

2. AMENDMENT/MODIFICATION NO. 0003	3. EFFECTIVE DATE APR 16, 2004	4. REQUISITION/PURCHASE REQ. NO. N/A	5. PROJECT NO. (If applicable) SPEC. NO. 1401
6. ISSUED BY DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, SACRAMENTO SACRAMENTO, CALIFORNIA 95814-2922		7. ADMINISTERED BY (If other than Item 6) DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, SACRAMENTO SACRAMENTO, CALIFORNIA 95814-2922	

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(✓)	9A. AMENDMENT OF SOLICITATION NO. W91238-04-R-0012
	✗	9B. DATED (SEE ITEM 11) MAR 05, 2004
		10A. MODIFICATION OF CONTRACTS/ORDER NO. N/A
		10B. DATED (SEE ITEM 13) N/A
CODE	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
N/A

NOTE: ITEM 13 BELOW IS N/A.

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. N/A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority) N/A

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
Competitive 8(a) Multiple Award Task Order Contract
California Boundaries of the Sacramento District Corps of Engineers, and Hawthorne Army Depot, Nevada

1 Encl

1. Revised Pages: Section 01515 (New), Section 13280 (New), Section 13281 (New)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED
	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)
	16C. DATE SIGNED

**Section 01525A
Safety and Occupational Health Requirements**

1.0 PART 1 GENERAL

1.1 References

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CALIFORNIA CODE OF REGULATIONS (CCR)

- 8 CCR, Chapter 4, Subchapter 4 Construction Safety Orders
- 8 CCR, Chapter 4, Subchapter 7 General Industry Safety Orders
- 8 CCR § 1509 & 3203 Injury and Illness Prevention Program
- 8 CCR § 14000 – 14007 Reporting of Occupational Injury or Illness

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 10 (2002) Portable Fire Extinguishers
- NFPA 51B (2003) Fire Prevention During Welding, Cutting, and Other Hot Work
- NFPA 70 (2002) National Electrical Code
- NFPA 241 (2000) Safeguarding Construction, Alteration, and Demolition Operations

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

- 29 CFR 1910 Occupational Safety and Health Standards for General Industry
- 29 CFR 1926 Safety and Health Regulations for Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

- EM 385-1-1 (2003) Safety and Health Requirements Manual

1.2 Submittals

Government approval is required for submittals with a "G" designation; the USACE Resident Engineer (RE) will review the submittals for the Government. Submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

- Accident Prevention Plan (APP)/Injury and Illness Prevention Program (IIPP); G
- Activity Hazard Analyses (AHA); G

SD-03 Product Data

Exposure Monitoring/Air Sampling Program; G

Personnel and area exposure monitoring/sampling results

Licenses, Permits and Notifications; G

SD-06 Test Reports

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Accident Reports

Monthly Exposure Reports

Regulatory Citations and Violations

SD-07 Certificates

Contractor's State License Board Certificate (California), if required for Asbestos and Hazardous Substance Removal; G

Certificates of Disposal and/or Recycling

Submit copy of each permit/certificate to Daily Quality Control Report.

1.3 Definitions

- a. High Visibility Accident. Any mishap, which may generate publicity and/or high visibility.
- b. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.
- c. Multi-Employer Work Site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors.
- d. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:
 1. Death, regardless of the time between the injury and death, or the length of the illness;
 2. Days away from work;
 3. Restricted work;
 4. Transfer to another job;
 5. Medical treatment beyond first aid;
 6. Loss of consciousness; or
 7. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.
- e. Site Safety and Health Officer (SSHO). The superintendent or other qualified or competent person who is responsible for the on-site safety and health required for the project. The Contractor quality control (QC) person can be the SSHO on this project.
- f. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

1.4 Regulatory Requirements

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, and the following federal, state, and local, laws, criteria, rules and regulations: 29 CFR 1910 "Occupational Safety and Health Standards" and 29 CFR 1926 "Safety and

Health Regulations for Construction” (Federal OSHA); 8 CCR Chapter 4, Subchapter 4 “Construction Safety Orders”, and 8 CCR Chapter 4, Subchapter 7 “General Industry Safety Orders”. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.5 Drug Prevention Program

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A copy of the test shall be made available to the Contracting Officer upon request.

1.6 Site Qualifications, Duties and Meetings

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The SSHO shall meet the following requirements:

- a. Worked on similar projects.
- b. 10-hour OSHA construction safety class or equivalent within last 3 years.
- c. Training for competent person status for at least the following areas of competency: Hazardous energy; Health hazard recognition, evaluation and control of chemical, physical and biological agents; Personal protective equipment and clothing to include selection, use and maintenance; Asbestos Abatement; and Lead Hazard Control.

The SSHO shall have the following responsibilities:

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.
- b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.
- c. Maintain applicable safety reference material on the job site.
- d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- e. Implement and enforce accepted APP/IIPP and AHAs.
- f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.
- g. Ensure sub-contractor compliance with safety and health requirements.

1.6.1.2 First Aid and CPR Trained Persons

At least 2 persons who are currently trained in first aid and CPR by the American Red Cross or other approved agency shall be designated and shall be onsite at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 8 CCR § 5193 and shall be included in the Contractor's Bloodborne Pathogen Program. These persons may perform other duties but shall be immediately available to render first aid when needed. A 16-unit first aid pack shall be available on site and replenished as needed.

1.6.2 Meetings

1.6.2.1. Preconstruction Conference

- a. The Contractor will be informed, in writing, of the date of the preconstruction conference. The purpose of the preconstruction conference is for the Contractor and the Contracting Officer's representatives to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project's APP/IIPP before the initiation of work.
- b. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP/IIPP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- c. The Contractor shall discuss the details of the submitted APP/IIPP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.
- d. Deficiencies in the submitted APP/IIPP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP/IIPP.

1.6.2.2. Weekly Safety Meetings

Conduct weekly safety meetings at the project site for all employees. The Contracting Officer will be informed of the meeting in advance and be allowed attendance. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.6.2.3. Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection. The analysis should be used during daily inspections to ensure the implementation and effectiveness of safety and health controls.

