fan unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.

\[
\text{Number of Units Needed} = \frac{\text{Air circulation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}
\]

C. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

3.5 EXHAUST SYSTEM

3.5.1 Negative pressure isolation and air circulation in the Work Area are to be accomplished by an exhaust system as described below.

3.5.2 **Exhaust all units** from the Work Area to meet air circulation requirement of this section.

3.5.3 **Location of HEPA Filtered Fan Units:** Locate fan unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses Work Area as much as possible. This may be accomplished by positioning the HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.

3.5.4 **Vent to Outside of Building,** unless authorized in writing by the Owner's Representative.

3.5.5 **Window Openings:** Window panes which have to be removed temporarily shall be reinstalled by a qualified tradesman at the completion of the work.
3.5.6 **Decontamination Units**: Arrange Work Area and decontamination units so that the majority of make up air comes through the Decontamination Units. Use only personnel or equipment Decontamination Unit at any time and seal the other so that make up air passes through unit in use.

3.5.7 **Supplemental Makeup Air Inlets**: Provide where required for proper air flow through the Work Area in location approved by the Owner's Representative by making openings in the plastic sheeting that allow air from outside the building into the Work Area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the Work Area from occupied clean areas. Cover with flaps to reseal automatically if the negative pressure system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry. If makeup air is coming from an asbestos-fiber-contaminated source or potentially contaminated then it should pass through a HEPA filter before entering work area. If air is contaminated with other materials it may also require filtering. If this is done, supply air fans will be necessary to overcome the resistance of the filters. A HEPA filtered fan unit may be used to accomplish this. Caution must be used to insure that work area remains under negative pressure.

3.6 **RECIRCULATION SYSTEM**

3.6.1 Pressure differential isolation and air circulation in the Work Area are to be accomplished by a recirculation system as described below.

A. **Recirculate air** in the Work Area through HEPA filtered fan units to accomplish air circulation requirements of this section.

B. **Location of Fan Units**: Locate HEPA filtered fan units so that air is circulated through all parts of the Work Area, and so that required pressure is maintained at all parts of Work Area geometry. Move units as necessary so that in any location where asbestos-containing materials are being disturbed the discharge from one HEPA filtered fan unit is blowing contamination away from workers. Direct air flow in these locations so that it is predominantly toward workers' backs at the breathing zone elevation.

3.7 **AIR CIRCULATION IN DECONTAMINATION UNITS**

3.7.1 **Pressure Differential Isolation**: Continuously maintain the pressure differential required for the work area in the:

A. Personnel Decontamination Unit: across the Shower Room with the Equipment Room at a lower pressure than the Clean room.

B. Equipment Decontamination Unit: Across the Holding Room with the Wash Room at a lower pressure than the Clean Room.

3.7.2 **Air Circulation**: Continuously maintain air circulation in Decontamination Units at same level as required for Work Area.
TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

3.7.3 Air Movement: Arrange air circulation through the Personnel Decontamination Unit so that it produces a movement of air from the Clean Room through the Shower Room into the Equipment Room.

3.8 USE OF THE NEGATIVE AIR SYSTEM

3.8.1 General: Each unit shall be serviced by dedicated circuits with overload device. If an existing building electrical panel is being used it must have sufficient spare capacity to accommodate the load of all negative pressure units connected. Dedication of existing circuits may be accomplished by shutting down existing loads on the circuits.

3.8.2 Testing the System: Test negative pressure system before any asbestos-containing material is wetted or removed. After the Work Area has been prepared, the decontamination facility set up, and the fan unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of negative pressure system to Owner's Representative.

3.8.3 Demonstrate Condition of Equipment for each HEPA filtered fan unit and negative pressure monitoring equipment including proper operation of the following:

A. Squareness of HEPA Filter
B. Condition of Seals
C. Proper operation of all lights
D. Proper operation of automatic shut down if exhaust is blocked
E. Proper operation of alarms
F. Proper operation of manhelic gauge
G. Proper operation and calibration on pressure monitoring equipment

3.8.4 Demonstrate Operation of the negative pressure system to the Owner's Representative to include, but not be limited to, the following:

A. Plastic barriers and sheeting move lightly in toward Work Area
B. Curtain of decontamination units move lightly in toward Work Area
C. There is a noticeable movement of air through the Decontamination Unit
D. Use smoke tube to demonstrate air movement from Clean Room through Shower Room to Equipment Room
E. Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed

3.8.5 Modify the Negative Pressure System as necessary to demonstrate successfully the above.

3.8.6 Use of System During Abatement Operations
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TEMPORARY NEGATIVE PRESSURE & AIR CIRCULATION SYSTEM

A. Start fan units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain constant negative pressure and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

B. Do not shut down negative pressure system during encapsulating procedures, unless authorized by the Owner's Representative in writing. Supply sufficient pre-filters to allow frequent changes.

C. Start abatement work at a location farthest from the fan units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and fan units are operating again.

D. At completion of abatement work, allow fan units to run as specified under section 01711, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the Work Area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

3.8.7 Dismantling the System

A. When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the Work Area. Before removal from the Work Area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil polyethylene to prevent environmental contamination from the filters.
SECTION 01526
TEMPORARY ENCLOSURES

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 SUBMITTALS

1.2.1 Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's approval indicating that the submittal is returned for unrestricted use.

1.2.2 Strippable Coatings: Submit following:

A. Product description including major components and solvents.

B. Test report on ASTM E84 test of surface burning characteristics.

C. Manufacturer's installation instructions. Indicate portions applicable to the project and selected assemblies where the manufacturer offers alternatives.

D. Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for strippable coating material proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

1.2.3 Spray Cement: Submit following:

A. Product description including major components and solvents.

B. Manufacturer's installation instructions. Indicate portions applicable to the project.

C. Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for spray cement material proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

1.2.4 Sheet Plastic: For fire retardant plastic submit test reports on NFPA 701 test.

1.2.5 Signs: Submit samples of signs to be used.
2 PART 2 - PRODUCTS

2.1 SHEET PLASTIC

2.1.1 Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4 or 6 mils thick as indicated, clear, frosted, or black as indicated.

2.1.2 Polyethylene Sheet: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mils thick as indicated, frosted or black as indicated.

2.1.3 Reinforced Polyethylene Sheet: Where plastic sheet constitutes the only barrier between the work area and the building exterior, provide translucent, nylon reinforced or woven polyethylene, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.

2.2 STRIPPABLE COATINGS

2.2.1 Provide strippable coatings in aerosol cans or premixed for spray application formulated to adhere gently to surfaces and remove cleanly by peeling off at the completion of the work.

2.2.2 Provide only water-based latex materials.

2.2.3 Provide materials manufactured for the specific application required.

2.2.4 Wall coating: designed to be easy to remove

2.2.5 Floor coating: designed to provide a tough film which resists spread of water beneath plastic layer

2.2.6 Window coating: recommended by the manufacturer for use on windows. Supply materials that are designed to be stable on glass in sunlight and resist the transmission of ultraviolet radiation

2.2.7 Fire Safety: Provide materials that meet the following requirements:

A. When wet or while being installed:
   A.(1) Do not create combustible vapors
   A.(2) Have no flash point
   A.(3) Are not noxious
   A.(4) Department of Transportation category of non-flammable
SECTION 01526
TEMPORARY ENCLOSURES

B. When dry, material must have a Class A rating as a building material and meet the following requirements when tested in accordance with ASTM E-84:

B.(1) Flame Spread no greater than 20
B.(2) Fuel Contributed 0
B.(3) Smoke Developed no more than 110

2.2.8 Deliver materials to the job site in unopened, factory-labeled containers.

2.3 MISCELLANEOUS MATERIALS

2.3.1 Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

2.3.2 Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

3 PART 3 - EXECUTION

3.1 SEQUENCE OF WORK

3.1.1 Carry out work of this section sequentially. Complete each activity before proceeding to the next.

3.2 GENERAL

3.2.1 Work Area: One contiguous work location. A "Work Area" is considered contaminated during the work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos-control work.

3.2.2 Completely isolate the Work Area from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 01711. Perform all such required cleaning or decontamination at no additional cost to owner.

3.2.3 Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of Work Area isolation.

3.2.4 Remove all removable furniture that has been designated uncontaminated by the Contract Documents or Owner's Representative. Also remove uncontaminated equipment, and/or supplies from the Work Area before commencing work, or completely cover with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, securely taped in place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached.

3.2.5 Disable ventilating systems or any other system bringing air into or out of the Work Area. Disable system by disconnecting wires, removing circuit breakers, by
lockable switch or other positive means that will prevent accidental premature restarting of equipment.

3.2.6 **Lockout power to Work Area** by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Contractor's Superintendent or Owner's designated Representative.

3.2.7 **Lockout power to circuits running through work area** wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Contractor's Superintendent or Owner's designated Representative. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocuton hazard." Label circuits in hidden locations but which may be affected by the work in a similar manner.

3.2.8 **Inspection Windows**: Install inspection windows in locations shown on the plans or as directed by the Owner's Representative. Each inspection window is to have a 24" X 24" viewing area fabricated from 1/4" acrylic or polycarbonate sheet. Install window with top at 6'-6" above floor height in a manner that provides unobstructed vision from outside to inside of the Work Area. Protect window from damage from scratching, dirt or any coatings used during the work. A sufficient number of windows are to be installed to provide observation of all portions of the Work Area that can be made visible from adjacent areas. Inspection windows that open into uncontrolled area are to be covered with a removable plywood hatch secured by lock and key. Provide keys to Owner's Representative for all such locks.

3.3 **EMERGENCY EXITS**

3.3.1 Provide emergency exits and emergency lighting as set forth below:

3.3.2 **Emergency Exits**: At each existing exit door from the Work Area provide the following means for emergency exiting:

A. Arrange exit door so that it is secure from outside the Work area but permits exiting from the Work Area.

B. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1" wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one foot high and 2" thick.

C. Provide EXIT sign at each exit.

D. Provide battery-operated emergency lighting that switches on automatically in the event of a power failure.

E. Mark arrows on poly barriers to indicate direction to exit.

3.4 **CONTROL ACCESS**
SECTION 01526
TEMPORARY ENCLOSURES

3.4.1 Isolate the Work Area to prevent entry by building occupants into Work Area or surrounding controlled areas. Accomplish isolation by the following:

A. Modify elevator controls to prevent elevators from stopping at doors in Work Areas. This work is to be performed by a qualified elevator technician.

3.4.2 Locked Access: Arrange Work Area so that the only access into Work Area is through lockable doors to personnel and equipment decontamination units.

3.4.3 Visual Barrier: Where the Work Area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that the work procedures are not visible to building occupants. Where this visual barrier would block natural light, substitute frosted or woven rip-stop sheet plastic in locations approved by the Owner's Representative.

3.4.4 Provide Warning Signs at each locked door leading to Work Area reading as follows:

A. Immediately inside door and outside critical barriers post an approximately 20 inch by 14 inch manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926.1101:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

B. Provide spacing between respective lines at least equal to the height of the respective upper line.

3.4.5 Alternate Methods of Enclosure

A. Alternate methods of containing the Work Area may be submitted to the Owner's Representative for approval in accordance with procedures set forth in Section 01632 Product Substitution. Before Class I work which involves the removal of more than 25 linear or 10 square feet of TSI or surfacing material is begun using an alternate method to those specified in 29 CFR 1926.1101, a copy of the required evaluation and certification must be submitted to the national office of OSHA. Do not proceed with any such method(s) without prior written approval of the Owner's Representative.

3.5 RESPIRATORY AND WORKER PROTECTION

Before proceeding beyond this point in providing Temporary Enclosures:

3.5.1 Provide Worker Protection per Section 01560
SECTION 01526

TEMPORARY ENCLOSURES

3.5.2 Provide Respiratory Protection per Section 01562

3.5.3 Provide Personnel Decontamination Unit per Section 01563

3.6 CRITICAL BARRIERS

3.6.1 Completely Separate the Work Area from other portions of the building and the outside by closing all openings with sheet plastic barriers at least 6 mil in thickness, or by sealing cracks leading out of Work Area with duct tape.

3.6.2 Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the Work Area with duct tape alone or with polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain seal until all work including Project Decontamination is completed. Take care in sealing of lighting fixtures to avoid melting or burning of sheeting.

3.6.3 Provide Sheet Plastic barriers at least 6 mil in thickness as required to seal openings completely from the Work Area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

3.6.4 Mechanically Support sheet plastic independently of duct tape or spray cements seals so that seals do not support the weight of the plastic.

3.6.5 Provide Negative Pressure System per Section 01513.

3.6.6 Clean housings and ducts of all overspray materials prior to erection of any Critical Barrier that will restrict access.

3.7 PREPARE AREA

3.7.1 Scaffolding: If fixed scaffolding is to be used to provide access, HEPA vacuum and wet clean area prior to scaffolding installation.

3.7.2 Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc. which cover any part of the surface to be worked on with the work.

3.7.3 Remove all general construction items such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall all such materials, upon completion of all removal work with materials, finishes, and workmanship to match existing installations before start of work.

3.7.4 Clean all contaminated furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01712 Cleaning and Decontamination Procedures, prior to being moved or covered. All equipment, furniture, etc., is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by the Owner's Representative.

3.7.5 Clean All Surfaces In Work Area with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.
SECTION 01526
TEMPORARY ENCLOSURES

3.8 PRIMARY BARRIER

3.8.1 Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.

3.8.2 Sheet Plastic: Protect surfaces in the Work Area with two (2) layers of plastic sheeting on floor and walls, or as otherwise directed on the Contract Drawings or in writing by the Owner's Representative. Perform work in the following sequence.

A. Cover Floor of Work Area with 2 individual layers of clear polyethylene sheeting, each at least 6 mil in thickness, turned up walls at least 12 inches. Forms a sharp right angle bend at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct tape all seams in floor covering. Locate seams in top layer six feet from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer.

B. Cover Carpeting with three (3) layers of polyethylene sheeting at least 6 mil in thickness. Place corrugated cardboard sheets between the top and middle layers of polyethylene.

C. Cover Sheet Plastic in areas where scaffolding is to be used with a single layer of 1/2" CDX plywood or 1/4" tempered hardboard. Wrap edges and corners of each sheet with duct tape. At completion of abatement work, wrap plywood or hardboard with 2 layers of 6 mil polyethylene and move to next Work Area or dispose of as an asbestos-contaminated waste material in accordance with section 02084 of this specification.

D. Cover all walls in Work Area including "Critical Barrier" sheet plastic barriers with one layer of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the Contract Documents or in writing by the Owner's Representative. Install sheeting so that inner layer can be removed independently of bottom layer.

E. Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide 3/4" exterior grade plywood treads securely held in place, over plastic. Do not cover rungs or rails with any type of protective materials.

F. Repair of Damaged Polyethylene Sheeting: Remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dry.

3.9 STOP WORK
3.9.1 If the Critical or Primary barrier fails or is breached in any manner stop work immediately. Do not start work until authorized in writing by the Owner's Representative.

3.10 EXTENSION OF WORK AREA

3.10.1 Extension of Work Area: If the Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the Work Area, enclose it as required by this Section of the specification and decontaminate the affected area as described in Section 01711 Project Decontamination.

3.11 SECONDARY BARRIER

3.11.1 Secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work is specified in the appropriate work sections.

3.12 EXTERIOR ENCLOSURES

3.12.1 Construct exterior enclosures as a Critical Barrier as necessary to completely enclose the work. Fabricate from reinforced polyethylene sheeting and wood framing with appropriate sized lumber. Attach to existing building components or brace as necessary for lateral stability. Construct walls to meet all state and local regulations for construction of temporary buildings. Construct to resist a wind of 30 MPH, slope ceiling to permit drainage of rain water.