1.7 Training

1.7.1 New Employee Indoctrination

New employees (prime and sub-contractor) shall be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site. The Contractor shall see Section 13280A ASBESTOS ABATEMENT and Section 13281A LEAD HAZARD CONTROL ACTIVITIES for additional training requirements

1.7.2 Periodic Training

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP/IIPP. Ensure all required training has been accomplished for all onsite employees.

1.7.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected employees to include a review of the AHA to be implemented.

1.8 Personal Protective Equipment

1.8.1 Site Specific PPE Program

Onsite personnel exposed to contaminants and safety hazards shall be provided with appropriate personal protective equipment (PPE). PPE must be relevant to site-specific conditions, including heat and cold stress potential and safety hazards. Only respirators approved by NIOSH shall be used. Protective equipment and clothing shall be kept clean and well maintained. The PPE section of the APP/IIPP shall include site-specific procedures for onsite fit-testing of respirators, cleaning, maintenance, inspection, and storage.

1.8.2 Levels of Protection

The Contractor shall establish and evaluate the levels of protection for each work activity as the work progresses. The Contractor shall also establish action levels for upgrade or downgrade in the levels of PPE. Protocols and the communication network for changing the level of protection shall be described in the APP/IIPP. The PPE evaluation protocol shall address air monitoring results, potential for exposure, changes in site conditions, work phases, job tasks, weather, temperature extremes, individual medical considerations, etc.

1.9 Accident Prevention Plan (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP/IIPP. Prepare the APP/IIPP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan" and 8 CCR 1509 "Injury and Illness Prevention Program". Where a paragraph or subparagraph element is not applicable to the work to be performed indicate "Not Applicable" next to the heading. Specific requirements for some of the APP/IIPP elements are described below at paragraph 1.9.1. The APP/IIPP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP/IIPP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP/IIPP shall be included in the applicable APP/IIPP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP/IIPP shall be signed by the person and firm (senior person) preparing the APP/IIPP, the Contractor, the on-site superintendent, and the designated site safety and health officer.

Submit the APP/IIPP to the Contracting Officer 20 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP/IIPP. The Contracting Officer reviews and comments on the Contractor's submitted APP/IIPP and accepts it when it meets the requirements of the contract provisions.

Once accepted by the Contracting Officer, the APP/IIPP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP/IIPP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP/IIPP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any unforeseen hazard become evident during the performance of work, the project superintendent shall inform the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment.

Copies of the accepted plan will be maintained at the job site. The APP/IIPP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP/IIPP shall be incorporated in the plan as they are discovered.

1.9.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

- a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used. The duties of each position shall be specified.
- b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas: fall protection; hazardous energy; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance/ Asbestos Abatement; Lead Hazard Control.
- c. Confined Space Entry Plan. Develop a confined space entry plan in accordance with USACE EM 385-1-1 and 8 CCR § 5156-5158. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
- d. Health Hazard Control Program. The Contractor shall designate a competent and qualified person to establish and oversee a Health Hazard Control Program in accordance with USACE EM 385-1-1, Section 6. The program shall ensure that employees, on-site Government representatives, and others, are not adversely exposed to chemical, physical and biological agents and that necessary controls and protective actions are instituted to ensure health.
- e. Alcohol and Drug Abuse Plan
 1. Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."
 2. Description of the on-site prevention program
- f. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person for fall protection shall prepare and sign the plan. The plan shall include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Fall Protection and Prevention Plan shall be revised reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. The accepted Fall Protection and Prevention Plan shall be kept and maintained at the job site for the duration of the project. The Fall Protection and Prevention Plan shall be included in the APP/IIPP. (If there is no fall hazards in excess of 6 feet, include a statement that no FP&P is required).
- g. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.
- h. Occupant Protection Plan. The safety and health aspects of lead hazard control and asbestos abatement.
- i. Lead Compliance Plan. The safety and health aspects of lead work, prepared in accordance with Section 13281A.
- j. Asbestos Hazard Abatement Plan. The safety and health aspects of asbestos work, prepared in accordance with Section 13280A.

1.10 Activity Hazard Analysis (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 20 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP/IIPP. An AHA shall be developed by the Contractor for every operation involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform work. The analysis must identify and evaluate hazards and outline the proposed methods and techniques for the safe completion of each phase of work. At a minimum, define activity being performed, sequence of work, specific safety and health hazards anticipated, control measures (to include personal protective equipment) to eliminate or reduce each hazard to acceptable levels, equipment to be used, inspection requirements, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall protection methods used. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include requirements for safeguarding excavations. An activity requiring an AHA shall not proceed until the AHA has been accepted by the Contracting Officer's representative and a meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activity, including on-site Government representatives. The Contractor shall document meeting attendance at the preparatory, initial, and follow-up phases of quality control inspection. The AHA shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

Activity hazard analyses shall be updated as necessary to provide an effective response to changing work conditions and activities. The on-site superintendent, site safety and health officer and competent persons used to develop the AHAs, including updates, shall sign and date the AHAs before they are implemented.

The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

1.11 Material Safety Data Sheet(s)

The Contractor shall include in the APP/IIPP a Material Safety Data Sheet (MSDS) for each known or anticipated chemical brought to the site in support of activities.

1.12 Proposition 65

The Contractor shall provide a warning to the employees in compliance with 22 CCR § 12000, Chemicals known to the State of California to Cause Cancer or Reproductive toxicity (Safe Drinking Water and Toxic enforcement Act, Proposition 65).

1.13 Display of Safety Information

Prior to commencement of work, erect a safety bulletin board at the job site. The following information shall be displayed on the safety bulletin board in clear view of the on-site construction personnel, maintained current, and protected against the elements and unauthorized removal:

- a. Map denoting the route to the nearest emergency care facility.
- b. Emergency phone numbers.
- c. Copy of the most up-to-date APP/IIPP.
- d. Current AHA(s).
- e. OSHA 300A Form.
- f. OSHA Safety and Health Protection-On-The-Job Poster.
- g. Confined space entry permit.
- h. Hot work permit, if applicable.
- i. A sign indicating the number of hours worked since last lost workday accident.
- j. Safety and Health Warning Posters.

1.14 Site Safety Reference Materials

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.15 Emergency Medical Treatment

Contractors will arrange for their own emergency medical treatment. The Government has no responsibility to provide emergency medical treatment.