END OF SECTION - 01526
SECTION 01560
WORKER PROTECTION-ASBESTOS ABATEMENT

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

1.2.1 This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE

1.3.1 Respiratory Protection: is specified in Section 01562.

1.4 WORKER TRAINING

1.4.1 AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the Asbestos Model Accreditation Plan, 40 CFR 763 Appendix C to Subpart E.

1.4.2 State and Local License: All workers are to be trained, certified and accredited as required by state or local code or regulation.

1.4.3 Training: In accordance with 29 CFR 1926.1101 and any applicable state and local regulations, train all workers shall be trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures.

1.5 MEDICAL EXAMINATIONS

1.5.1 Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour Time Weighted Average. In the absence of specific airborne fiber data provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926.1101. In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

1.6 SUBMITTALS

1.6.1 Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use.

1.6.2 Asbestos Worker Accreditation: Submit copies of certificates from an EPA-approved Asbestos Abatement Workers course for each worker as evidence that each asbestos abatement worker is accredited as required by 40 CFR 763 Appendix C to Subpart E.
SECTION 01560

WORKER PROTECTION-ASBESTOS ABATEMENT

1.6.3 State and Local License: Submit evidence that all workers have been trained, certified and accredited as required by state or local code or regulation.

1.6.4 Certificate Worker Acknowledgement: Submit an original signed copy of the Certificate of Worker's Acknowledgement found at the end of this section, for each worker who is to be at the job site or enter the Work Area.

1.6.5 Report from Medical Examination: conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:

A. Name and Social Security Number

B. Physician's Written Opinion from examining physician including at a minimum the following:

B.(1) Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.

B.(2) Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

B.(3) Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

C. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

1.6.6 Notarized Certifications: Submit certification signed by an officer of the abatement contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.1101.

2 PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING

2.1.1 Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes, for all workers in the Work Area.

2.1.2 Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protection, for all workers. Provide boots at no cost to workers. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with asbestos-containing material. Dispose of boots which have not been decontaminated as asbestos-contaminated waste at the end of the work.

2.1.3 Hard Hats: Provide head protection (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner's Representative, Project Administrator, and Owner. Label hats with same warning labels as used on
disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from Work Area at the end of the work.

2.1.4 **Goggles:** Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from Work Area at the end of the work.

2.1.5 **Gloves:** Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area and dispose of as asbestos-contaminated waste at the end of the work.

2.2 **ADDITIONAL PROTECTIVE EQUIPMENT**

2.2.1 Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Owner's Representative, Project Administrator, and other authorized representatives who may inspect the job site.

3 PART 3 - EXECUTION

3.1 **GENERAL**

3.1.1 Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the Work Area.

3.1.2 Each time Work Area is entered, remove all street clothes in the Clean Room of the Personnel Decontamination Unit and put on new disposable coverall, or reusable coverall (to be donned in Equipment Room), new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.2 **DECONTAMINATION PROCEDURES**

3.2.1 **Require all workers** to adhere to the following personal decontamination procedures whenever they leave the Work Area:

3.2.2 **When using Type C Supplied Air or Powered Air-Purifying Respirators:** Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area:

A. When exiting area, remove coveralls, disposable head covers, and disposable footwear covers or boots in the Equipment Room.

B. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
SECTION 01560
WORKER PROTECTION-ASBESTOS ABATEMENT

C. Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep canisters dry.

D. With respirator still in place thoroughly wash body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.

E. Take a deep breath; hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.

F. Carefully wash face piece of respirator inside and out.

G. If using PAPR, shut down in the following sequence: first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.

H. Shower completely with soap and water.

I. Rinse thoroughly.

J. Rinse shower room walls and floor prior to exit.

K. Proceed from shower to Clean Room and change into street clothes or into new disposable work items.

3.2.3 When using Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a half or full face cartridge type respirator:

A. When exiting area, remove coveralls, disposable head covers, and disposable footwear covers or boots in the Equipment Room.

B. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:

C. Thoroughly wet body from neck down.

D. Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.

E. Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breath.

F. Dispose of wet filters from air purifying respirator.
G. Carefully wash face piece of respirator inside and out.

H. Shower completely with soap and water.

I. Rinse thoroughly.

J. Rinse shower room walls and floor prior to exit.

K. Proceed from shower to Clean Room and change into street clothes or into new disposable work items.

3.2.4 Remote Shower: The procedures above are to be used if the decontamination facility is used as a remote shower. If a worker cannot gain direct access to the Equipment Room require that he enter Decontamination Unit and proceed directly through Shower Room to Equipment Room. Decontamination procedure is then completed as required above.

3.2.5 Within Work Area

A. Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-Work Areas of the building.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

3.3.1 Following this section is a Certificate of Worker Training. After each worker has been included in the Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION - 01560
SECTION 01560

WORKER PROTECTION-ASBESTOS ABATEMENT

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

DATE:

PROJECT NAME:
PROJECT ADDRESS:
CONTRACTOR'S NAME:

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Negative Pressure Systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature
Social Security No
Printed Name
Witness

END OF CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT - 01560
SECTION 01563
DECONTAMINATION UNITS

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

1.2.1 Instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face, in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

1.3 STANDARDS

1.3.1 Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.


NIOSH - National Institute for Occupational Safety and Health

MSHA - Mine Safety and Health Administration

Other Federal, state and/or local regulations as required

1.4 SUBMITTALS

1.4.1 Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's approval indicating that the submittal is returned for unrestricted use.
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DECONTAMINATION UNITS

1.4.2 Product Data: Submit manufacturer’s product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

1.4.3 System Diagram: When a Type “C” supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in Work Area(s), routing of air lines to Work Area(s) from compressor.

1.4.4 Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.

1.4.5 Respiratory Protection Program: Submit Contractor’s written respiratory protection program manual as required by OSHA 1926.1101.

1.4.6 Resume information: Submit resume and information on training for individual monitoring the operation of supplied air respiratory systems. Submit training certifications where applicable.

1.5 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS

1.5.1 Provide air used for breathing in Type “C” supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D.

1.6 DELIVERY

1.6.1 Deliver replacement parts, etc., not otherwise labeled by NIOSH or MSHA to job site in manufacturer’s containers.

2 PART 2 - EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

2.1.1 Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees fahrenheit.

2.1.2 Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for “Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists” and color coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

2.1.3 Non-permitted respirators: Do not use single use, disposable or quarter face respirators.

2.2 SUPPLIED AIR RESPIRATOR SYSTEMS
2.2.1 Provide equipment capable of producing air of the quality and volume required by the above referenced standards applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.

2.2.2 Face Piece and Hose: Provide full face piece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure face-piece.

2.2.3 Backup air supply: Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptable source of air automatically available to each connected face piece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average-sized adult male engaged in moderately strenuous activity.

2.2.4 Warning device: Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use in all parts of the Work Area and at the compressor. Connect alarm to warn of:

A. Compressor shut down or other fault requiring use of backup air supply
B. Carbon Monoxide (CO) levels in excess of 5 PPM

2.2.5 Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) levels. Place monitors in the airline between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".

2.2.6 Compressor Shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:

A. Carbon Monoxide (CO) concentrations exceed 5 PPM in the air line between the filter bank and backup air supply
B. Compressor temperature exceeds normal operating range

2.2.7 Compressor Motor - Provide a compressor driven by an electric motor. Do not use a gas or diesel engines to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.

2.2.8 Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from engines, motors, auxiliary generator or buildings.

2.2.9 After-Cooler: Provide an after-cooler at entry to filter system which is capable of reducing temperatures to outside ambient air temperatures.
2.2.10 Self Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of 1/2 hour 2260 PSI SCBA cylinders.

3 PART 3 - EXECUTION

3.1 GENERAL


3.1.2 Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

3.1.3 Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 01714.

3.1.4 Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be half-face air-purifying respirators with high efficiency filters.

3.1.5 Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

3.2 FIT TESTING

3.2.1 Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing have been provided.

3.2.2 On a Weekly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

3.2.3 Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED

3.3.1 Provide Respiratory Protection as indicated in paragraph below. Higher levels of protection may be provided as desired by Contractor, or as directed by Owner's representative. Start of work respiratory protection will be determined by Contractor's "Negative Exposure Assessment" as provided by 29CRR 1910.1101.

3.3.2 Use the following unless air monitoring results indicate greater protection is necessary. Refer to Protection Factors table for choice of respirators.

A. Loose equipment cleaning prior to removal in uncontaminated area: Half-face dual cartridge-type respirator.

B. Plastic installation which does not disturb asbestos-containing material: Half-face dual cartridge-type respirator.
SECTION 01563
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C. Removing or cleaning items or plastic installation when such operation may disturb asbestos-containing material: Powered air purifying respirator (PAPR).

D. Asbestos-containing material removal: Powered air purifying respirator (PAPR).

E. Gross cleanup of removal area(s): Powered air purifying respirator (PAPR).

F. Installation of encapsulant after air sampling results indicate 0.01 or less f/cc and before plastic removal: powered air purifying respirators.

G. Final wet-cleaning of walls until final air tests show exposure in work areas to be below 0.01 f/cc: powered air purifying respirators.

H. Loading and unloading drums on truck (outside work area): Half-face cartridge respirators.

I. Glove bag and modified glove bag removal: Powered air purifying respirator (PAPR).

J. Vinyl-asbestos floor tile, floor tile mastic, ceiling tile, cement-asbestos board removal: Powered air purifying respirator (PAPR).

K. Built-up roofing and roof flashing removal: Half-face dual cartridge respirators.

L. Disposal at landfill: Half-face dual cartridge respirator.

3.3.3 Fibers: For purposes of this section fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), NIOSH Method 7400 procedure, or asbestos fibers of any size as counted using either a scanning or transmission electron microscope.

3.4 AIR PURIFYING RESPIRATORS

3.4.1 Negative pressure - half or full face mask: Supply a sufficient quantity of respirator filters approved for asbestos, so that workers can change filters during the work day. Require that respirators be wet-rinsed, and filters discarded, each time a worker leaves the Work Area. Require that new filters be installed each time a worker re-enters the Work Area. Store respirators and filters at the job site in the changing room and protect totally from exposure to asbestos prior to their use.

3.4.2 Powered air purifying - half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an
extra battery pack for each respirator so that one can be charging while one is in use.

3.5 TYPE "C" RESPIRATOR

3.5.1 Air Systems Monitor: Continuously monitor the air system operation including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual, trained by manufacturer of the equipment in use or by a Certified Industrial Hygienist, in the operation and maintenance of the system to provide this monitoring. Assign no other duties to this individual which will take him away from monitoring the air system.

END OF SECTION - 01562
SECTION 01563
DECONTAMINATION UNITS

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

1.2.1 Provide separate Personnel and Equipment Decontamination facilities. Require that the Personnel Decontamination Unit be the only means of ingress and egress for the Work Area. Require that all materials exit the Work Area through the Equipment Decontamination Unit.

1.3 RELATED WORK SPECIFIED ELSEWHERE

1.3.1 Section 01503 Temporary Facilities - Asbestos Abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

1.3.2 Section 01526 Temporary Enclosures - Isolation of the Work Area

1.3.3 Section 01092 Codes and Regulations - Warning Signs

1.3.4 Section 01301 Submittals - Submittals

1.4 SUBMITTALS

1.4.1 Before the Start of Work: Submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use or final-but-restricted use.

A. Personnel Decontamination Unit: Provide sketch showing location.

B. Equipment Decontamination Unit: Provide sketch showing location.

C. Filters: Provide product data.

2 PART 2 - PRODUCTS

2.1 POLYETHYLENE SHEET

2.1.1 Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mils thick as indicated, frosted or black as indicated.
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2.2 REINFORCED POLYETHYLENE SHEET

2.2.1 Where plastic sheet is the only separation between the Work Area and building exterior, provide translucent, nylon reinforced, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.

2.3 DUCT TAPE

2.3.1 Provide duct tape in 2” or 3” widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

2.4 SPRAY ADHESIVE

2.4.1 Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

2.5 SHOWER PAN

2.5.1 Provide one piece waterproof shower pan of appropriate size. Fabricate from seamless fiberglass minimum 1/16” thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seems, copper or lead with soldered seams, or a seamless liner of minimum 60 mil thick elastomeric membrane.

2.6 SHOWER WALLS

2.6.1 Provide 8’ long by approximately 7’ high walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.

2.7 SHOWER HEAD AND CONTROLS

2.7.1 Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.

2.8 FILTERS

2.8.1 Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.

A. Primary Filter - Passes particles 20 microns and smaller

B. Secondary Filter - Passes particles 5 microns and smaller

C. Provide spare filters for both personnel and equipment decontamination unit water filters.

2.9 HOSE BIB
SECTION 01563
DECONTAMINATION UNITS

2.9.1 Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.

2.10 SHOWER STALL
2.10.1 For Wash Down Station provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' x 3' square with minimum 6' high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4'-0" above drain pan. Connect drain to a reservoir, pump water from reservoir through filters to a drain. Mount filters inside shower stall on back wall beneath hose bib.

2.11 ELASTOMERIC MEMBRANE
2.11.1 Provide uniform flat sheets of flexible sheet roofing material fabricated from EPDM (ethylene propylene diene monomers) or Neoprene (polychloroprene), in a nominal 45 mil thickness.

2.12 LUMBER
2.12.1 Provide kiln dried lumber of any grade or species.

2.13 SUMP PUMP
2.13.1 Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

2.14 HOLDING TANK
2.14.1 Provide holding tank for waste water to prevent water from backing up in shower or wash room.

2.15 GROUND FAULT CIRCUIT INTERRUPTER
2.15.1 To be installed on all electrical equipment, including cords, used in the decontamination units.

3 PART 3 - EXECUTION
3.1 PERSONNEL DECONTAMINATION UNIT
3.1.1 Provide a Personnel Decontamination Unit outside the work area consisting of a serial arrangement of connected rooms or spaces, Clean Room, Shower Room, and Equipment Room. Provide one shower head per ten workers on a shift. Require all persons without exception to pass through this Decontamination Unit for entry into and exiting from the Work Area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel
SECTION 01563
DECONTAMINATION UNITS

Decontamination Unit. Provide adequate temporary lighting and heat within Decontamination Units.

3.1.2 Clean Room (changing room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.

A. Construct using polyethylene sheeting, at least 6 mil in thickness, to provide an airtight seal between the Clean Room and the rest of the building.

B. Locate so that access to Work Area from Clean Room is through Shower Room.

C. Separate Clean Room from the building by a sheet plastic flapped doorway.

D. Require workers to remove all street clothes in this room, dress in protective coveralls, and don respiratory protection equipment. Do not allow asbestos-contaminated items to enter this room. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

E. An existing room may be utilized as the Clean Room if it is suitably located and of a configuration whereby workers may enter the Clean Room directly from the Shower Room. Protect all surfaces of room with sheet plastic as set forth in Section 01526 Temporary Enclosures. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction. Submit written request in accordance with Section 01632 "Product Substitutions" detailing layout and protective measures proposed.

F. Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.

G. Damp wipe all surfaces twice after each shift change with a disinfectant solution.

H. Provide posted information for all emergency phone numbers and procedures.

I. Provide a continuously adequate supply of disposable bath towels.

J. Provide 1 storage locker per employee. Equip room with benches and shelves and clean protective clothing, replacement filters for respirators, towels and other required protective equipment.

K. Provide a lockable door which may be secured during non-work hours.

L. Provide all other components indicated on the contract drawings.

3.1.3 Airlock: Provide an airlock between Shower Room and Clean Room. This is a transit area for workers.
SECTION 01563
DECONTAMINATION UNITS

A. Separate this room from Shower Room and Clean Room by sheet plastic flapped doorways.

B. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.

C. Separate this room from the Shower Room and Clean Rooms with airtight walls fabricated of 6 mil polyethylene.

3.1.4 Shower Room: Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Clean Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

A. Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.

B. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.

C. Separate this room from the Clean Room and Equipment Room0 with airtight walls fabricated of 6 mil polyethylene.

D. Provide splash proof entrances.

E. Provide shower head and controls.

F. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.

G. Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition. Provide liquid shampoo.

H. Arrange so that water from showering does not splash into the Clean or Equipment Rooms.

I. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the Work Area.

J. Pump waste water to drain. Provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan.

K. Provide hose bib.

3.1.5 Airlock: Provide an airlock between Shower Room and Equipment Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic flap doorway.
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DECONTAMINATION UNITS

A. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.

B. Separate this room from the Equipment Room and Shower Room with airtight walls fabricated of 6 mil polyethylene.

C. Separate from Equipment Room by a sheet plastic flapped doorway.

3.1.6 Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers.

A. Separate this room from the Work Area by a 6 mil polyethylene flapped doorway.

B. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.

C. Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6 mil polyethylene.

D. Provide a container for collection of used protective clothing.

3.1.7 Work Area: Separate Work Area from the Equipment Room by polyethylene barriers. If the airborne asbestos level in the Work Area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment Room and the Work Area. Damp wipe clean all surfaces after each shift change.

3.1.8 Decontamination Sequence: Require that all workers adhere to the following sequence when entering or leaving the Work Area.

3.1.9 Entering Work Area: Worker enters Clean Room and removes street clothing, puts on protective overalls and respirator, and passes through the Shower Room into the Equipment Room.

A. Any additional clothing and equipment left in Equipment Room needed by the worker are put on in the Equipment Room.

B. Worker proceeds to Work Area.

3.1.10 Exiting Work Area

A. Before leaving the Work Area, require the worker to remove all gross contamination and debris from overalls and feet.

B. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment.

C. Extra work clothing such as boots, hard hats, goggles, and gloves are to be stored in contaminated end of the Equipment Room.

D. Disposable coveralls are placed in a bag for disposal with other material.
SECTION 01563

DECONTAMINATION UNITS

E. Require that Decontamination procedures found in Section 01560 be followed by all individuals leaving the Work Area.

F. After showering, the worker moves to the Clean Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.2 EQUIPMENT DECONTAMINATION UNIT

3.2.1 Provide an Equipment Decontamination Unit consisting of a serial arrangement of rooms, Clean Room, Holding Room, Wash Room for removal of equipment and material from Work Area. Do not allow personnel to enter or exit Work Area through Equipment Decontamination Unit. Arrange as follows:

3.2.2 Wash Down Station: Provide an enclosed Shower Unit located in Work Area just outside Wash Room as an equipment, bag and container cleaning station. Metal waste from containment may be washed in wash down station. If there is a discrepancy on any debris remaining on the metal there will be samples collected at the contractor's expense and submitted to a certified laboratory.

3.2.3 Wash Room: Provide wash room for cleaning of bagged or containerized asbestos-containing waste materials passed from the Work Area.

A. Construct wash room of wood framing of appropriate sized lumber and polyethylene sheeting, at least 6 mil in thickness and located so that packaged materials, after being wiped clean, can be passed to the Holding Room.

B. Separate this room from the Work Area by a single flapped door of 6 mil polyethylene sheeting.

C. Provide a drop cloth layer of plastic on floor in the Wash Room for every load-out operation. Roll this drop cloth layer of plastic from Wash Room into Work Area after each load-out. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

D. Pump waste water to drain. Provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan.

3.2.4 Airlock: Provide an airlock between Wash Room and Holding Room. This is a transit area.

A. Separate this room from adjacent spaces by a sheet plastic flapped doorway.

B. Separate this room from the rest of the building and adjacent spaces with airtight walls fabricated of 6 mil polyethylene.

3.2.5 Clean Room: Provide Clean Room to isolate the Holding Room from the building exterior. If possible locate to provide direct access to the Holding Room from the building exterior.
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A. Erect Critical and Primary Barriers as described in Section 01526 "Temporary Enclosures" in an existing space. If no space exists construct Clean Room of wood framing of appropriate size and polyethylene sheeting, at least 6 mil in thickness.

A.(1) Separate this room from the exterior by a single flap door of 6 mil polyethylene sheeting.

3.2.6 Load-out Area

A. The load-out area is the transfer area from the building to a truck or dumpster. It may be the Clean Room of the Equipment Decontamination unit or a separate room or loading dock area. Erect Critical and Primary barriers as described in Section 01526 "Temporary Enclosures" in load-out area.

B. During transfer of material from load-out area erect primary barriers as described in Section 01526 "Temporary Enclosures" as necessary to seal path from load-out area to truck or dumpster.

C. Provide a lockable door to secure the work area during non-work hours.

3.2.7 Decontamination Sequence: Take all equipment or material from the Work Area through the Equipment Decontamination Unit according to the following procedure:

A. At wash down station, thoroughly wet clean contaminated equipment or sealed polyethylene bags and pass into Wash Room.

B. When passing equipment or containers into the Wash Room, close all doorways of the Equipment Decontamination Unit, other than the doorway between the Wash down Station and the Wash Room. Keep all outside personnel clear of the Equipment Decontamination Unit.

C. Once inside the washroom, wet clean the bags and/or equipment.

D. When cleaning is complete pass items into Holding Room. Close all doorways except the doorway between the Holding room and the Clean Room.

E. Workers from the building exterior enter Holding Area and remove decontaminated equipment and/or containers for disposal.

F. Require these workers to wear full protective clothing and appropriate respiratory protection.

G. At no time is a worker from an uncontaminated area to enter the enclosure when a removal worker is inside.

3.3 CONSTRUCTION OF THE DECONTAMINATION UNITS

3.3.1 Walls and Ceiling: Construct airtight walls and ceiling using polyethylene sheeting, at least 6 mil in thickness. Attach to existing building components or a temporary framework.
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3.3.2 Floors: Use 2 layers (minimum) of 6 mil polyethylene sheeting to cover floors in all areas of the Decontamination Units. Use only clear plastic to cover floors.

3.3.3 Flap Doors: Fabricated from three (3) overlapping sheets with openings a minimum of three feet (3’) wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6’) between entrance and exit of any room. Provide a minimum of three feet (3’) between doors to airlocks, if applicable.

3.3.4 If the Decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4 inch hardboard or 1/2 inch plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness covering the top of the "ceiling".

3.3.5 Visual Barrier: Where the Decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the Decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs covered with minimum 1/4 inch thick hardboard or 1/2 inch plywood. Where the solid barrier is provided, sheeting need not be opaque.

3.3.6 Alternate methods of providing Decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.

3.3.7 Electrical: Provide sub-panel at Clean Room to accommodate all removal equipment. Connect all electrical branch circuits in Decontamination unit and particularly any pumps in shower room to a ground-fault circuit protection device.

3.4 CLEANING OF DECONTAMINATION UNITS

3.4.1 Clean debris and residue from inside of Decontamination Units on a daily basis or as otherwise indicated on Contract Drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

3.4.2 If the Clean Room of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire Decontamination Unit and erect a new Decontamination Unit. Use the former Clean Room as an inner section of the new Equipment Room.

3.5 MAINTENANCE OF DECONTAMINATION UNITS

3.5.1 Inspect all seals and doorways prior to each work shift and as indicated by conditions throughout removal. Repair immediately if necessary. Clean and dry decontamination units at the end of each work shift.

3.6 SIGNS
3.6.1 Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

3.7 LEGEND

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED
IN THIS AREA

3.7.1 Provide spacing between respective lines at least equal to the height of the respective upper line.

3.7.2 Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

LEGEND
NO FOOD, BEVERAGES OR TOBACCO PERMITTED 3/4" Block
ALL PERSONS SHALL DON PROTECTIVE CLOTHING (COVERINGS) BEFORE ENTERING THE WORK AREA
ALL PERSONS SHALL SHOWER IMMEDIATELY AFTER LEAVING WORK AREA AND BEFORE ENTERING THE CHANGING AREA

3.7.3 Post Work Area emergency procedures

END OF SECTION - 01563
1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the project.

1.2.2 The Contractor's Construction Schedule and the Schedule of Submittals are included under Section 01301 "Submittals."

1.2.3 Standards: Refer to Section 01091 "Definitions and Standards" for applicability of industry standards to products specified.

1.2.4 Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section 01632 "Product Substitutions."

1.3 DEFINITIONS

1.3.1 Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.

1.3.2 "Products" are items purchased for use in performing the Work or for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.

1.3.3 "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturers published product literature, which is current as of the date of the Contract Documents.

1.3.4 "Materials" are products that are substantially shaped; cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

1.3.5 "Equipment" is products that may be either operational or fixed.

1.3.6 Operational Equipment are products with operating parts, whether motorized or manually operated, that require temporary or permanent service connections, such as wiring or piping.

1.3.7 Fixed Equipment is products necessary for accomplishing the work that are used as a temporary facility during the work and removed afterward.

1.4 SUBMITTALS
SECTION 01601

MATERIALS AND EQUIPMENT-ASBESTOS ABATEMENT

1.4.1 **Required submittals:** A general listing of products requiring submittals is included at the end of Section 01301 “Submittals.” This listing may not be complete. Submittal requirements are found in each specification section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.

1.4.2 **Product List Schedule:** Prepare a schedule showing products specified in a tabular form acceptable to the Owner's Representative. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.

1.4.3 **Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.**

1.4.4 **Form:** Prepare the product listing schedule with information on each item tabulated under the following column headings:

   A. Related Specification Section number.
   B. Generic name used in Contract Documents.
   C. Proprietary name, model number and similar designations.
   D. Manufacturer's name and address.
   E. Supplier's name and address.
   F. Installer's name and address.
   G. Projected delivery date, or time span of delivery period.

1.4.5 **Owner's Representative's Action**

   A. The Owner's Representative will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Owner's Representative's response will include the following:

   B. A list of unacceptable product selections, containing a brief explanation for this action.

1.5 **QUALITY ASSURANCE**

1.5.1 **Compatibility of Options:** When the Contractor is given the option of selecting between two or more products for use on the project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 **PRODUCT DELIVERY, STORAGE, AND HANDLING**
SECTION 01601
MATERIALS AND EQUIPMENT-ASBESTOS ABATEMENT

1.6.1 Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

A. Schedule delivery to minimize long-term storage at the site and overcrowding of construction spaces.

B. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

C. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

D. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

E. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

F. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

G. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

2 PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

2.1.1 General Product Requirements: Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect. Products must comply with the Contract Documents, be undamaged and, unless otherwise indicated, be unused at the time of installation.

2.1.2 Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

2.1.3 Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous project experience. Procedures governing product selection include the following:

2.1.4 Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
2.1.5 **Performance Specification Requirements:** Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

A. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

2.1.6 **Compliance with Standards, Codes and Regulations:** Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

3 **PART 3 - EXECUTION**

3.1 **INSTALLATION OF PRODUCTS**

Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated.

END OF SECTION - 01601
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

1.2.2 Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

1.2.3 Procedural requirements governing the Contractor's selection of products and product options are included under Section "Materials and Equipment."

1.3 DEFINITIONS

1.3.1 Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

1.3.2 Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions". The following are not considered substitutions:

A. Substitutions requested by Bidders during the bidding period and accepted prior to award of Contract are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.

B. Revisions to Contract Documents requested by the Owner or Owner's Representative.

C. Specified options of products and construction methods included in Contract Documents.

D. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

1.4.1 Substitution Request Submittal: Requests for substitution will be considered if received within five days prior to beginning work affected by the substitution. Requests received less than five days weeks before commencement of affected Work may be considered or rejected at the discretion of the Owner's Representative.
SECTION 01632

PRODUCT SUBSTITUTIONS-ASBESTOS ABATEMENT

A. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.

B. Identify the product, or the fabrication or installation method to be replaced in each request. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

C. Product Data, including Drawings and descriptions of products, fabrication, installation procedures, and manufacturer's instructions for use

D. Samples, where applicable or requested

E. A detailed comparison of significant qualities of the proposed substitution with those of the work specified; significant qualities may include elements such as size, weight, durability, performance and visual effect

F. Coordination information, including a list of changes or modifications needed for other parts of the work and for construction performed by the Owner and separate contractors that will become necessary to accommodate the proposed substitution

G. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution, and an indication of the effect of the proposed substitution on overall Contract Time.

H. Cost information, including a proposal of the net change, if any in the Contract Sum.

I. Certification by the Contractor that the substitution proposed is in every significant respect equal to or better than that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

1.4.2 Owner's Representative's Action: Within one week of receipt of the request for substitution, the Owner's Representative will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Owner's Representative will notify the Contractor of acceptance or rejection of the proposed substitution. Acceptance will be in the form of a Change Order.

2 PART 2 - PRODUCTS

2.1 SUBSTITUTIONS
SECTION 01632

PRODUCT SUBSTITUTIONS-ASBESTOS ABATEMENT

2.1.1 Conditions: The Contractor's substitution request will be received and considered by the Owner's Representative when one or more of the following conditions are satisfied, as determined by the Owner's Representative; otherwise requests will be returned without action except to record noncompliance with these requirements.

A. Extensive revisions to Contract Documents are not required.

B. Proposed changes are in keeping with the general intent of Contract Documents.

C. The request is timely, fully documented, and properly submitted.

D. The specified equipment, product or method of construction cannot be provided within the Contract Time. The request will not be considered if the equipment, product or method cannot be provided as a result of failure to pursue the work promptly or coordinate activities properly.

E. The specified equipment, product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

F. A substantial advantage is offered the Owner, in terms of safety, cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Owner's Representative for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.

G. The specified equipment, product or method of construction cannot be provided in a manner that is compatible with other materials, and the Contractor certifies that the substitution will overcome the incompatibility.

H. The specified equipment, product or method of construction cannot be coordinated with other materials, and the Contractor certifies that the proposed substitution can be coordinated.

I. The specified equipment, product or method of construction cannot provide a warranty required by the Contract Documents and the Contractor certifies that the proposed substitution provides the required warranty.

2.1.2 The Contractor's submittal and Owner's Representative's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

3 PART 3 - EXECUTION (Not Applicable.)

END OF SECTION - 01632
SECTION 01701

PROJECT CLOSEOUT-ASBESTOS ABATEMENT

1    PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY

1.2.1 This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
   A. Inspection procedures.
   B. Project record document submittal.
   C. Submittal of warranties.
   D. Final cleaning.

1.3 DESCRIPTION OF REQUIREMENTS

1.3.1 Definitions: Project closeout is the term used to describe certain collective project requirements, indicating completion of the Work, that are to be fulfilled near the end of the Contract time in preparation for final acceptance and occupancy of the Work by the Owner, as well as final payment to the Contractor and the normal termination of the Contract.

   A. Specific requirements for individual units of work are included in the appropriate sections in Divisions 2 through 16.

   B. Time of closeout is directly related to "Substantial Completion"; therefore, the time of closeout may be either a single time period for the entire Work or a series of time periods for individual elements of the Work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this section.

1.4 PREREQUISITES TO SUBSTANTIAL COMPLETION

1.4.1 General: Complete the following before requesting the Owner's Representative to inspect for certification of substantial completion, either for the entire Work or for portions of the Work. Include list of known exceptions.

   A. In the progress payment request that coincides with, or is the first request following, the date completion is claimed, show either 100% completion for the portion of the Work claimed as "complete", or list incomplete items, the value of incomplete work, and reasons for the Work being incomplete.

   B. Include supporting documentation for completion as indicated in these contract documents.
SECTION 01701

PROJECT CLOSEOUT-ASBESTOS ABATEMENT

C. Submit a statement showing an accounting of changes to the Contract Sum.

D. Advise Owner of pending insurance change-over requirements.

E. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.