1.16 Reports

1.16.1 Accident Reports

For recordable injuries and illnesses, and property damage accidents resulting in at least \$2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form ENG 3394 and provide the report to the Contracting Officer within one calendar day of the accident. The Contracting Officer will provide copies of any required or special forms.

1.16.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than \$2,000, or any weight handling equipment accident. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.16.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.16.4 Regulatory Citations and Violations

Contact the Contracting Officer immediately of any OSHA or other regulatory agency inspection or visit, and provide the Contracting Officer with a copy of each citation, report, and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.16.5 Hot Work

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit shall be requested from the Contracting Officer. Contractors are required to meet all criteria before a permit is issued. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

- a. Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the facility at quitting time. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.
- b. Accumulation of trays, paper, shavings, sawdust, boxes and other packing materials shall be removed from the facility at the close of each workday and such material disposed of in the proper containers located away from the facility.
- c. The storage of combustible supplies shall be a safe distance from structures.

- d. Area outside the facility undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.
- e. All portable electric devices (saws, sanders, compressors, extension chord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the facility shall be deactivated.
- f. When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes. Any fire, no matter how small, shall be reported immediately.

1.17 Protection of Existing Areas

All activities shall be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, the Contractor shall restore work and areas to the original condition at no additional cost to the Government.

1.18 Coordination with Other Work

The Contractor shall coordinate activities with work being performed in adjacent areas. Coordination procedures shall be explained in the APP/IIPP and shall describe how the Contractor will prevent exposures to other contractors and/or government personnel performing work unrelated to activities associated with this project.

2.0 **PART 2 PRODUCTS**

3.0 **PART 3 EXECUTION**

3.1 Construction and/or Other Work

The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP/IIPP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard shall prevail.

3.1.1 Hazardous Material Use

Each hazardous material must receive approval prior to being brought onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government or Contractor employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government or Contractor employees from being exposed to any hazardous condition that could result from the work or storage. The Prime Contractor shall keep a complete inventory of hazardous materials brought onto the work-site. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

3.1.2 Hazardous Material Exclusion

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.3 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 5 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without

change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 Pre-Outage Coordination Meeting

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 Fall Hazard Protection and Prevention Program

The Contractor shall establish a fall protection and prevention program, if applicable, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and escape procedures.

3.4 Scaffolding

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m (20 feet) in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m (20 feet) in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mudsills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.5 Equipment

3.5.1 Material Handling Equipment

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.
- c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.5.2 Equipment and Mechanized Equipment

- a. Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review.
- b. Manufacture specifications or owner's manual for the equipment shall be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or

USACE EM 385-1-1. Such additional safety precautions or requirements shall be incorporated into the AHAs.

- c. Equipment and mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operation by a competent person prior to being placed into use.
- d. Daily checks or tests shall be conducted and documented on equipment and mechanized equipment by designated competent persons.

3.6 Electrical

All electrical work and installations shall be in compliance with EM 385-1-1, Section 11 and applicable NEC, NFPA, state, and local requirements

3.6.1 *Portable Extension Cords*

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70.

3.6.2 *Ground Fault Circuit Interrupters*

Ground fault circuit interrupter(s) (GFCI)/ground fault interrupter(s) (GFI) shall be trip tested daily by the SSHO. This inspection shall be documented. Personnel shall be trained and reminded to conduct their own GFI test prior to beginning work in or near wet locations.

3.7 Crystalline Silica

Grinding and abrasive blasting of construction materials containing crystalline silica, shall comply with OSHA regulations and USACE EM 385-1-1, Appendix C. The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.8 Housekeeping

3.8.1 *Clean-Up*

All debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

3.8.2 *Falling Object Protection*

All areas must be barricaded to safeguard employees. When working overhead, Barricade the area below to prevent entry by unauthorized employees. Construction warning tape and signs shall be posted so they are clearly visible from all possible access points. When employees are working overhead all tools and equipment shall be secured so that they will not fall. When using guardrail as falling object protection, all openings shall be small enough to prevent passage of potential falling objects.

3.9 Title to Waste Materials

Waste materials resulting from site activities, except as specified otherwise, shall become the property of the Contractor and shall be disposed of in accordance with applicable Federal and California Regulations.

-- End of Section --

**SECTION 13280A
ASBESTOS ABATEMENT**

1.0 PART 1 GENERAL

1.1 References

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z88.2 (1992) Respiratory Protection

ANSI Z9.2 (2001) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM INTERNATIONAL (ASTM)

ASTM D 1331 (1989; R 2001) Surface and Interfacial Tension of Solutions of Surface-active Agents

ASTM D 4397 (2002) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications

ASTM E 1368 (2002) Visual Inspection of Asbestos Abatement Projects

CALIFORNIA CODE OF REGULATIONS (CCR)

8 CCR, Chapter 4, Subchapter 4 Construction Safety Orders

8 CCR, Chapter 4, Subchapter 7 General Industry Safety Orders

8 CCR § 1529 Asbestos

8 CCR § 5144 Respiratory Protection

8 CCR § 1509 Injury and Illness Prevention Program

8 CCR § 5203 Carcinogen Report of Use Requirements

8 CCR § 341.6 – 341.14 Registration Requirements

8 CCR § 5194 Hazard Communication

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 84-100 (1984; 3rd Ed, R: 1994) NIOSH Manual of Analytical Methods

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2003) Safety and Health Requirements Manual

EP 1110-1-11 Asbestos Abatement Guideline Detail Sheets

NOTE: Asbestos Abatement Detail Sheets (item to be abated and methods to be used) and Set-up Detail Sheets (containment techniques to include safety precautions and methods) found in EP 1110-1-11, Asbestos Abatement Guideline Detail Sheets, which is available at <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1110-1-11/toc.htm>.

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90/018	(1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
EPA 340/1-90/019	(1990) Asbestos/NESHAP Adequately Wet Guidance
EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 763	Asbestos
42 CFR 84	Approval of Respiratory Protective Devices
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586	(1996; Rev thru Apr 2000) High-Efficiency, Particulate, Air Filter Units
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1.2 Definitions

- a. Adequately Wet: A term defined in 40 CFR 61, Subpart M, and EPA 340/1-90/019 meaning to sufficiently mix or penetrate with liquid to prevent the release of particulate. If visible emissions are observed coming from asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.
- b. Aggressive Method: Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact asbestos-containing material (ACM).
- c. Asbestos: Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.
- d. Asbestos-Containing Material (CM): Any materials containing more than one percent asbestos.
- e. Authorized Person: Any person authorized by the Contractor and required by work duties to be present in the regulated areas.