F. Obtain and submit releases enabling Owner's full, unrestricted use of the Work and access to services and utilities. Where required, include occupancy permits, operating certificates and similar releases.

G. Submit record drawings, maintenance manuals, damage or settlement survey, and similar final record information.

H. Complete final cleaning up requirements, including touch-up painting of marred surfaces.

I. Touch-up and otherwise repair and restore any damages to finishes, floors, walls, or any other item or fixture which is the result of Contractor's actions.

1.4.2 Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner's Representative will either proceed with inspection or advise Contractor of unfulfilled prerequisites.

A. Following initial inspection, Owner's Representative will either prepare the certificate of substantial completion, or will advise Contractor of work which must be performed before the certificate will be issued. The Owner's Representative will repeat the inspection when requested and when assured that the Work has been substantially completed.

B. Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.5 PREREQUISITES TO FINAL ACCEPTANCE

1.5.1 General: Complete the following before requesting the Owner's Representative's final inspection for certification of final acceptance, and final payment as required by the General Conditions. List known exceptions, if any, in request:

A. Submit the final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

B. Submit an updated final statement, accounting for final additional changes to the Contract Sum.

C. Submit a certified copy of the Owner's Representatives final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner's Representative and Owner.
D. Submit consent of surety.

1.5.2 Re-inspection Procedure: The Owner's Representative will re-inspect the Work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed, except for those items whose completion has been delayed because of circumstances that are acceptable to the Owner's Representative.

A. Upon completion of re-inspection, the Owner's Representative will either prepare a certificate of final acceptance, or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.

B. If necessary, the re-inspection procedure will be repeated at the expense of the contractor.

1.6 RECORD DOCUMENT SUBMITTALS

1.6.1 General: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the General Conditions. General submittal requirements are indicated in "submittals" sections.

A. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Owner's Representative's reference during normal working hours.

1.6.2 Record Drawings: Maintain a record set of blue or black line white-prints of contract drawings and shop drawings in a clean, undamaged condition. Mark-up the set of record documents to show the actual installation where the installed work varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing the actual "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at the corresponding location on the working drawings. Give particular attention to concealed work that would be difficult to measure and record at a later date.

A. Mark record sets with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work.

B. Mark-up new information which is known to be important to the Owner, but for some reason was not shown on either contract drawings or shop drawings.

C. Note related change-order number where applicable.

D. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on cover of each set.

1.6.3 Record Product Data: Maintain one copy of each product data submittal. Mark these documents to show significant variations in the actual Work performed in comparison with the submitted information. Include both variations in the products
as delivered to the site, and variations from the manufacturer's instructions and recommendations for installation. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned at a later date by direct observation. Note related change orders and mark-up of record drawings and specifications.

A. Upon Completion of mark-up, submit complete set of record product data to the Owner's Representative for the Owner's records.

1.6.4 Record Sample Submittal: Immediately prior to date or dates of substantial completion, the Contractor will meet at the site with the Owner's Representative and the Owner's personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the Work, are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.

1.6.5 Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with the actual performance of the Work. Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

2 PART 2 - PRODUCTS (Not Applicable.)

3 PART 3 - EXECUTION

3.1 FINAL CLEANING

3.1.1 General: Special cleaning requirements for specific units of Work are included in the appropriate sections of Division 2 through 16. General Cleaning during the regular progress of the Work is required by the General Conditions and is included under section "Temporary Facilities".

3.1.2 Cleaning: Provide final cleaning of the Work at the time indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to the condition expected from a normal, commercial building cleaning and maintenance program.

A. Clean light fixtures and lamps which have been affected by the work so as to function with full efficiency. Replace lamps where inoperable.

3.1.3 Removal of Protection: Except as otherwise indicated or requested by the Owner's Representative's, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

3.1.4 Compliances: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

1.2.1 General: Decontamination of the Work Area following asbestos abatement.

A. If the asbestos abatement work is on damaged or friable materials the work procedure uses two cleanings of the primary barrier plastic prior to its removal and one cleaning of the room surfaces to remove any new or existing contamination. Unless specifically indicated otherwise all materials are considered damaged or friable for purposes of this section. If the asbestos abatement work is on undamaged and non-friable materials, then the work procedures uses one cleaning of the primary barrier plastic and one cleaning of the room surfaces to remove any new or existing contamination. In both cases operation of the negative pressure system is used to remove airborne fibers generated by the abatement work.

1.3 RELATED WORK SPECIFIED ELSEWHERE

1.3.1 Removal of Gross Debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:

A. Section 02081 Removal of Asbestos-Containing Materials
B. Section 02082 Removal of Asbestos-Contaminated Soil
C. Section 09805 Encapsulation of Asbestos-Containing Materials

1.3.2 Work Area Clearance: Air testing and other requirements which must be met before release of Contractor and re-occupancy of the work area are specified in Section 01714 Work Area Clearance.

PART 2 - PRODUCTS (Not Applicable.)

PART 3 - EXECUTION

3.1 GENERAL

3.1.1 Work of This Section includes the decontamination of air in the Work Area which has been, or may have been, contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos-containing materials in the space.

3.1.2 Work of This Section includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:
SECTION 01711

PROJECT DECONTAMINATION

A. Primary and Critical Barriers erected by work of Section 01526
B. Decontamination Unit erected by work of Section 01563
C. Negative Pressure System installed by work of Section 01513

3.2 START OF WORK

3.2.1 Previous Work: During completion of the asbestos abatement work specified in other sections, the Secondary Barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.

3.2.2 Start of Work: Work of this section begins with the cleaning of the Primary Barrier. At start of work the following will be in place:

A. Primary Barrier: Two layers of polyethylene sheeting on floor and two layers on walls.
B. Critical Barrier: An airtight barrier between the Work Area and other portions of the building or the outside.
C. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.
D. Decontamination Units: For personnel and equipment in operating condition.
E. Negative Pressure System: In operation.

3.3 WORK SEQUENCE

3.3.1 The work shall be carried out in the sequence as listed below.

3.4 FIRST CLEANING

3.4.1 Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

3.5 VISUAL INSPECTION

3.5.1 Conduct visual inspection per ASTM guideline E-1368-90 and reclean as necessary. When visual inspection is passed, Phase I air monitoring may be performed after a 12 hour waiting period.

A. After Final Cleaning Perform a Complete Visual Inspection of the entire Work Area per ASTM guideline E-1368-90, including: all surfaces, ceiling, walls, floor, decontamination unit, all plastic sheeting, seals over ventilation
openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. Visual inspection is not complete until confirmed in writing, on the certification, by Project Administrator.

B. **Temporary lighting**: Provide adequate lighting for visual inspection of all surfaces in the areas to be subjected to visual inspection.

C. **Lifts**: Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

D. **Wait 12 Hours** to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain negative pressure system in operation for the entire 12 hour period.

3.6 **PHASE I PCM PRE-CLEARANCE AIR SAMPLING**

3.6.1 After the work area has been found visually clean, air samples will be taken and analyzed in accordance with the procedure for Phase Contrast Microscopy set forth in Section 01714 Work Area Clearance:

A. If Release Criteria are not met, repeat First Cleaning and continue decontamination procedure from that point.

B. If Release Criteria are met continue cleaning and clearance procedures as given below.

3.7 **REMOVAL OF PRIMARY BARRIER(S)**

3.7.1 After the work area has passed the Phase I Clearance:

A. Remove the material contamination unit if there is one and all Primary Barrier sheeting, except for any remaining layer over flooring finish material, equipment and/or supplies previously excluded from the work area.

B. Remove the primary barrier(s)

C. Leave the critical barrier(s): Which form the sole barrier between the Work Area and other portions of the building or the outside.

D. Leave the Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.

E. Leave the Decontamination Unit: For personnel, in operating condition.

F. Leave the negative pressure system and maintain in continuous operation.

3.8 **FINAL CLEANING**
SECTION 01711
PROJECT DECONTAMINATION

3.8.1 Final cleaning: Clean all surfaces in the work area in the same manner as the first cleaning immediately after removal of Primary plastic. This cleaning is now being applied to existing room surfaces and critical barriers. Take care to avoid water marks or other damage to surfaces.

A. At the completion of the above cleaning visually inspect all surfaces. Reclean if any dust, debris, etc. is found.

3.8.2 Cleaning Carpeting: At the completion of cleaning of all surfaces except carpeting, remove barrier over carpeting and HEPA vacuum carpeting designated to remain in Work Areas using a floor cleaning attachment adjusted so that rubber skirting is in contact with carpet surface. Use a passive (non-power brush type) floor attachment with rubber floor seals and adjustable above-floor height. Completely clean carpeting in one direction with each pass of the floor attachment overlapping the previous pass by one-half the attachment width. At the completion of one such cleaning, vacuum clean in the same manner in a direction at right angles to the initial cleaning.

3.9 ENCAPSULATION

3.9.1 Encapsulation of substrate: Perform encapsulation of substrate or installation of spray-applied finishes or fireproofing, where required, at this time. Maintain negative pressure system in operation during encapsulation work. Perform work only after meeting the following requirements:

A. Surfaces to be covered have met the requirements for a visual inspection in this section.

B. Airborne fiber counts in the Work Area are at or below 0.01 fibers per cubic centimeter as measured by phase contrast microscopy.

3.9.2 Wait until encapsulant is dry: not more than 24 hours. Maintain negative pressure system in operation for the entire waiting period.

3.10 FINAL AIR SAMPLING PCM

3.10.1 Phase Contrast Microscopy (PCM): After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedure for Phase Contrast Microscopy set forth in Section 01714 Work Area Clearance:

A. If Release Criteria are not met, repeat Final Cleaning and continue Decontamination Procedure from that point.

B. If Release Criteria are met, proceed to work of this Section on Removal of Work Area Isolation.

3.11 REMOVAL OF WORK AREA ISOLATION

3.11.1 After all requirements of this section and Section 01714 Work Area Clearance have been met:

A. Remove the Critical Barriers separating the Work Area from the rest of the building.
SECTION 01711

PROJECT DECONTAMINATION

B. HEPA vacuum carpeting designated to remain in work areas using a floor cleaning attachment adjusted so that rubber skirting is in contact with carpet surface. Use a passive (non power brush type) floor attachment with rubber floor seals and adjustable above-floor height. Completely clean carpeting in one direction with each pass of the floor attachment overlapping the previous pass by one-half the attachment width. At the completion of one such cleaning, vacuum clean in the same manner in a direction at right angles to the initial cleaning.

3.11.2 Shut down and remove the negative pressure system: Seal HEPA filtered fan units, HEPA vacuums and similar equipment with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from Work Area.

3.11.3 Remove Personnel Decontamination Unit

A. Remove any small quantities of residual material found with wet wiping, HEPA filtered vacuum cleaners and local area protection. If significant quantities, as determined by the Owner's Representative, are found then the entire area affected shall be decontaminated as specified in Section 01712 Cleaning & Decontamination Procedures.

B. Remove all equipment, materials, debris from the work site.

C. Dispose of all asbestos-containing waste material as specified in Section 02084 Disposal of Asbestos Containing Waste Material.

3.12 CERTIFICATE OF VISUAL INSPECTION

3.12.1 Following this section is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Project Administrator. Submit completed Certificate with Application for Final Payment. Final payment will not be made until this Certificate is executed.

3.13 SUBSTANTIAL COMPLETION OF ABATEMENT WORK

3.13.1 Asbestos Abatement Work is Substantially Complete upon meeting the requirements of this section and Section 01714 Work Area Clearance, including submission of:

A. Certificate of Visual Inspection

B. Receipts documenting proper disposal as required by Section 02084 Disposal of Asbestos-Containing Waste Material

C. Punch list detailing repairs to be made and incomplete items.

END OF SECTION - 01711
CERTIFICATE OF VISUAL INSPECTION

BUILDING NAME/NUMBER:

CONTAINMENT AREA DESCRIPTION:

In accordance with Section 01711 "Project Decontamination" the Contractor hereby certifies that he has visually inspected the Work Area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris or residue.

By: ___________________________ Date: ___________________________
   (SIGNATURE)

   (PRINT NAME)

   (PRINT TITLE)

PROJECT ADMINISTRATOR CERTIFICATION

The Project Administrator hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

By: ___________________________ Date: ___________________________
   (SIGNATURE)

   (PRINT NAME)

   (PRINT TITLE)
SECTION 01712
CLEANING & DECONTAMINATION PROCEDURES

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK

1.2.1 Cleaning and decontamination is to be performed in all work areas.

1.3 RELATED WORK SPECIFIED ELSEWHERE

1.3.1 Work Area Clearance: Specified in Section 01714 Work Area Clearance

2 PART 2 - PRODUCTS (Not Applicable.)

3 PART 3 - EXECUTION

3.1 GENERAL

3.1.1 Complete the following before start of work of this section:

01503 - Temporary Facilities
01513 - Negative Pressure and Air Circulation System
01562 - Respiratory Protection
01526 - Temporary Enclosures
01560 - Worker Protection - Asbestos Abatement
01563 - Decontamination Units

3.2 WET CLEANING

3.2.1 Accomplish wet cleaning during decontamination with paper towels or disposable rags and amended water. Change water frequently.

3.2.2 Material adhered to a surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning.

3.3 REMOVAL OF ASBESTOS-CONTAINING DEBRIS

3.3.1 Remove asbestos-containing debris and decontaminate the area involved using the following sequence:

3.3.2 Pick up large pieces of debris and place in the bottom of a 6 mil polyethylene disposal bag conforming to the requirements of Section 02084 Disposal of Asbestos-Containing Waste Material. Place pieces in the bag without dropping and avoiding unnecessary disturbance and release of material.

3.3.3 Remove all small debris with the HEPA vacuum.

3.3.4 HEPA vacuum ladder and/or any tools used and pass out of the work area.
SECTION 01712

CLEANING & DECONTAMINATION PROCEDURES

3.3.5 HEPA vacuum all surfaces in the room starting at the top of wall and working downward to the floor. Then start at corner of floor farthest from Work Area entrance and work towards entrance.

3.3.6 HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16" of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one-half the width of the floor attachment. At the completion of one cleaning vacuum the floor a second time at right angles to the first.

3.4 CLEANING AND DECONTAMINATING OBJECTS

3.4.1 HEPA vacuum all surfaces of object and immediate area before moving the object.

3.4.2 Pick up object, if possible, and HEPA vacuum all surfaces.

3.4.3 Wet clean object, if possible, and place in storage location.

3.4.4 Decontaminate area where object was located by HEPA vacuuming twice, in two perpendicular directions. Wet clean if necessary to remove any debris.

3.4.5 Return object to its original location.

3.5 DECONTAMINATION OF ROOMS

3.5.1 HEPA vacuum all surfaces in the room starting at the ceiling, then top of wall and working downward to the floor.

3.5.2 HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16" of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.

3.5.3 Operate HEPA filtered fan unit in space for 12 hours minimum.

3.5.4 At completion of Decontamination Work workers decontaminate in accordance with Section 01560 Worker Protection - Asbestos Abatement.

3.5.5 Secure area from occupancy until air monitoring results per Section 01714 Work Area Clearance indicates area is safe for re-occupancy.

END OF SECTION - 01712
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.

1.1.2 Visual Inspection: Required as a prerequisite of air testing, is set forth in Section 01711 Project Decontamination.

1.1.3 Air Monitoring: Performed by the Owner during abatement work, is described in Section 01410 Test Laboratory Services.

1.2 SUMMARY

1.2.1 Not in Contract Sum: This section describes work being performed by the Owner. This work is not in the Contract Sum.

1.2.2 This Section sets forth required post-abatement airborne asbestos concentrations in the Work Area and describes testing procedures the Owner will use to measure these levels.