- f. Building Inspector: Individual who inspects buildings for asbestos and has EPA Model Accreditation Plan (MAP) "Building Inspector" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.
- g. Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI) and surfacing ACM.
- h. Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM, which is not thermal system insulation 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 mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. Removal of small amounts of these materials, which would fit into a glovebag, may be classified as a Class III job.
- i. Class III Asbestos Work: Activities defined by OSHA that involve repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed.
- j. Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM and activities to clean-up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.
- k. Competent Person: In addition to the definition in 8 CCR Section 1504, a person who is capable of identifying existing asbestos hazards as defined in 8 CCR Section 1529, selecting the appropriate control strategy, has the authority to take prompt corrective measures to eliminate them and has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.
- l. Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; accreditation required by 40 CFR 763, Subpart E, Appendix C.
- m. Critical Barrier: One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.
- n. Demolition: The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.
- o. Disposal Bag: A 0.15 mm 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 8 CCR Section 1529, used for transporting asbestos waste from containment to disposal site.
- p. Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in 1 standard sized glovebag or waste bag, not larger than 1.5 m 60 inches in length and width in order to access a building component.
- q. Equipment Room or Area: An area adjacent to the regulated area used for the decontamination of employees and their equipment.
- r. Employee Exposure: That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.
- s. Friable ACM: A term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart E, Appendix A, Section 1, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent, as determined by a method other than point counting by PLM, the asbestos content is verified by point counting using PLM.
- t. Glovebag: Not more than a 1.5 by 1.5 m 60 by 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.
- u. High-Efficiency Particulate Air (HEPA) Filter: A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

- v. Intact: ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not render the ACM non-intact simply by being separated into smaller pieces.
- w. Model Accreditation Plan (MAP): USEPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763, Subpart E, Appendix C.
- x. Modification: A changed or altered procedure, material or component of a control system, which replaces a procedure, material or component of a required system.
- y. Negative Exposure Assessment: A demonstration by the Contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).
- z. NESHAP: National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61, Subpart M.
- aa. Nonfriable ACM: A NESHAP term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material containing more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart E, Appendix A, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- bb. Nonfriable ACM (Category I): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy.
- cc. Nonfriable ACM (Category II): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos, as determined using the methods specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- dd. Permissible Exposure Limits (PELs):
 - 1. PEL-Time weighted average (TWA): Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8 hour time weighted average (TWA), as determined by the method prescribed in 8 CCR Section 1529, or the current version of NIOSH Pub No. 84-100 analytical method 7400.
 - 2. PEL-Excursion Limit: An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes as determined by the method prescribed in 8 CCR Section 1529, or the current version of NIOSH Pub No. 84-100 analytical method 7400.
- ee. Regulated Area: An OSHA term defined in 8 CCR Section 1529 meaning an area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted; also any adjoining area where debris and waste from such asbestos work accumulate; and an area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.
- ff. Removal: All operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.
- gg. Repair: Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates. If the amount of asbestos so "disturbed" cannot be contained in 1 standard glovebag or waste bag, Class I precautions are required.
- hh. Spills/Emergency Cleanups: Cleanup of sizable amounts of asbestos waste and debris which has occurred, for example, when water damage occurs in a building, and sizable amounts of ACM are dislodged. A Competent Person evaluates the site and ACM to be handled, and based on the type, condition and extent of the dislodged material, classifies the cleanup as Class I, II, or III. Only if the material was intact and the cleanup involves mere contact of ACM, rather than disturbance, could there be a Class IV classification.
- ii. Surfacing ACM: Asbestos-containing material which contains more than 1% asbestos and is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

- jj. Thermal system insulation (TSI) ACM: ACM which contains more than 1% asbestos and is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation.
- kk. Transite: A generic name for asbestos cement wallboard and pipe.
- ll. Worker: Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 8 CCR Section 1529, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation required by 40 CFR 763, Subpart E, Appendix C, if required by the OSHA Class of work to be performed or by the state where the work is to be performed.
- mm. Asbestos Containing Construction Material (ACCM): Any manufactured construction material, which contains more than one tenth of 1 percent asbestos by weight. (California)
- nn. Asbestos Consultant: Person who contracts to provide professional health and safety services relating to ACCM, which comprises 100 square feet or more of surface area. The activities of an asbestos consultant include building inspection, abatement project design, contract administration, sample collection preparation of asbestos management plans, clearance monitoring, and supervision of site surveillance technicians. (California)
- oo. Site Surveillance Technician: Person who acts as an independent on-site representative of an asbestos consultant who monitors the asbestos abatement activities and provides asbestos air monitoring services for area and personal samples. (California)

1.3 Description of Work

The work covered by this section includes the removal of asbestos-containing materials (ACM) which are encountered during renovation activities associated with this project and describes procedures and equipment required to protect workers and occupants of the regulated area from contact with airborne asbestos fibers and ACM dust and debris. Activities may include OSHA Class I, Class II, and Class III work operations involving ACM. Additionally, this section describes procedures/work practices for ACCM that is encountered during renovation activities. The work also includes containment, storage, transportation and disposal of the generated ACM/ACCM wastes. More specific operational procedures shall be detailed in the required APP/IIPP, the AHAP and AHAs required in paragraph SAFETY AND HEALTH PROGRAM AND PLANS. The Contractor shall consider that all toilet wax rings/seals, pipe wrap/lagging, and wallboard/joint compound materials contain ACM/ACCM.

1.3.1 Unexpected Discovery of Asbestos

For any building components suspected to contain asbestos and located in areas impacted by the work, the Contractor shall notify the Contracting Officer (CO) who will have the option of ordering up to 10 bulk samples to be obtained at the Contractor's expense and delivered to a laboratory accredited under the National Institute of Standards and Technology (NIST) "National Voluntary Laboratory Accreditation Program (NVLAP)" and analyzed by PLM at no additional cost to the Government. If the asbestos content is less than 10 percent, as determined by a method other than point counting, the asbestos content shall be verified by point counting. Any additional components identified as ACM that have been approved by the Contracting Officer for removal shall be removed by the Contractor and will be paid for by an equitable adjustment to the contract price under the CONTRACT CLAUSE titled "changes". Sampling activities undertaken to determine the presence of additional ACM/ACCM shall be conducted by personnel who have successfully completed the EPA Model Accreditation Plan (MAP) "Building Inspector" training course required by 40 CFR 763, Subpart E, Appendix C and who are California Certified Asbestos Consultant or Certified Site Surveillance Technician..

1.4 Submittals

Government approval is required for submittals with a "G" designation; the USACE Resident Engineer (RE) will review the submittals for the Government. Submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Respiratory Protection Program; G

Cleanup and Disposal; G

Waste shipment records. Weigh bills and delivery tickets shall be furnished for information only.

Detailed Drawings; G

Descriptions, detail project drawings, and site layout to include worksite containment area techniques as prescribed on applicable SET-UP DETAIL SHEETS, local exhaust ventilation system locations, decontamination units and load-out units, other temporary waste storage facility, access tunnels, location of temporary utilities (electrical, water, sewer) and boundaries of each regulated area.

Materials and Equipment;

- a. Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information. Test results and certificates from the manufacturer of encapsulants substantiating compliance with performance requirements of this specification. Material Safety Data Sheets for all chemicals to be used onsite in the same format as implemented in the Contractor's HAZARD COMMUNICATION PROGRAM.

NOTE: The Contractor shall provide a warning to the employees in compliance with 22 CCR Section 12000, Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity (Safe Drinking Water and Toxic Enforcement Act, Proposition 65).

Qualifications; G

A written report providing evidence of qualifications for personnel, facilities and equipment assigned to the work.

Training Program;

A copy of the written project site-specific training material as indicated in 8 CCR Section 1529 that will be used to train onsite employees. The Contractor's SSHO and Competent Person shall sign the training document.

Medical Requirements;

Encapsulants; G,

Certificates stating that encapsulants meet the applicable specified performance requirements.

SD-06 Test Reports

Exposure Assessment and Air Monitoring;

Initial exposure assessments, negative exposure assessments, air-monitoring results and documentation.

Local Exhaust Ventilation;

Pressure differential recordings.

Licenses, Permits and Notifications; G

SD-07 Certificates

Vacuum, Filtration and Ventilation Equipment;

Manufacturer's certifications showing compliance with ANSI Z9.2 for:

- a. Vacuums.
- b. Water filtration equipment.
- c. Ventilation equipment.
- d. Other equipment required to contain airborne asbestos fibers.

1.5 Qualifications

1.5.1 Written Qualifications and Organization Report

The Contractor shall furnish a written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's Project Supervisor, Designated Competent Person, supervisors and workers; SSHO; independent testing laboratory; all subcontractors to be used including disposal transportation and disposal facility firms, subcontractor supervisors, subcontractor workers; and any others assigned to perform asbestos abatement and support activities. The report shall include an organization chart showing the Contractor's staff organization for this project by name and title, chain of command and reporting relationship with all subcontractors. The Contractor, the Contractor's onsite project manager, and Designated Competent Person, SSHO shall sign the report. The Contractor shall include the following statement in the report: "By signing this report I certify that the personnel I am responsible for during the course of this project fully understand the contents of 8 CCR Section 1529, 40 CFR 61, Subpart M, and the federal, state and local requirements specified in paragraph SAFETY AND HEALTH PROGRAM AND PLANS for those asbestos abatement activities that they will be involved in."

1.5.2 Specific Requirements

The Contractor shall designate in writing, personnel meeting the following qualifications:

- a. Contractor: The Contractor shall be certified by the Contractors State License Board (California) and registered with the Division of Occupational Safety and Health for asbestos-related work.
- b. Designated Competent Person: Evidence that the full-time Designated Competent Person is qualified in accordance with 8 CCR Section 1529, has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, is a California Certified Asbestos Consultant, and is experienced in the administration and supervision of asbestos abatement projects, including exposure assessment and monitoring, work practices, abatement methods, protective measures for personnel, setting up and inspecting asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees onsite, etc. The duties of the Competent Person shall include the following: controlling entry to and exit from the regulated area; supervising any employee exposure monitoring required by 8 CCR Section 1529; ensuring that all employees working within a regulated area wear the appropriate personal protective equipment (PPE), are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified; and ensuring that engineering controls in use are in proper operating conditions and are functioning properly. The Designated Competent Person shall be responsible for compliance with applicable federal, state and local requirements, the Contractor's APP/IIPP and AHAP. The Contractor shall submit evidence that this person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person

- requirements. The Designated Competent Person shall be onsite at all times during the conduct of this project.
- c. Site Safety and Health Officer (SSHO): The Contractor shall provide the resume and other information specified below for the SSHO selected to prepare the Contractor's AHAP, prepare and perform training, direct air monitoring and assist the Contractor's Competent Person in implementing and ensuring that safety and health requirements are complied with during the performance of all required work. The SSHO shall be a person who has EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, and has a minimum of 2 years of comprehensive experience in planning and overseeing asbestos abatement activities.
 - d. Asbestos Abatement Workers: Asbestos abatement workers shall meet the requirements contained in 8 CCR Section 1529, 40 CFR 61, Subpart M, and other applicable federal, state and local requirements.
 - e. Worker Training and Certification of Worker Acknowledgment: Training documentation is required for each employee who will perform OSHA Class I, Class II, Class III, or Class IV asbestos abatement operations. Such documentation shall be submitted on a Contractor generated form titled "Certificate of Workers Acknowledgment", to be completed for each employee in the same format and containing the same information as the example certificate at the end of this section. Training course completion certificates (initial and most recent update refresher) required by the information checked on the form shall be attached.
 - f. Physician: The Contractor shall provide the name, medical qualifications, address, telephone number and resume of the physician who will or has performed the medical examinations and evaluations of the persons who will conduct the asbestos abatement work tasks. The physician shall be currently licensed by the state where the workers will be or have been examined, have expertise in pneumoconiosis and shall be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 8 CCR Section 1529. The physician shall be familiar with the site's hazards and the scope of this project.
 - g. Independent Testing Laboratory: The Contractor shall provide the name, address and telephone number of the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by federal, state or local regulations. Written verification of the following criteria, signed by the testing laboratory principal and the Contractor, shall be submitted:
 1. Phase contrast microscopy (PCM): The laboratory is fully equipped and proficient in conducting PCM of airborne samples using the methods specified by 8 CCR Section 1529, OSHA method ID-160, the most current version of NIOSH 84-100 Method 7400, and NIOSH 84-100 Method 7402, transmission electron microscopy (TEM); the laboratory is currently judged proficient (classified as acceptable) in counting airborne asbestos samples by PCM by successful participation in each of the last 4 rounds in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program.
 2. Polarized light microscopy (PLM): The laboratory is fully equipped and proficient in conducting PLM analyses of suspect ACM bulk samples in accordance with 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for bulk asbestos analysis and will use analysts with demonstrated proficiency to conduct PLM to include its application to the identification and quantification of asbestos content.
 3. Transmission electron microscopy (TEM): The laboratory is fully equipped and proficient in conducting TEM analysis of airborne samples using the mandatory method specified by 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by NIST under the NVLAP for airborne sample analysis of asbestos by TEM; the laboratory will use analysts that are currently evaluated as competent with demonstrated proficiency under the NIST NVLAP for airborne sample analysis of asbestos by TEM.
 4. PCM/TEM: The laboratory is fully equipped and each analyst (name shall be provided) possesses demonstrated proficiency in conducting PCM and TEM analysis of airborne samples using NIOSH 84-100 Method 7400 PCM and NIOSH 84-100 Method 7402 (TEM confirmation of asbestos content of PCM results) from the same filter.