1.3 CONTRACTOR RELEASE CRITERIA

1.3.1 The Asbestos Abatement Work Area is Cleared when the Work Area is visually clean and airborne asbestos structure concentrations have been reduced to the level specified below.

1.4 VISUAL INSPECTION

1.4.1 Work of this Section will not begin until the visual inspection described in Section 01711 Project Decontamination is complete and has been certified by the Project Administrator.

1.5 AIR MONITORING

1.5.1 To determine if the elevated airborne asbestos structure concentration encountered during abatement operations has been reduced to the specified level, the Owner will secure samples and analyze them according to the following aggressive sampling procedures.

1.6 AGGRESSIVE SAMPLING

1.6.1 All Air Samples will be taken using aggressive sampling techniques as follows:

1.6.2 Before sampling pumps are started the exhaust from forced-air equipment (leaf blower with an approximately 1 horsepower electric motor) will be swept against all walls, ceilings, floors, ledges and other surfaces in the room. This procedure will be continued for 5 minutes per 10,000 cubic feet of room volume.
1.6.3 One 20 inch diameter fan per 10,000 cubic feet of room volume will be mounted in a central location at approximately 2 meters above floor, directed toward ceiling and operated at low speed for the entire period of sample collection.

1.6.4 Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors of vents.

1.6.5 After air sampling pumps have been shut off, fans will be shut off.

1.7 SCHEDULE OF AIR SAMPLES

1.7.1 General: The number and volume of air samples taken and analytical methods used by the Owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

1.8 PHASE CONTRAST MICROSCOPY

1.8.1 In each homogeneous Work Area (over 1,000 square feet Plan Area) after completion of all cleaning work, a minimum of 7 samples will be taken and analyzed as follows:

1.8.2 Samples will be collected on 25 mm. cassettes with the following filter media:

A. PCM: 0.8 mixed cellulose ester in a cassette with a 50 mm. conductive extension cowl.

B. Number of PCM samples will be as follows:

<table>
<thead>
<tr>
<th>Location Sampled</th>
<th>Number of Samples</th>
<th>Minimum Volume</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>(Liters)</td>
<td>LPM</td>
</tr>
<tr>
<td>Each Work Area</td>
<td>5</td>
<td>1800</td>
<td>1-10*</td>
</tr>
<tr>
<td>OR</td>
<td>OR</td>
<td>1800</td>
<td>1-10*</td>
</tr>
<tr>
<td>Each Room of Work Area</td>
<td>1 sample for each room of work area (minimum of 5 samples for all rooms is required) and 1 sample for each extra 5000 square feet</td>
<td>1800</td>
<td>1-10*</td>
</tr>
<tr>
<td>Field Blank</td>
<td>2</td>
<td>N/A</td>
<td>Leave open in a sealed plastic bag or other clean container for duration of sampling</td>
</tr>
</tbody>
</table>

1.8.3 Analysis: Fibers on each filter will be measured using the most recent revision of NIOSH Method 7400.

1.8.4 Fibers: referred to in this section include fibers regardless of composition as counted by the phase contrast microscopy method used.
1.8.5 **Release Criteria:** Decontamination of the work site is complete when every Work Area sample is at or below the Lower Limit of Quantitation above. If any sample is above this limit then the decontamination is incomplete and re-cleaning per section 01711 Project Decontamination is required.

1.9 **LABORATORY TESTING**

1.9.1 **PHASE CONTRAST MICROSCOPY**

1.9.2 The services of a testing laboratory will be employed by the Owner to perform laboratory analysis of the air samples. A microscope and technician will be set up at the job site, so that verbal reports on air samples can be obtained within 2-4 hours. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner's Representative, the Owner, and the Contractor.

1.10 **TRANSMISSION ELECTRON MICROSCOPY**

1.10.1 Samples will be sent by overnight courier for analysis by Transmission Electron Microscopy. Samples may not be carried on weekends, so that samples shipped on Friday would arrive on the following Monday. Verbal results will normally be available within five (5) working days after receipt of samples by the laboratory. All Transmission Electron Microscopy results will be available to the Contractor.

A. With bid, submit unit cost for each day of waiting beyond that set forth in the paragraph above.

1.11 **RE-SAMPLING**

1.11.1 If, for any reason, the Final Air Clearance Samples do not meet the minimum clearance requirements, re-cleaning and re-sampling must be accomplished. The additional cost of re-sampling and re-analysis will be taken on by the Removal Contractor and the method of sampling and analysis will be the same as that used for the first set of samples.

END OF SECTION - 01714
SECTION 02081

REMOVAL OF ASBESTOS CONTAINING MATERIALS

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

1.2.1 Installation of Critical and Primary Barriers, and Work Area Isolation Procedures are set forth in Section 01526 Temporary Enclosures.

1.2.2 Project Decontamination procedures after removal of the Secondary Barrier are specified in Section 01711 Project Decontamination.

1.2.3 Disposal of asbestos-containing waste is specified in Section 02084 Disposal of Asbestos-Containing Waste Material.

1.3 SUBMITTALS

1.3.1 Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use.

1.3.2 Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.

1.3.3 Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.

1.3.4 NESHAP Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet Asbestos-Containing Materials to which it is applied as required by the National Emission Standard for Hazardous Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).

1.3.5 Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material and solvent proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

1.3.6 Glove-bags: Submit product data.

1.3.7 Mini-Enclosures: Submit sketch of mini-enclosure arrangement to be used.

2 PART 2 - PRODUCTS

2.1 WETTING MATERIALS
REMOVAL OF ASBESTOS CONTAINING MATERIALS

2.1.1 For wetting prior to disturbance of Asbestos-Containing Materials use either amended water or a removal encapsulant:

2.1.2 Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the Asbestos-Containing Material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

2.1.3 Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of Asbestos-Containing Material. Use a material which results in wetting of the Asbestos-Containing Material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50% polyoxyethylene ester and 50% polyoxyethylene ether in five gallons of water.

2.2 DISPOSAL BAGS

2.2.1 Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Asbestos Containing Waste Material.

2.3 FIBERBOARD DRUMS

2.3.1 Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.

2.4 PAPER BOARD BOXES

2.4.1 Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

2.5 FELT

2.5.1 Standard felt approximately 1/16” thick and 36” to 72” in width.

2.6 GLOVEBAG

2.6.1 Constructed of a minimum of 6 mil thick plastic, seamless at the bottom, with two sealed inward projecting long sleeved gloves and equipped with a pouch for storage of tools and ports for sprayer wand and HEPA vacuum attachment.

3 PART 3 - EXECUTION

3.1 SECONDARY BARRIER

3.1.1 Secondary Barrier: Over the Primary Barrier, install as a drop cloth a clear 6 mil sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10'-0" of a wall extend the Secondary Barrier up wall to ceiling. Support sheet plastic on wall with duct tape, seal top of Secondary plastic to Primary Barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent its falling during removal operations.

3.2 WORKER PROTECTION
3.2.1 Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

### 3.3 WET REMOVAL (FULL-ENCLOSURE WORK AREA)

3.3.1 **Thoroughly wet** to satisfaction of Owner's Representative Asbestos-Containing Materials to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or use injection equipment to wet material under the covering. Where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.

3.3.2 **Mist work area** continuously with amended water whenever necessary to reduce airborne fiber levels.

3.3.3 **Remove saturated Asbestos-Containing Material** in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Evacuate air from disposal bags with a HEPA filtered vacuum cleaner before sealing. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to Wash Down Station adjacent to Material Decontamination Unit.

3.3.4 **Pipe Insulation**: Spray with a mist of amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate material to substrate. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cut bands holding preformed pipe insulation, slit jackets at seams, remove and hand-place in a disposal bag. Remove job-molded fitting insulation in chunks and hand place in a disposal bag. Do not drop to floor. Remove any residue on pipe or fitting with stiff bristle nylon hand brush. In locations where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, remove fibrous material 6" from the point where it contacts the asbestos-containing insulation.

### 3.4 GLOVEBAGS

3.4.1 Comply with all applicable OSHA Class I removal procedures, including supervision by a competent person as defined by the regulation, wet methods and use of HEPA filtered vacuums. At least **two** persons shall perform Class I glove-bag removals.

3.4.2 **Complete requirements** of the following:

   A. Section 01560 Worker Protection - Asbestos Abatement
   
   B. Section 01562 Respiratory Protection
3.4.3 Place polyethylene sheeting below the area where glove-bag work will be performed. Extend polyethylene one foot horizontally in all directions for each vertical foot the piping is above the floor.

3.4.4 Cordon off the work zone with barrier tape and post warning signs at entrances to work zone.

3.4.5 Before beginning operation, loose and friable material adjacent to the glove-bag/box shall be wrapped and sealed in two layers of 6 mil polyethylene sheeting or otherwise rendered intact.

3.4.6 Place necessary tools into pouch located inside glove bag. This will usually include: bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and pre-wetted cloth.

3.4.7 Install each glove-bag so that it completely covers the circumference of pipe or other structure where the work is to be done.

3.4.8 Use smoke tube and aspirator bulb to test seal. If leaks are found, tape closed using duct tape and re-test.

3.4.9 Insert wand from garden sprayer through water sleeve. Duct tape water sleeve tightly around the wand to prevent leakage.

3.4.10 Thoroughly wet material to be worked on with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.

3.4.11 One person places his hands into the long-sleeved gloves while the second person directs garden sprayer at the work.

3.4.12 Cut insulation at each end of the section to be removed. Spray amended water or removal encapsulant on the cutting area to keep dust to a minimum.

3.4.13 Remove insulation using putty knives or other tools. Place pieces in bottom of bag without dropping.

3.4.14 Rinse all tools with water inside the bag and place back into pouch.

3.4.15 Using scrub brush, rags and water, scrub and wipe down the exposed pipe. Remove water wand from water sleeve. Collapse the bag by evacuating air utilizing a HEPA vacuum.

3.4.16 Remove the vacuum nozzle, twist water sleeve closed and seal with duct tape.

3.4.17 Tool Pouch Removal: From outside the bag, pull the tool pouch away from the bag. Place duct tape over twisted portion and then cut the tool bag from the glove bag, cutting through the twisted/taped section. Contaminated tools may then be placed directly into next glove bag without cleaning or decontaminated and dried.

3.4.18 With removed insulation in the bottom of the bag, twist the bag several times and tape it to isolate the material in the bottom during removal of the glove bag from the pipe.

3.4.19 Place the used glove-bag in a 6 mil disposal bag.
SECTION 02081

REMOVAL OF ASBESTOS CONTAINING MATERIALS

3.4.20 Clean all surfaces in the Work Area using disposable cloths wetted with water with surfactant or removal encapsulant added.

3.4.21 Seal exposed ends of remaining pipe insulation.

3.4.22 Remove disposable suits and place these into bag with waste.

3.5 MINI-ENCLOSURES

3.5.1 A Mini-Enclosure consists of a small, walk-in Work Room with an attached separate Change Room. Worker decontamination requires a remote personnel decontamination unit.

3.5.2 Complete requirements of the following:

Section 01560 Worker Protection - Asbestos Abatement
Section 01562 Respiratory Protection

3.5.3 Sequence of Work: Before beginning work of this sub-section complete the following:

A. Comply with all applicable OSHA Class I removal procedures, including supervision by a competent person as defined by the regulation, wet removal methods, and use of HEPA filtered vacuums.

B. Construct a personnel decontamination unit in accordance with Section 01563 Decontamination Units.

C. Cordon off the work zone within which the mini-enclosure will be installed with barrier tape and post signs at all entrances.

D. Shut down HVAC system to the general area in which the mini-enclosure will be constructed or otherwise minimize air flow within the area.

3.5.4 Work Room: Utilize a prefabricated or construct Work Room in the same manner as a Primary Barrier fabricated from 6 mil sheet plastic. Line walls and floor of Work Room with a continuous Secondary Barrier.

3.5.5 Change Room: Provide an approximately 3'-0" by 3'-0" Change Room attached to Work Room. Fabricate Change Room from 6 mil sheet plastic in the same manner as a Primary Barrier. Locate so that access to Work Area is though Change Room.

3.5.6 Step Off Area: Cover floor in front of entry to Change Room with one layer of 6 mil sheet plastic. Securely anchor sheet plastic to prevent slipping.

3.5.7 Flapped Door Construction: Provide flapped door as entry to Change Room and entry from Change Room to Work Room. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side from duct tape on inside and outside of door.

3.5.8 Signage: At entry to Change Room post an approximately 20 inch by 14 inch manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926.1101:
REMOVAL OF ASBESTOS CONTAINING MATERIALS

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

A. Provide spacing between respective lines at least equal to the height of the respective upper line.

3.5.9 Entry to Work Room: Require that any time a worker enters the Work Room the following procedure is followed.

A. Outside of Change Room remove all street clothes and don clean coveralls and respirator. A swim suit or second disposable suit may be worn beneath outer coveralls.

B. Enter Change Room be sure that entry is completely closed.

C. Enter Work Room be sure that entry is completely closed.

3.5.10 Worker Decontamination: Require that any time a worker leaves the mini-Enclosure the following procedure be followed.

A. Maintain a bucket of clean potable water in the Change Room. Do not amend with a wetting agent.

B. Do not allow debris in work area to dry or accumulate. HEPA vacuum debris from floor prior to beginning exit procedures.

C. HEPA vacuum gross debris from disposable suit and foot coverings inside the Work Area. Leave respirator in place.

D. Proceed with respirator in place to Change Room.

E. Be sure that entry to Work Area is completely closed.

F. Wash hands, face and surface of respirator with water and wet paper towels. Use caution to avoid breaking seal between respirator face-piece and face.

G. In Change Room don clean disposable suit leaving respirator in place.

H. Exit change room, be sure that entry to Change Room is completely closed. Proceed to next Mini-Enclosure, or a remote shower.

I. At end of work day decontaminate fully in accordance with procedures in section "Worker Protection".

3.5.11 Material Decontamination: Require that the following procedure be used in removing equipment and bagged debris from the Work Room.

A. Worker in Work Room cleans equipment and bagged debris and hands one piece of equipment or one bag of debris at a time to worker in Change Room.
B. Worker in Change Room wet cleans each piece of equipment or bag. Equipment is sealed completely in 6 mil sheet plastic or bags in the Change Room and passed through the flapped door to the Step Off Area. Bagged waste is placed in a second clean disposal bag and passed to the Step Off Area. Ensure that only one of the two flapped doorways is open at any given time.

C. Each bag is immediately placed in a sealable cart for transport to the load out area. No bags are to be stored outside of the Mini-Enclosure.

D. All bags are to be transported through the building in clean sealed containers that have never been in a asbestos Work Area, Mini-Enclosure or decontamination unit.

3.5.12 Mini-Enclosure Decontamination: At completion of all work decontaminate the Work and Changing Rooms as set forth in Section 01711 Project Decontamination.

END OF SECTION - 02081
SECTION 02084
DISPOSAL OF ASBESTOS CONTAINING WASTE MATERIAL

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.

1.1.2 Section 01092 Codes and Regulations - Asbestos Abatement describes applicable federal, state and local regulations.

1.2 DESCRIPTION OF THE WORK

1.2.1 This section describes the disposal of Asbestos-Containing Materials. Disposal includes packaging of asbestos-containing waste materials. Disposal may be accomplished either by land filling or converting asbestos containing materials to non asbestos waste.

1.3 SUBMITTALS

1.3.1 Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's approval indicating that the submittal is returned for unrestricted use.

1.3.2 Copy of state or local license for waste hauler.

1.3.3 Name and address of landfill where asbestos-containing waste materials are to be buried. Include contact person and telephone number.