- h. Disposal Facility, Transporter: The Contractor shall provide written evidence that the landfill to be used is approved for asbestos disposal by the USEPA, California and local regulatory agencies. Copies of signed agreements between the Contractor (including subcontractors and transporters) and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste generated during the performance of this contract shall be provided. Qualifications shall be provided for each subcontractor or transporter to be used, indicating previous experience in transport and disposal of asbestos waste to include all required state and local waste hauler requirements for asbestos. The Contractor and transporters shall meet the DOT requirements of 49 CFR 171, 49 CFR 172, and 49 CFR 173 as well as registration requirements of 49 CFR 107 and other applicable state or local requirements. The disposal facility shall meet the requirements of 40 CFR 61, Sections .154 or .155, as required in 40 CFR 61, Section .150(b), and other applicable state or local requirements.

1.5.3 Federal, State or Local Citations on Previous Projects

The Contractor and all subcontractors shall submit a statement, signed by an officer of the company, containing a record of any citations issued by Federal, State or local regulatory agencies relating to asbestos activities (including projects, dates, and resolutions); a list of penalties incurred through non-compliance with asbestos project specifications, including liquidated damages, overruns in scheduled time limitations and resolutions; and situations in which an asbestos-related contract has been terminated (including projects, dates, and reasons for terminations). If there are none, a negative declaration signed by an officer of the company shall be provided.

1.6 Regulatory Requirements

In addition to detailed requirements of this specification, work performed under this contract shall comply with EM 385-1-1, applicable federal, state, and local laws, ordinances, criteria, rules and regulations regarding handling, storing, transporting, and disposing of asbestos waste materials. This includes, but is not limited to, 8 CCR Section 1529, 40 CFR 61, Subpart M and 40 CFR 763. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply. The following state and local laws, rules and regulations regarding construction alteration/renovation, spill/emergency cleanup, housekeeping, handling, storing, transporting and disposing of asbestos material apply: DOT 49 CFR 107, 171, 172 - 173.

1.7 Safety and Health Program and Plans

The Contractor shall develop and submit a written comprehensive site-specific APP/IIPP at least 20 days prior to the pre-construction conference. The APP/IIPP shall address requirements of EM 385-1-1, Appendix A, and 8 CCR Section 1509 covering onsite work to be performed by the Contractor and subcontractors. The APP/IIPP shall incorporate an AHAP, and AHAs as separate appendices into 1 site-specific APP/IIPP document. Any portions of the Contractor's overall Safety and Health Program that are referenced in the APP, e.g., respirator program, hazard communication program, confined space entry program, etc., shall be included as appendices to the APP/IIPP. The plan shall take into consideration all the individual asbestos abatement work tasks. The plan shall be prepared, signed, and dated by the Contractor's SSSHO, Competent Person, and Project Supervisor. The contractor shall see additional Safety and Health program and specified plans in Section 01525 "Safety and Occupational Health Requirements".

1.7.1 Asbestos Hazard Abatement Plan Appendix

The Asbestos Hazard Abatement Plan appendix to the APP/IIPP shall include, but not be limited to, the following:

- a. The personal protective equipment to be used;
- b. The location and description of regulated areas including clean and dirty areas, access tunnels, and decontamination unit (clean room, shower room, equipment room, storage areas such as load-out unit);
- c. Initial exposure assessment in accordance with 8 CCR Section 1529;
- d. Level of supervision;

- e. Method of notification of other employers at the worksite;
- f. Abatement method to include containment and control procedures;
- g. Interface of trades involved in the construction;
- h. Sequencing of asbestos related work;
- i. Storage and disposal procedures and plan;
- j. Type of wetting agent and asbestos encapsulant to be used;
- k. Location of local exhaust equipment;
- l. Air monitoring methods (personal, environmental and clearance);
- m. Bulk sampling and analytical methods (if required);
- n. A detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fiber concentrations;
- o. Fire and medical emergency response procedures;
- p. The security procedures to be used for all regulated areas.

1.7.2 Activity Hazard Analyses Appendix

AHAs, for each major phase of work, shall be submitted and updated during the project. The AHA format shall be in accordance with EM 385-1-1. The analyses shall define the activities to be performed, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level.

1.7.3 Occupant Protection Plan Appendix

The Contractor shall develop and implement an Occupant Protection Plan describing the measures and management procedures to protect the building occupants/building facilities and the environment from exposure to any lead contamination.

1.8 Preconstruction Conference and Onsite Safety

The contractor, Project Supervisor, and SSHO shall meet with the Contracting Officer (CO) prior to beginning work at a pre-construction conference to discuss the details of the contractor's submitted APP/IIPP. Once accepted by the Contracting Officer, the APP/IIPP, including the AHAP and AHAs will be enforced as if an addition to the contract. Disregarding the provisions of this contract or the accepted APP/IIPP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

1.9 Security

A logbook shall be kept documenting entry into and out of the regulated area. Entry into regulated areas shall only be by personnel authorized by the Contractor and the Contracting Officer. Personnel authorized to enter regulated areas shall be trained, be medically evaluated, and wear the required personal protective equipment for the specific regulated area to be entered.

1.10 Medical Requirements

Medical requirements shall conform to 8 CCR Section 1529.

1.10.1 Medical and Exposure Records

Complete and accurate records shall be maintained of each employee's medical examinations, medical records, and exposure data, as required by 8 CCR Section 1529 for a period of 50 years after termination of employment. A copy of the required medical certification for each employee shall be maintained on file at the worksite for review, as requested by the CO or the employee representatives.

1.11 Training Program

1.11.1 General Training Requirements

The Contractor shall establish a training program as specified by EPA Model Accreditation Plan (MAP), training requirements at 40 CFR 763, Subpart E, Appendix C, the State of California OSHA requirements at 8 CCR Section 1529 and this specification. Contractor employees shall complete the required training

for the type of work they are to perform and such training shall be documented and provided to the CO as specified in paragraph Qualifications. Employees shall be trained and certified by a CAL-OSHA approved training provider. Contractor employees shall complete the required training for the type of work they are to perform and such training shall be documented and provided to the CO as specified in paragraph Qualifications.

1.11.2 Project Specific Training

Prior to commencement of work, the Contractor's SSHO and Competent Person shall instruct each worker in the following project specific training:

- a. The hazards and health effects of the specific types of ACM to be abated;
- b. The content and requirements of the Contractor's AAPP/IIPP to include the AHAP Plan and AHAs and site-specific safety and health precautions;
- c. Hazard Communication Program;
- d. Hands-on training for each asbestos abatement technique to be employed;
- e. Heat and/or cold stress monitoring specific to this project;
- f. Air monitoring program and procedures;
- g. Medical surveillance to include medical and exposure record-keeping procedures;
- h. The association of cigarette smoke and asbestos-related disease;
- i. Security procedures;
- j. Specific work practice controls and engineering controls required for each Class of work in accordance with 8 CCR Section 1529.

1.12 Respiratory Protection Program

The contractor shall establish and implement a respiratory protection program (if required) in accordance with 8 CCR Section 1529, 8 CCR Section 5144, and ANSI Z88.2.

1.12.1 Respiratory Fit Testing

A qualitative or quantitative fit test conforming to 8 CCR Section 1529 shall be conducted for each worker required to wear a respirator.

1.12.2 Respirator Selection and Use Requirements

The contractor shall provide respirators, and ensure that they are used as required by 8 CCR Section 1529 and in accordance with the manufacturer's recommendations. Respirators shall be approved by the National Institute for Occupational Safety and Health (NIOSH), under the provisions of 42 CFR 84, for use in environments containing lead. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved shall be high-efficiency particulate air (HEPA) (P 100). Respirators shall be used during all work where employees are exposed above the PEL-TWA or PEL-Excursion Limit.

Respirators shall be used in the following circumstances:

- a. During all Class I asbestos jobs.
- b. During all Class II work where the ACM is not removed in a substantially intact state.
- c. During all Class II and III work, which is not, performed using wet methods. Respirators need not be worn during removal of ACM from sloped roofs when a negative exposure assessment has been made and ACM is removed in an intact state.
- d. During all Class II and III asbestos jobs where the Contractor does not produce a negative exposure assessment.
- e. During all Class III jobs where TSI or surfacing ACM is being disturbed.
- f. During all Class IV work performed within regulated areas where employees performing other work are required to wear respirators.
- g. During all work where employees are exposed above the PEL-TWA or PEL-Excursion Limit.
- h. In emergencies

1.12.3 Class I Work

The Contractor shall provide: (1) a tight-fitting, powered air purifying respirator equipped with high efficiency filters, or (2) a full-facepiece supplied air respirator operated in the pressure demand mode,

equipped with HEPA egress cartridges, or (3) an auxiliary positive pressure self-contained breathing apparatus, for all employees within the regulated area where Class I work is being performed; provided that a negative exposure assessment has not been produced, and that the exposure level will not exceed 1 f/cc as an 8-hour time weighted average. A full-facepiece supplied air respirator, operated in the pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus shall be provided under such conditions, if the exposure assessment indicates exposure levels above 1 f/cc as an 8-hour time weighted average.

1.12.4 Class II and III Work

The Contractor shall provide an air purifying respirator, other than a disposable respirator, equipped with high-efficiency filters whenever the employee performs Class II and III asbestos jobs where the Contractor does not produce a negative exposure assessment; and Class III jobs where TSI or surfacing ACM is being disturbed.

1.12.5 Sanitation

Employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator facepieces whenever necessary to prevent skin irritation associated with respirator use.

1.13 Hazard Communication Program

A hazard communication program shall be established and implemented in accordance with 8 CCR Section 5194. MSDSs shall be provided for all hazardous materials brought onto the worksite. The Contractor shall provide a warning to the employees in compliance with 22 CCR Section 12000, Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity (Safe Drinking Water and Toxic Enforcement Act, Proposition 65).

1.14 Licenses, Permits and Notifications

Necessary licenses, permits and notifications shall be obtained in conjunction with the project's asbestos abatement, transportation and disposal actions and timely notifications furnished of such actions as required by Federal, state, regional, and local authorities. For licenses, permits, and notifications that the Contractor is responsible for obtaining, the Contractor shall pay any associated fees or other costs incurred. The Contractor must have a state license to do work in the state of California. The contractor shall be registered with CAL-OSHA and meet all criteria for doing work with asbestos-containing building materials (ACBM).

1.14.1 General Legal Requirements

Necessary licenses, permits and notifications shall be obtained in conjunction with the project's tasks, transportation and disposal actions and timely notification furnished of such actions as required by federal, state, regional, and local authorities. The contractor is responsible for any associated fees or other costs incurred for licenses, permits, and notifications.