1.3.4 Submit copies of all manifests and disposal site receipts to Owner's Representative prior to project closeout.

2 PART 2 - PRODUCTS

2.1 DISPOSAL BAGS

2.1.1 Provide 6 mil thick leak-tight polyethylene bags labeled with three labels with text as follows:

2.2 FIRST LABEL

2.2.1 Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard with NESHAP additions:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS FIBERS IS HAZARDOUS TO YOUR HEALTH
OWNER NAME, CONTRACTOR NAME
LOCATION AT WHICH WASTE WAS GENERATED
SECTION 02084
DISPOSAL OF ASBESTOS CONTAINING WASTE MATERIAL

SECOND LABEL

2.2.2 Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances: Final Rule. Published November 21, 1986 and revised October 21, 1991:

RQ
ASBESTOS
NA 2212, III

3 PART 3 - EXECUTION

3.1 Comply with the following sections during all phases of this work:

3.1.1 Section 01560 Worker Protection - Asbestos Abatement
3.1.2 Section 01562 Respiratory Protection

3.2 GENERAL

3.2.1 All waste is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.

3.2.2 Seal asbestos waste in leak-proof impermeable containers labeled in accordance with Title 29, Code of Federal Regulations, Section 1910.1200 (f).

3.2.3 Protect interior of truck or dumpster with Critical and Primary Barriers as described in Section 01526 Temporary Enclosures.

3.2.4 Carefully load containerized waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material. Vehicle must be placarded with DOT label.

3.2.5 Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to a sealed truck or dumpster.

3.2.6 Do not transport disposal bagged materials on open trucks. Double bagged material may be transported on open trucks if they are first loaded in sealed drums. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this specification.

3.2.7 Advise the landfill operator or processor, in advance of transport, of the quantity of material to be delivered.

3.2.8 At disposal site unload containerized waste:

A. At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for rebagging. Clean entire truck and contents which have been in contact with containerized waste, using procedures set forth in Section 01711-Project Decontamination.
SECTION 02084

DISPOSAL OF ASBESTOS CONTAINING WASTE MATERIAL

B. Ensure that no visible emissions are released to the outside air from sealed plastic bags or impermeable containers while transporting or handling at the site where materials and waste are deposited.

3.2.9 Retain receipts from landfill or processor for materials disposed of.

3.2.10 At completion of hauling and disposal of each load, submit copy of waste manifest, chain of custody form, and landfill receipt to Owner's Representative.

END OF SECTION - 02084
PART I GENERAL

1.1 DESCRIPTION OF WORK

A. The Work covered by this section includes the handling of Lead bearing paints which are encountered during the renovation/demolition activities of all Lead painted surfaces including, but not limited to interior brick walls and wall attachments (electrical conduits/panels, gas lines, water lines, exhaust flues, 1’x1’ ceiling tiles), window sills/frames, HVAC exhaust ducts, and the incidental procedures and equipment required to protect workers and occupants of the building, or both, from contact with airborne Lead dust, fallen dusts containing Lead, and attached Lead bearing materials. The work also includes the proper disposal of the removed Lead containing materials at an approved disposal site according to current Federal, State, Regional, or Local regulations that apply.

B. The Contractor shall supply all labor, materials, equipment, services, insurance and incidentals which are necessary or required to perform the Work. The Work shall be performed in accordance with applicable governmental regulations and these Specifications.

C. The Contractor will be responsible for all medical monitoring before and after abatement in accordance with applicable laws and regulations including without limitation OSHA 29 CFR 1910.1025, 1926.62 and Title 8, CCR 1532.1.

D. The Contractor will be responsible for all environmental and health and safety monitoring including without limitation conducting personal breathing zone monitoring and the posting of results and all required disposal tests.

19. The Contractor will be responsible for completing all Lead waste characterization testing requirements prior to the removal activities so the proper Lead waste stream can be identified for each material. Based on the sample analysis the Contractor must make every effort to minimize the waste stream utilizing industry accepted standards.

F. The Contractor will be responsible for the removal as specified and the storage, transportation and disposal of all Lead paint and Lead materials removed from surfaces as well as all removed components in the affected area.

G. This Lead specification is general in scope to cover conditions that most often occur. However, the Contractor is bound only by the applicable portions of the specification. Additional or specific instructions to the Contractor may be added as part of the Scope of Work of a contract. In such cases, the Contractor is bound by those special provisions or requirements.

1.2 RELATED WORK This specification contains the requirements of the current Federal and State regulations for occupational exposure to Lead and Lead bearing compounds.

1.3 SCOPE

This specification covers the removal of Lead painted components as defined below:
### COMPONENT / SUBSTRATE

<table>
<thead>
<tr>
<th>COMPONENT / SUBSTRATE</th>
<th>LOCATION</th>
<th>LEAD CONTENT (PPM)</th>
<th>APPROXIMATE QUANTITY/WORK DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ext. Hand Rail/Metal</td>
<td>Ext. of Building</td>
<td>21,000 ppm</td>
<td>100 SF</td>
</tr>
<tr>
<td>Int. Pipes/Metal</td>
<td>Int. of Building</td>
<td>18,000 ppm</td>
<td>1,000 SF</td>
</tr>
<tr>
<td>Roof Vent/Metal</td>
<td>Throughout Roof</td>
<td>140,000 ppm</td>
<td>60 SF</td>
</tr>
<tr>
<td>Int. Hand Rail/Metal</td>
<td>Int. of Building</td>
<td>20,000 ppm</td>
<td>300 SF</td>
</tr>
<tr>
<td>Ext. Roll Up Door</td>
<td>Ext of Building</td>
<td>11,000 ppm</td>
<td>200 SF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPONENT / SUBSTRATE</th>
<th>LOCATION</th>
<th>LEAD CONTENT (PPM)</th>
<th>APPROXIMATE QUANTITY/WORK DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Curb/Concrete</td>
<td>Throughout Property lot</td>
<td>35,000 ppm</td>
<td>500 SF</td>
</tr>
<tr>
<td>Fire Hydrant/Metal</td>
<td>Throughout Property Lot</td>
<td>51,000 ppm</td>
<td>20 SF</td>
</tr>
<tr>
<td>Parking Stripe/Black</td>
<td>Throughout Property Lot</td>
<td>13,000 ppm</td>
<td>300 SF</td>
</tr>
<tr>
<td>Parking Pole/Metal</td>
<td>Throughout Property Lot</td>
<td>34,000 ppm</td>
<td>30 SF</td>
</tr>
</tbody>
</table>

1 Material may or may not be impacted by the scheduled renovation/demolition activities.

1.4 **APPLICABLE PUBLICATIONS**: The publications listed below are incorporated into this specification and shall be read as if printed herein. In case of conflict between the referenced documents and the requirements in the following test, the stricter requirements shall apply. When differences occur between Federal, State, Regional, City or local regulations or ordinances, the stricter requirements shall apply. However, only the regulations of agencies that have jurisdiction over the operations apply. Others may be used as guidelines. Recommended practices by regulatory agencies or scientific advisory organizations may be used as guidelines in establishing current state-of-the-art practices.

A. **CODE OF FEDERAL REGULATIONS:**

- 29 CFR 1910.1025 Inorganic Lead, (General Industry)
- 29 CFR 1910.10 Hazardous & Unsafe Conditions
- 29 CFR 1910.20 Employee Access to Medical Records
- 29 CFR 1910.133 Employee Protective Equipment
- 29 CFR 1910.134 Respiratory Protection
- 29 CFR 1910.141 Lavatory Facilities
- 29 CFR 1910.1200 Hazard Communications Standard
- 29 CFR 1926.20 General Safety and Health - Construction
- 29 CFR 1926.21 Safety Training and Education
- 29 CFR 1926.25 Housekeeping
- 29 CFR 1926.28 Personal Protective Equipment
- 29 CFR 1926.51(f) Washing Facilities
- 29 CFR 1926.55 Gases, Vapors, Fumes, Dusts, Mists
- 29 CFR 1926.57 Ventilation
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29 CFR 1926.59  Hazard Communications Standards (Construction)
29 CFR 1926.62  Lead Exposure in Construction
29 CFR 1926.103  Respiratory Protection
29 CFR 1926.150  Fire Protection
29 CFR 1926.353  Ventilation-Welding, Heating, etc.


42 U.S.C. 4822 (d) (2) (A) Public Law, Section 302, Lead Based Paint Poisoning Prevention Act. (Public Housing & Indian Housing Agencies - only)


Department of Transportation (DOT) Regulations regarding the transportation of hazardous materials, 49 CFR.

B. STATE OF CALIFORNIA & LOCAL REGULATIONS

CCR T8 1532.1 Construction Safety Orders, Lead

CCR T17 Division 1, Chapter 8, Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards

CCR T22 Division 4.5, Environmental Health Standards for the Management of Hazardous Waste

C. GUIDANCE DOCUMENTS


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1.5 DEFINITIONS AND REQUIREMENTS:

A. Lead: all metallic Lead, inorganic Lead compounds, Lead containing paints, bulk Lead sheets, and organic Lead soaps.

B. Action Level: Exposure without the use of respirators to airborne concentrations of Lead in the breathing zone of 30 micrograms/cubic meter (ug/m³) of air sampled and average over an 8 hour work period.

C. Permissible Exposure Limit: A limit of 50 ug/m³ Lead exposure averaged over an 8 hour work period. The 8 hour time-weighted average (TWA), allowable exposure is reduced proportionately if more than 8 hours is worked that day. Periods when respirators are worn may be calculated with periods when they are not worn, according to the respirator protection factor, to develop the 8 hour TWA.

D. Exposure Monitoring: The following criteria must be met:

1. Sample of breathing zone exposure as if no respirator were worn.

2. Sample for at least (1) full 8-hour work shift.

3. Sample the most exposed employee for each job classification in each different work area.

4. Full shift samples must be representative of the employees' regular, daily exposure to Lead.

5. The employer must determine by air sampling if employees are exposed to Lead above the Action Level or Permissible Exposure Limit.

6. Previous air monitoring results in similar situations during the past 12 months may be used to satisfy initial monitoring requirements or selection of respiratory equipment.

7. Air monitoring result reports shall include at a minimum:
   - Date
   - Locations and type.
   - Employee/Area name.
   - Sample Time.
   - Sample volume.
   - Airborne concentration (mg/m³).
   - Note actions taken in response to exceeding the established criteria.
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8. All air sampling data must be recorded even that which shows that employees are below the Action Level.

E. Frequency: If initial monitoring results show that occupational exposure of workers is below the Action Level, then only periodic monitoring is required. If it is above the Action Level, but below the PEL, sample every six months.

When the monitoring results are above the PEL, then monitoring must continue at least quarterly until results show that exposures have fallen below the Action Level.

Whenever there are changes in the operations, or type or location of the work, initial monitoring must be repeated to establish the workers’ exposure.

F. Notification: Within five (5) days following receipt of monitoring results, the employer must make the information available to the employees in writing. Posting of results, on site, is required.

G. Method of Compliance: The employer shall implement engineering and work practice controls, including administrative controls, to reduce and maintain employee exposure to lead at or below the PEL.

H. Respiratory Protection: Where a negative exposure assessment has not been performed and/or where engineering control and change of work practices may not reduce the employee exposures to below the PEL of 50 ug/m³, then proper respiratory protection as defined in 29 CFR 1926.62 and Title 8, CCR, Section 1532.1, Table II must be used according to the airborne concentrations of Lead present in the breathing zone.

I. Compliance Program: Each employer shall develop a written compliance program in accordance with 29 CFR 1926.62 and Title 8, CCR, Section 1532.1 for the control of occupational exposures to Lead at or below the PEL. Compliance programs must be explicit in the methodologies to reduce the exposures. This program must be provided to the Consultant five (5) days prior to project commencement.

J. Mechanical Ventilation: The ventilation systems must meet ANSI criteria and be tested for static pressure at least every three months, or directly after maintenance or major repair. Temporary mechanical ventilation, such as negative air machines, must be inspected daily for leaks and proper assembly. HEPA filter systems must be inspected for leaks daily.

K. Recirculation of Air: Air that is returned to the work space must be filtered with a HEPA filter to retain the Lead particulate. Such devices must be inspected daily.

Also, open vents, shafts or ventilation systems inlets and outlets must be sealed shut to prevent capture of the Lead dust in the air which would be transported throughout the influence of the ventilation system.

L. Administrative Controls: If the employer uses administrative controls to reduce employee TWA exposures to Lead, the employer must establish and implement a job rotation schedule in accordance with Title 8, CCR, section 1532.1.

M. Respiratory Program: The employer shall establish a written respiratory program in accordance with 29 CFR 1910.134 and Title 8, CCR, Section 5144. Each employee must be trained and instructed in the handling and use of the appropriate respiratory protection for the concentration to which they are exposed.
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N. Protective Clothing: The employer shall provide disposable or other protective clothing to protect the worker's street clothing and exposed skin from exposure to Lead dust. Dirty clothing can be a substantial contribution to the worker's inhalation or ingestion of Lead dust and may be a source of introduction into the home where children may reside.

O. Cleaning and Replacement: The employer shall provide the protective clothing required in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 ug/m$^3$ of Lead as an 8-hour TWA.

P. Laundry: The employer must inform the laundry of the Lead contaminated clothing and label the bags in which it is transported to the laundry.

CAUTION - CLOTHING CONTAMINATED WITH LEAD, DO NOT REMOVE DUST BY SHAKING OR BLOWING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE OR FEDERAL REGULATIONS.

Q. Air Hoses: The use of air hoses to remove dust from clothing, equipment, or other protective clothing is prohibited.

R. Housekeeping: The following practices shall be used;

1. Maintain the surfaces as free of Lead as practical.

2. Air cleaning with air hoses or blowers on surfaces is prohibited.

3. Shoveling, or gross removal may only be done in enclosed, ventilated areas and where employees are properly protected.

4. Where vacuuming is used, the vacuum must be fitted with a HEPA filter.

5. Clean-up of the work area must be done daily.

S. Eating and Rest Places: Rest places and places where employees eat must be kept free of Lead contamination. Eating, drinking, chewing, smoking or applying skin creams or lotions in Lead contaminated work areas is prohibited. Ingestion is a major source of introduction of Lead into the body.

T. Lavatories: The employer shall provide clean, adequate lavatories to comply with 29 CFR 1926.62. Washing facilities is required. Employees need to wash their hands and face before eating, drinking, chewing, or smoking.

U. Medical Surveillance: The employer shall initiate a program of medical surveillance for each employee which is or may be exposed above the Action Level of 30µg/m$^3$ 8 hour TWA each year. The medical surveillance shall be made by a licensed physician using the protocol defined in 29 CFR 1926.62 and Title8, CCR, section 1532.1.

V. Medical Notification: Each employee whose blood Lead levels are above 40mg/dl of whole blood shall be notified. They shall be monitored according to the schedule in 29 CFR 1926.62 and Title 8, CCR, Section 1532.1, until blood Lead levels fall below 40mg/dl.

W. Medical Removal: Each employee monitored for blood Lead shall be removed from work status when the blood Lead levels exceed 50mg/dl, or according to the schedule in 29 CFR 1926.62 and Title 8, CCR, Section 1532.1.
X. Employee Information and Training program: The employer shall communicate information concerning Lead hazards according to the requirements of the Hazard Communication Standard, Title 8, CCR, section 5194. The employer shall provide initial training in accordance with Title 8, CCR, Section 1532.1, for employees who may be exposed to Lead dust above the Action Level (AL) on any day. The employer shall ensure that all employees and supervisors who are engaged in Lead related construction work as defined in Title 17, CCR, Section 35022 and have been shown to be exposed to Lead at or above the PEL, meet the training requirements of Title 8, CCR, section 1532.1 and are certified by the California Department of Health Services.

Y. Signs: The employer shall post signs at the work site that are readily visible to those who enter where the PEL may be exceeded. They shall read:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

Z. Record Keeping: The employer shall keep accurate records of medical examinations, blood Lead data, air sampling results, ventilation system inspections, the number and names of employees present, the respiratory protection worn, the protective equipment worn, and workers medically removed from the job and any other job site variables that affect the exposures of the workers. The records must be kept for the duration of thirty (30) years. The records affecting each employee must be made available on request.

AA. Observation of Monitoring: The employer must make methods and observations available to employees of the air monitoring on the job. Individual medical information must not be disclosed without the employee’s permission.

BB. Lead Waste Characterization Testing: The Contractor is responsible conducting tests on all wastes including without limitation, Toxicity Characteristic Leaching Procedures (TCLP), Toxicity Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) analysis on wastes suspected of containing Lead prior to storage, transport and disposal as required for compliance with all applicable Federal, State and local laws, regulations and standards. The waste characterization testing must be performed in accordance with all current Federal, State and Local regulatory requirements.

CC. Weekly transport and landfill manifests shall be submitted along with pay requests for Completed Work.

1.6 QUALITY ASSURANCE

A. Onsite Observations:

1. Consultant will provide observations regarding integrity of barriers, contamination control, decontamination facilities, enclosures (when they are used), protective clothing worker protection programs, Contractor’s air monitoring procedures, proper performance of abatement/removal of the Lead bearing materials including area preparation, isolation, disposal of refuse and compliance with the EPA, OSHA, State, City and Local regulations affecting the job.

2. If at any time, the Consultant determines that the practices are in violation of applicable regulations or defined procedures, to practices that endanger the employees, he/she shall notify the Contractor orally that operation must cease...
until approved corrective action is taken. The notification shall be followed by a written confirmation to the Contractor.

3. If the work has been stopped for reasons in 1.6.A.3 above, the work may not be restarted until the Contractor receives a written authorization to proceed from the Consultant. The Contractor shall bear the costs of the delay due to non-compliance with the regulations or the contract.

4. Any costs resulting from such a stop work order issued by the Consultant and any work costs involved in restarting the work, will be borne by the Contractor and will not be considered as the basis for an increase in the contract amount or time due to delays.

5. The safety of the Contractor's employee used under this contract specification and any visitors on the job site are the sole responsibility of the Contractor.

B. Auditing of the Contractor:

1. The Lead work site may be audited by the Consultant as the Consultant deems necessary relative to compliance with all applicable Federal, State and Local laws, standards and regulations.

2. Allow the Consultant or its representative access to the site, log books and monitoring data upon request.

3. Provide the Consultant on a weekly basis the following reports:

   a. Supervisor's Daily logs.
   b. Personnel air monitoring results for each work area.
   c. Waste Manifests

4. Chain-of-custody forms are to be kept for all samples.

1.7 TITLE TO MATERIALS All Lead bearing materials and refuse resulting from operations or renovation/demolition work, except as specified herein, shall become the property of the Contractor and shall be disposed of according to Federal and State regulations in an EPA approved disposal site. The Owner will not accept possession of any Lead bearing materials or refuse after their removal by the Contractor.

1.8 PROTECTION OF EXISTING WORK TO REMAIN The Contractor shall perform the Lead paint removal and demolition work without damage or contamination of the adjacent areas. California DHS considers contamination outside the work area a "Lead hazard". Where adjacent areas are damaged or contaminated with Lead dust of refuse, it shall be restored to its original condition at no expense to the Owner. The restorative procedures shall be performed in accordance with the DHS Regulations (Title 17 CCR, Division 1, Chapter 8) and approved by the Owner or the Consultant prior to the start of restoration of decontamination.

1.9 MEDICAL REQUIREMENTS The OSHA Lead standard is strict about the medical monitoring of employees exposed to Lead bearing dusts, fumes or mists. The employer must conduct the initial monitoring of the work place as required and use that information to develop a plan for medical monitoring of the employees. It is to the Contractor's responsibility to conduct biological monitoring and medical surveillance in accordance with 29CFR, 1926.62 and Title 8, CCR, section 1532.1.
1.10 **TRAINING** Prior to the assignment of activities that may disturb Lead materials, each employee must be instructed about the hazards of Lead in accordance with the requirements of the Hazard Communication Standards and the procedures and equipment that must be used to minimize exposures. This includes the use of respirators, protective clothing and methods of removal.

The Contractor’s & workers must be licensed by the State for removal of Lead materials and refuse when workers have the potential to be exposed to airborne Lead concentration in excess of the PEL. Unless a negative exposure assessment has been performed the Contractor shall assume that when they are performing anyone or a combination of the “trigger tasks” listed in T8 CCR Section 1532.1 (d) that airborne concentrations of Lead will be in excess of the PEL. Any Federal, State, Regional, City or Local permits or licenses required must be obtained by the Contractor prior to beginning work.

1.11 **PERMITS AND NOTIFICATIONS** Obtain all necessary permits in conjunction with the Lead materials removal, hauling and waste site disposal and provide timely notification of such actions as may be required by Federal, State or Local authorities. Except, as negotiated, the Contractor shall procure and pay for all permits and inspections, except those performed by the Owner, and shall furnish any bonds, security, or deposits required to permit performance of the work defined. The Contractor will be responsible for the determination of required regulatory postings for the Lead project.

1.12 **SAFETY COMPLIANCE** In addition to detailed requirements of this specification, the Contractor shall comply with the safety and health requirements of applicable Federal, State and Local regulations. Where interpretations are necessary, they shall be obtained before commencing work. Where the referenced regulations vary, the most stringent requirements shall apply.

1.13.1 **RESPIRATOR PROGRAMS** All workers inside the Lead work area will wear the appropriate respirator for the existing Lead concentration. The Contractor shall prepare a respirator program required in the Federal regulation at 29 CFR 1910.134, or State requirements whichever is stricter. The respiratory requirements in Table II, 29 CFR 1910.1025 - Lead must be followed.

<table>
<thead>
<tr>
<th>Airborne Concentration of Lead and Use</th>
<th>Required Respirators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in Excess of 500 ug/m³ (10X PEL)</td>
<td>Half-mask, air-purifying respirator with HEPA filters. Half-mask supplied air respirator operated in demand mode (negative pressure) mode.</td>
</tr>
<tr>
<td>Not in Excess of 1,250 ug/m³ (25X PEL)</td>
<td>Loose fitting hood or helmet PAPR with HEPA filters Hood or helmet supplied air respirator operated in a continuous flow mode</td>
</tr>
<tr>
<td>Not in Excess of 2500 ug/m³ (50X PEL)</td>
<td>Full face air purifying respirator with HEPA filters. Tight fitting PAPR with HEPA filters Full face supplied air operated in demand mode Half-mask or full face supplied air operated in a continuous flow mode Full face SCBA operated in demand mode</td>
</tr>
<tr>
<td>Not in Excess of 50,000 ug/m³ (1,000X PEL)</td>
<td>Half-mask supplied air operated in pressure demand or other positive pressure mode.</td>
</tr>
<tr>
<td>Not in Excess of 100,000 ug/m³</td>
<td>Full-face supplied air operated in pressure demand</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Airborne Concentration of Lead and Use</th>
<th>Required Respirators</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2,000X PEL)</td>
<td>or other positive pressure mode.</td>
</tr>
<tr>
<td>Greater than 100,000 ug/m³ or unknown</td>
<td>Full facepiece self-contained breathing (SCBA) operated in pressure demand or other positive pressure mode.</td>
</tr>
</tbody>
</table>

Notes:
1. HEPA means High Efficiency Particulate Aerosol filter at 99.97% efficiency collection of .3 micron diameter particles or larger.
2. The values in the table are based upon reasonable measurements in the breathing Zone of workers for an 8 hour time-weighted average work day.

The Workers must be properly trained in the care, use and maintenance of respirators. The Contractor will require that a fit test be performed on and passed by his/her workers not less than six (6) months before they enter the work area. The Contractor must implement a formal respiratory protection program in accordance with 29 CFR 1926.62.

The Workers may not remove their Respirators until they enter the washing area (or equivalent) of the decontamination chamber.

1.14 SUBMITTALS

A. Certification of Compliance: Submit the manufacturer's certification that vacuums, ventilation equipment or other equipment required to contain Lead conforms to ANSI Z9.2 (See references)

B. Lead Work Plan: Submit a detailed plan of the work procedures to be used in the Lead activities and related work. Such a plan shall include the location of Lead control areas, change rooms, rest areas, eating areas, mini-enclosures (if used) methods of storage and methods of disposal.

The Contractor must not deviate from procedures set forth in this specification, unless express permission is granted by the Consultant. All deviations from established Lead work activities are subject to review and approval by the Owner or the Consultant. Applicable regulations must be obeyed.

C. Testing Laboratory: Submit the name, address and telephone number of the testing laboratory selected for the monitoring of the airborne concentrations of Lead. The analytical laboratory shall be accredited by ELAP or NLLAP or be a current participant in the NIOSH Environmental Lead Proficiency Analytical Testing Program (ELPAT) and maintains certification results.

D. Industrial Consultant/Safety Personnel: Submit the name of any industrial Consultant or safety personnel who will be involved in the Contractor's Lead monitoring and training program. If third party monitoring of the air is conducted the name of the organization conducting the work must be offered by the Contractor.
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E. Monitoring Results: The results of air monitoring or blood Lead analyses shall be submitted to the Consultant for review within 24 hours after the Contractor receives them. Any unwarranted overexposure must be reported to the Consultant who will review the methods of prevention developed by the Contractor.

F. Notification: Notify the Owner and the Consultant three (3) working days prior to the start of Lead work activities. Where fire protection systems must be deactivated, the Consultant and the Fire Department shall be notified at least three (3) days prior to that action.

G. Landfill: Submit written evidence that the landfills or EPA disposal sites are approved by the Federal, State, or Local authorities for dumping of the Lead bearing refuse. A landfill (dump site) log or manifest must be maintained and submitted to the Consultant. All dump receipts must be reconciled with the manifest and provided to the Consultant for review.

H. Local Exhaust Systems: Pressure differentials of at least -.02 inches of water shall be maintained for any negative air enclosures used in the Lead work operations.

I. Permits: Submit copies of the permits for Lead work as applies, and proof that all arrangements have been made for the transportation and disposal of the Lead bearing materials and refuse to a dumpsite approved by the EPA or local authorities.

J. Schedule and Work Plan: The Contractor shall submit a written work plan and work force schedule to the Consultant for review. It must establish the locations, expected rates of removal, start and completion dates and number of workers assigned on the job. The plan should include any time-phased work or phasing out of the job at the end.

K. Respirator Program: As noted above, the Contractor must develop a viable respirator program based upon monitoring results on the job.

L. Air Monitoring: The Contractor must provide the methods, techniques and the names of persons or organizations that will perform the regular personal and environmental air monitoring for Lead in Air or Wipe Samples. The information is subject to review by the Consultant for calibrations, proper entries, recordkeeping, testing laboratory and proper analytical techniques.

M. Disposal Site Records: Upon completion of the Lead work the Contractor must submit the transportation manifests and dump receipts that are reconciled, to the Consultant for review. This phase is part of the contract and the Contractor will not be released until this action is completed.

N. Occupancy Release: The Contractor shall notify the Consultant that the Lead work areas are free of airborne Lead and that there is no Lead bearing dust contamination and are available for use or release to the Owner for renovation/demolition activities.

O. Final Documentation: The Contractor must provide all of the documentation generated during the Lead work including the disposal receipts, manifest, monitoring data, etc. for inclusion in a final closure report. The Consultant advises the Owner not to allow release of the Contractor until all the final documentation is provided.

1.15 SANITARY FACILITIES Adequate toilet facilities are required in the work area. Since this is a Lead project, the Contractor is required to provide a lunch/rest area away from contaminated areas and soap and water to wash hands and faces prior to eating. Where such facilities do not
exist in the building, the Contractor shall provide temporary facilities. This includes an area to change clothes and clean or repair respirators.

1.16 DELIVERY, STORAGE AND PROTECTION

A. Delivery: Deliver all materials in the original packages, containers or bundles bearing the manufacturer and brand name.

B. Storage: Store all materials subject to damage off the ground, away from wet or damp surfaces and under of cover sufficient to prevent damage of contamination.

Lead bearing materials or refuse must be stored in locked rooms or locked dumpsters before it is delivered to the dumpsite.

C. Protection: Damaged or deteriorating materials shall not be used and shall not be discarded in the premises. This includes any refuse that is not Lead bearing that is generated by the Contractor. It must be removed from the premises.

Any materials that become contaminated with Lead bearing materials that cannot be decontaminated shall be disposed of in accordance with the applicable Federal, State and Local regulations.

END OF PART 1 - GENERAL

PART 2 PRODUCTS

2.1 RESPIRATORS

A. Selection: Select respirators from those currently approved by the National Institute for Occupational Safety & Health (NIOSH) as defined in the NIOSH Certified Equipment List (most current).

B. Lead Respirators: Provide respirators of the type listed in Table II of 29 CFR 1926.62 and Title 8, CCR, Section 1532.1 for the airborne concentrations of Lead encountered for handling, removal, decontamination, packaging or disposal.

C. Types of Respirators: The types of respirators required are defined in Table II described above. However, the Contractor must measure the airborne concentrations and select the appropriate respirator. Historical date may be relied upon if it validly can be applied to the work site for respirator selection. In all other cases, the Contractor must obtain approval form the Consultant for special conditions.

2.2 ENCAPSULANTS

A. Penetrating: Where the Contractor wishes to use encapsulants, or is directed by the Owner or in the scope of work, there are a large number of encapsulants for fine particles available. They should meet the EPA's recommendations for application and composition. Any other products must be approved by the Consultant before use.

B. Bridging: There are a number of bridging encapsulants available on the market that meet the EPA recommendations for application and composition to surface coat contaminated surfaces. Any deviations must receive the Owner's and Consultant's approval.
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2.3 **PLASTIC SHEET** Plastic sheet used for Lead work shall be used in sufficient size and length to reduce the number of joints. The minimum thickness shall be:

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall Barriers</td>
<td>4 mil</td>
</tr>
<tr>
<td>Floor Barriers</td>
<td>2 layers of 6 mil</td>
</tr>
<tr>
<td>Other Applications</td>
<td>4 mil</td>
</tr>
</tbody>
</table>

2.4 **PLASTIC BAGS** Any plastic bags used for containment of Lead bearing material refuse, contaminated clothing or tools, or other materials used in the work area shall be a minimum of 6 mil in thickness of polyethylene. The bags must be labeled with a proper warning label, sealed and placed into DOT approved metal drums where State or Local authorities require it.

2.5 **TAPE** Duct tape shall be capable of sealing joints of adjacent plastic sheet and attachment of plastic to surfaces under wet or dry conditions and be able to stick when wetted with amended water.

2.6 **DISPOSAL CONTAINERS** Disposal containers shall be suitable to receive and retain Lead bearing refuse until transported to the landfill for disposal. It is the Contractor’s responsibility to determine the proper waste containerization based on the type of waste generated as in accordance with Title 22, CCR, Division 4.5 and any other applicable federal, state, local requirements. The containers shall be labeled in accordance to requirements of Federal, State and Local authorities that apply.

2.7 **EYE PROTECTION** During the Lead project, employees will need protection from flying particles during scraping, removal, handling of waste and packaging. The Contractor is responsible to provide eye and any other protective measures, according to 29 CFR 1910.133.

2.8 **SPECIAL CLOTHING**

A. Protective Clothing: Where required by the regulations, the Contractor must provide workers who have the potential to be exposed to Lead containing materials or airborne concentrations above the PEL of 50 ug/m³ protective and work clothing, such as:

- Coveralls, or similar full body clothing.
- Head covers, gloves, hats, shoe covers, etc.
- Face shield or goggles, where required.

B. Work Clothing: Provide work clothing or safety devices along with the protective clothing as required. Such safety devices such as rubber boots may be decontaminated and reused.

2.9 **WARNING SIGNS** The employer shall post the following warning signs in each work area where the PEL could reasonably be exceeded. The signs shall be at least 20" x 14" with bold lettering two (2) inches tall.

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING
As directed by the consultant, the Contractor shall place two (2) inch wide barrier tape with the wording “CAUTION: LEAD-PAINT ABATEMENT” at the entrance to discourage unauthorized entry.

2.10 **SURFACTANTS (WETTING AGENT)** Surfactants shall be mixed as recommended by the manufacturer to produce amended water. Generally, the ratio is about (30:1) or one cup of surfactant to 30 gallons of water, depending upon the concentrations of the original material.

2.11 **OTHER MATERIALS** The Contractor shall provide standard commercial grade quality of all other materials such as lumber, nails and hardware which may be required to construct or dismantle the decontamination areas and barriers that isolate the Lead work areas.

2.12 **TOOLS AND EQUIPMENT**

A. **Water Sprayer**: Water sprayers for amended water or encapsulants shall be an airless or other low pressure type, such as hand sprayers.

B. **Airless Sprayer**: An airless sprayer may be used for the application of penetrating wash solution such as trisodium phosphate or sodium hexametaphosphates to remove Lead residues from walls or other surfaces.

C. **Negative Air Machines**: All negative air machines shall be of the type that filters the exhaust through a HEPA filter and properly permitted through SCAQMD. They must be vented outside the enclosures or building. A failure of the exhaust system may contaminate the entire work area with fine airborne Lead dust which cannot be seen with the naked eye, thus creating unknown and unwarranted exposures to occupants.

D. **Exhaust System Requirements**: A local exhaust system must be provided to the work area where airborne concentrations can reasonably be expected to exceed the PEL of 50 µg/m³ for an 8 hour time-weighted average work day. Where exhaust systems are used to ventilate enclosures, a minimum pressure differential of -.02 inches of water must be maintained to ensure that Lead containing dusts cannot escape. All filters and exhaust equipment must conform to the ANSI Z9.2 HEPA requirements.

E. **Vacuum Equipment**: All vacuum equipment utilized in the work area shall use the HEPA filters on the discharge and be suitable for wet use where water is involved. Vacuum equipment which is exhausted outside the work area shall be properly permitted through SCAQMD.

F. **Scaffolding**: Scaffolding as required shall meet the current safety and health regulations administered by the Federal or applicable State standards.

G. **Transportation Equipment**: Transportation equipment shall be suitable for loading, temporary storage, transit and unloading of contaminated waste without exposure to persons or property. All transportation of Lead refuse to the dump sites must be in covered vehicles.

H. **Electrical**: Electrical tools and equipment shall meet all applicable codes and regulations. Ground fault interrupters and assured grounding programs are required because of the wet nature of some of the Lead Paint removal projects.

I. **Fall Protection**: The Contractor shall adhere to the Fall Protection requirements set forth in 1926.502.
PART 3 - EXECUTION

3.1 WORK PROCEDURE All Lead paint removal work must be performed in accordance with Federal, State and local regulations. The following procedures that are known to control the release and spreading of Lead dust must be utilized at all times:

A. Wet removal procedures.
B. Protective clothing must be worn where workers are in contact with Lead dust to prevent spread of contamination.
C. Eating, drinking and smoking is prohibited in Lead paint removal or control areas.
D. Local exhaust ventilation and enclosures to enclose the Lead paint removal operations, when feasible.
E. Housekeeping: All surfaces shall be maintained as free as practicable of accumulations of lead, clean change areas and showers where feasible, shall be provided for workers whose lead exposure exceeds the PEL, adequate hand-washing facilities shall be available and utilized for all activities involving Lead.

3.2 LEAD PAINT REMOVAL & CONTROL AREA (ENCLOSED) For the interior or exterior removal or demolition of components that contain Lead where the paint will become detached from the substrate or broken up due to the removal or demolition activities this method of Lead control shall be used and the following procedures are required:

A. Seal the openings where the release of Lead could occur outside the work area with two (2) layers of 6-mil flame retardant poly secured with duct tape (i.e., windows, doorways, HVAC systems, and any other openings).
B. Cover floors with a minimum of one (1) layer of 6-mil flame retardant poly secured with duct tape.
C. As directed by the consultant, utilization of negative air machines for total enclosures or for partial enclosures.
D. Mini-enclosures may be used where only small amounts of Lead paint must be removed from the substrate. There is no need to provide a full enclosure except for complete removal of paint from large substrates. Mini-enclosures require ventilation using a HEPA vacuum cleaner or small negative air machine that will provide negative pressure ventilation.

3.3 LEAD PAINT OPEN CONTROL AREA For the interior or exterior removal or demolition of components that contain Lead where the paint will most likely not become detached from the substrate or the paint will not be broken up during removal or demolition activities, with the approval of the Consultant, an open area may be used.

A. Establish designated limits to the Lead work area by using Lead caution tape and signs or other continuous barriers or barricades to separate the Lead operations from non-lead work areas.
B. Cover floors with a minimum of one (1) layer of 6-mil flame retardant poly secured with duct tape.
C. Control measures are dictated by the amounts of Lead in the air. When the PEL is exceeded additional engineering controls, as stated in the OSHA Lead in Construction standards, apply.

D. Where exterior Lead paint activities is required, the Contractor shall cover the ground and/or shrubbery, outside the windows, door frames, walls, etc. requiring Lead removal with a minimum of one layer of 6-mil flame retardant polyethylene sheeting to avoid contaminating the soil with Lead dust and chips. The area shall be pre-cleaned so as to remove any existing Lead paint chips. Additionally, two (2) layers of 6-mil polyethylene sheeting must be installed at all openings to the inside of the building including but not limited to, windows, doorways, or other openings from the immediate work area.

3.4 DECONTAMINATION AREA/ WASTE LOAD-OUT

A. Construct the following Worker decontamination enclosure system contiguous to or adjacent to the work area:

1. An equipment or dirty room with two doorways, one to the work area and one to the shower room.

2. If feasible, a shower room with two doorways, one to the equipment room and one to the clean room. The shower room shall contain at least one shower with hot and cold water. The Contractor shall ensure that the shower enclosure system does not leak. Additionally, the shower shall always contain an ample supply of soap, shampoo and clean dry towels. The Contractor shall utilize a three-stage water filtration system prior to release of shower water into a leak-tight labeled drum. The water shall be profiled for Lead content and subsequently disposed of properly.

3. A clean room with one doorway into the shower and one entrance/exit to non-contaminated areas. The clean room shall possess sufficient space for storing the Workers’ street clothes, towels and other non-contaminated items.

B. Workers shall change clothes exclusively (i.e. dress and undress) within the clean room. If additional space is required for changing clothes, the Contractor shall construct modesty rooms (if inside the building, use black polyethylene sheeting, if outside the building, use 1/2” plywood).

C. The Worker decontamination enclosure system should exist independently of the facility but contiguous to the work area (i.e. building facilities such as toilets, sinks and showers shall not be used in constructing the decontamination enclosure system).

D. The Worker decontamination area shall be under negative air pressure at all times. Additionally, the Contractor shall provide sufficient quantities of make-up air to the work area.

E. The Contractor shall construct a waste load-out wash down station contiguous to the equipment room or work area. The waste load-out area shall be constructed with a minimum of two layers of 6-mil polyethylene sheeting and secured with duct tape.

F. The Contractor shall move all materials or equipment from the work area through the waste load-out or equipment decontamination room according to the following sequence:

1. The Contractor shall establish air locks at the entrance to the waste load-out area.
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2. All ingress and egress from the waste load-out area shall take place between the work area’s separate airlock and the wash down station.

3. The Workers shall thoroughly wet contaminated equipment and waste bags in the work area and pass the equipment, bags into the wash room. After the Workers pass the equipment, bags into the wash room, they shall repeat the wet cleaning and place the equipment into the second chamber of the waste load-out facility. All Workers in the waste load-out facility shall wear full protective clothing and appropriate respiratory protection. If rented equipment is used, it must be completely decontaminated. Surface dust wipe tests may be necessary.

G. Lunch Room & Facilities: The Contractor shall provide a separate place for the employees to eat and rest that is not contaminated with Lead dust. Contaminated clothing and devices shall be prohibited from any eating lunch room area.

3.5 CONTROLLING OFFSITE DISPERAL The Contractor must implement control measures to contain Lead dust and debris within the Work Area including without limitation:

A. Control and limit access to the Lead work areas.

B. Limit tracking of dust and debris.

C. Implement a program of ongoing cleanup.

3.6 CLEANUP AND AIR MONITORING The Contractor shall be responsible for not exceeding the OSHA established PEL during the preparation, removal and cleanup operations relating to Lead. If levels at any time exceed the PEL, it shall be the Contractor’s responsibility to initiate proper engineering controls and work practices until airborne Lead is reduced to below the OSHA PEL.

3.7 DISPOSAL OF LEAD WASTE The Contractor shall be responsible for the performance of all collection and analysis of generated lead waste for disposal. The Consultant will observe all sample collection and shall be provided copies of the sample analysis prior to disposal of the material. This includes, but is not limited to TTLC and STLC/TCLP testing.

A. As work progresses and to prevent exceeding available storage capacity on site, the Contractor shall remove sealed and labeled containers of waste from the site and dispose of such containers at an authorized disposal site in accordance with applicable regulations.

3.7.1 The Contractor shall contact the regional EPA, State, and local authorities to determine Lead paint debris disposal requirements. The requirements of Resource Conservation and Recovery Act (RCRA) shall be complied with as well as applicable state solid waste plan requirements. The Contractor shall ensure that applicable local, state and federal permits are obtained for transportation of hazardous materials and that all waste materials are properly classified for proper transport and disposal. During the renovation / demolition activities, the Contractor shall not leave debris in the yard or nearby property, incinerate debris, dump waste by the road or in an unauthorized dumpster, or introduce Lead-contaminated water into storm (will not be flushed down yard inlet or street drain) or sanitary sewers (will not be flushed down toilet or other household drain).

A. If the intact LBP exhibits all of the following characteristics, you may handle it as an architectural waste/trash:

1. If the component is greater in size than 60mm, which is the California definition of debris;
2. If the paint adhered to the component does not exhibit any cracking, peeling or flaking powder or any other delamination;

3. If the Lead waste does not exceed 50 mg/kg using the TTLC procedure or;

4. If the Lead waste does not exceed 5.0 mg/L using the STLC procedure;

**NOTE:** A letter from the landfill will be required to acknowledge the receipt of Lead-containing materials.

B. Lead painted metal adhered to components that does not exhibit any cracking, peeling, or flaking or any other delamination may be recycled. It is the Contractor’s responsibility to locate a metal recycling company who will accept the Lead painted metal components. A signed letter indicating the knowledge of the Lead painted metal components and acceptance by the recycling company must be submitted to the Consultant prior to the transfer of the components off-site.

3.7.2 Testing on Lead paint waste materials generated by the Contractor by use of the TTLC, STLC or TCLP Procedure will be completed by the Contractor.

3.7.3 The following materials shall be tested to determine whether or not they are hazardous.

A. shower waste water

B. dust from HEPA filters and from damp sweeping

C. All Lead adhered components removed from buildings. Like components should be tested together to reduce the potential for disposal as RCRA waste

D. plastic sheets, duct tape, or tape used to cover floors and other services during the Lead paint/Lead painted component removal

E. solvents and caustics used during stripping processes

F. liquid waste, such as wash water used to decontaminate components and liquid waste from exterior water blasting

G. rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials used for testing, removal and cleanup

H. disposable work clothes and respirator filters

I. any other items contaminated with Lead paint.

3.7.4 Non-Hazardous Solid Waste (as determined by testing). The Contractor shall place Lead-based paint chips, debris, and Lead dust in double (4-mil) or single (6-mil) polyethylene bags that are air-tight and puncture-resistant. Pieces of wood or other types of substrates that do not fit into plastic bags will be wrapped with 6-mil polyethylene sheeting and labeled independently with appropriate warning verbiage, tracking classification labels in accordance with local, state and federal regulations and/or may use metal DOT drums as primary labeled containers.

3.7.5 The Contractor will place all disposable cleaning materials, such as sponges, mop heads, filters, disposable clothing, and brooms in double (4-mil) or single (6-mil) plastic bags and sealed.
3.7.6 The Contractor shall clean surfaces and equipment and bag large debris. The Contractor shall then remove plastic sheeting and tape from covered surfaces. Prior to removing the plastic sheeting, the Contractor shall lightly mist the sheeting in order to keep dust down and fold inward to form tight small bundles to bag for disposal. The Contractor shall place all plastic sheeting in double (4-mil) or single (6-mil) thick plastic bags and seal.

3.7.7 The Contractor shall bag and seal vacuum bags and filters in double (4-mil) or single (6-mil) thick plastic bags.

3.7.8 The Contractor shall place all contaminated clothing or clothing covers used during removal and cleanup in plastic bags for disposal prior to leaving equipment room.

3.7.9 The Contractor shall place solvent residues and residues from strippers in drums made out of materials that cannot be dissolved or corroded by chemicals. Solvents will be tested by the Contractor to determine if they are hazardous. Solvents, caustic and acid waste must be segregated and not stored in the same containers.

3.7.10 The Contractor shall contain and properly dispose of all liquid waste, including Lead-dust contaminated wash water.

3.7.11 The Contractor shall HEPA vacuum the exterior of all liquid waste containers prior to removing the waste containers from the work area and shall wet wipe the containers to ensure that there is no residual contamination. Containers should then be moved out of the work area into the designated storage area.

3.7.12 The Contractor shall carefully place the containers into the truck or dumpster used for disposal.

3.7.13 The Contractor shall ensure that all waste is transported in covered vehicles to a landfill, or lined landfill, if available.

3.7.14 If the Contractor subcontracts the removing of the Lead-based paint waste, he shall insure that the company removing the waste material adequately covers all loads so as to assure that no dust or debris is released.

3.7.15 Disposal of Hazardous Waste (as determined by testing). The Contractor will be required to comply with the Resource Conservation and Recovery Act (RCRA) and any other applicable federal, state, local requirements.

3.7.16 Waste Containers. The Contractor will comply with EPA, and DOT regulations for containers. The Contractor shall contact the state and local authorities to determine their criteria for proper containerization of RCRA Lead waste, California hazardous Lead waste and non-hazardous Lead waste. The more stringent regulations shall apply to the proper containerization of the identified Lead waste.

3.7.17 Waste Transportation. If the Contractor is not a certified hazardous waste transporter, a contract shall be entered into with a certified transporter to transport the waste. The Contractor shall require the certified hazardous waste transporter to follow all applicable hazardous waste transportation regulations.

Please note that the regulatory guidance issued by Waste Evaluation Department of Toxic Substance Control on Lead painted building debris dated 6/13/94 is not a variance but a regulatory guidance and will not be interpreted as a variance from RCRA, Federal guidelines or HUD guidelines.

3.8 FINAL INSPECTION AND TESTING:
A. After thorough cleaning of the work space, and satisfactory degree of cleanliness has been achieved, the Contractor shall notify the Consultant that the work area is ready for a final visual inspection. The Consultant and the Contractor shall then visually inspect the work area for the detection of any visible Lead dust or contamination. If the visual inspection does not reveal any dust or other signs of contamination the area is considered complete.

B. The Consultant may perform Lead dust wipe surface and/or soil sampling on the horizontal, vertical surfaces and bare soil areas in accordance with the clearance requirements specified in the HUD Regulations.

END OF PART 3 - EXECUTION