1.14.2 Litigation and Notification

The Contractor shall notify the Contracting Officer if any of the following occur:

- a. The Contractor or any of the subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this contract;
- b. Proceedings are commenced which could lead to revocation of related permits or licenses; permits, licenses or other Government authorizations relating to this contract are revoked;
- c. Litigation is commenced which would affect this contract;
- d. The Contractor or any of the subcontractors become aware that their equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.15 Personal Protective Equipment (PPE)

The Contractor shall describe the PPE to be used to protect workers from asbestos hazards in the AHAP. Three complete sets of personal protective equipment shall be made available to the Contracting Officer and authorized visitors for entry to the regulated area. Contracting Officer and authorized visitors shall be

provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of the required personal protective equipment and the site safety and health requirements. Contractor workers shall be provided with personal protective clothing and equipment and the Contractor shall ensure that it is worn properly. The Contractor's SSHO and Designated Competent Person shall select and approve all the required personal protective clothing and equipment to be used.

1.15.1 Respirators

The contractor shall establish and implement a respiratory protection program (if required) in accordance with 8 CCR Section 1529, 8 CCR Section 5144, and ANSI Z88.2.

1.15.2 Whole Body Protection

Personnel exposed to airborne concentrations of asbestos that exceed the PELs, or for all OSHA Classes of work for which a required negative exposure assessment is not produced, shall be provided with whole body protection and such protection shall be worn properly. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the regulated area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the regulated area or be properly laundered in accordance with 8 CCR Section 1529.

1.15.2.1. Coveralls

Disposable-breathable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.

1.15.2.2. Work Clothing

An additional coverall shall be provided when the abatement and control method employed does not provide for the exit from the regulated area directly into an attached decontamination unit.

1.15.2.3. Gloves

Gloves shall be provided to protect the hands. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) a suitable glove shall be provided and used.

1.15.2.4. Foot Coverings

Footwear, as required by OSHA and EM 385-1-1, that is appropriate for safety and health hazards in the area shall be worn. Rubber boots shall be used in moist or wet areas.

1.15.2.5. Head Covering

Hood type disposable head covering shall be provided. In addition, protective head gear (hard hats) shall be provided as required. Hard hats shall only be removed from the regulated area after being thoroughly decontaminated.

1.15.2.6. Protective Eye Wear

Eye protection provided shall be in accordance with ANSI Z87.1.

1.16 Hygiene Facilities and Practices

The Contractor shall establish a decontamination area for the decontamination of employees, material and equipment. The Contractor shall ensure that employees enter and exit the regulated area through the decontamination area.

1.16.1 Shower Facilities

Shower facilities, when provided, shall comply with 8 CCR Section 1529.

1.16.2 Lunch Areas

The Contractor shall provide lunch areas in which the airborne concentrations of asbestos are below 0.01 f/cc.

1.16.3 Smoking

Smoking, if allowed by the Contractor, shall only be permitted in designated areas approved by the Contracting Officer.

1.17 Regulated Areas

All Class I, II, and III asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they shall demarcate the regulated area. Access to regulated areas shall be limited to authorized persons. The Contractor shall control access to regulated areas, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

1.18 Warning Signs and Tape

Warning signs and tape printed bilingually in English and Spanish shall be provided at the regulated boundaries and entrances to regulated areas. The Contractor shall ensure that all personnel working in areas contiguous to regulated areas comprehend the warning signs. Signs shall be located to allow personnel to read the signs and take the necessary protective steps required before entering the area. Warning signs shall be in vertical format conforming to 8 CCR Section 1529, a minimum of 500 by 350 mm 20 by 14 inches, and displaying the following legend in the lower panel:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
[RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA]

Spacing between lines shall be at least equal to the height of the upper of any two lines. Warning tape shall be provided.

1.19 Warning Labels

Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements are acceptable. Warning labels shall conform to 8 CCR Section 1529 and shall be of sufficient size to be clearly legible displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

1.20 Local Exhaust Ventilation

Local exhaust ventilation units shall conform to ANSI Z9.2 and 8 CCR Section 1529. Filters on local exhaust system equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled.

1.21 Tools

Vacuums shall be leak proof to the filter, equipped with HEPA filters, of sufficient capacity and necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system, or has otherwise been approved for use by the Contracting Officer. Residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from regulated areas.

1.22 Rental Equipment

If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.23 Air Monitoring Equipment

The Contractor's SSHO shall approve air monitoring equipment to be used to collect samples. The equipment shall include, but shall not be limited to:

- a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute when equipped with a sampling train of tubing and filter cassette.
- b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit, which shall maintain a constant flow, even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
- c. Single use standard 25 mm diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive extension cowl, and shrink bands, to be used with low flow pumps in accordance with 8 CCR Section 1529 for personal air sampling.
- d. Single use standard 25 mm diameter cassette, open face, 0.45 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive cowl, and shrink bands, to be used with high flow pumps when conducting environmental area sampling using NIOSH 84-100 Methods 7400 and 7402, (and the transmission electric microscopy method specified at 40 CFR 763 if required).
- e. Appropriate plastic tubing to connect the air-sampling pump to the selected filter cassette.
- f. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 20 to plus 60 degrees C minus 4 to plus 140 degrees F and traceable to a NIST primary standard.

1.24 Expendable Supplies

1.24.1 Glovebag

Glovebags shall be provided as described in 8 CCR Section 1529. The glovebag assembly shall be 0.15 mm 6-mil thick plastic, prefabricated and seamless at the bottom with preprinted OSHA warning label.

1.24.2 Duct Tape

Industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposal container shall be provided.

1.24.3 Disposal Containers

Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposal containers shall be provided for ACM wastes as required by 8 CCR Section 1529.

1.24.4 Disposal Bags

Leak-tight bags, 0.15 mm 6 mil thick, shall be provided for placement of asbestos generated waste.

1.24.5 Sheet Plastic

Sheet plastic shall be polyethylene of 0.15 mm 6 mil minimum thickness and shall be provided in the largest sheet size necessary to minimize seams. Film shall be frosted and conform to ASTM D 4397.

1.24.5.1. Flame Resistant

Where a potential for fire exists, flame-resistant sheets shall be provided. Film shall be frosted and shall conform to the requirements of NFPA 701.

1.24.5.2. Reinforced

Reinforced sheets shall be provided where high skin strength is required, such as where it constitutes the only barrier between the regulated area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between 2 layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

1.24.6 Amended Water

Amended water shall meet the requirements of ASTM D 1331.

1.24.7 Mastic Removing Solvent

Mastic removing solvent shall be nonflammable and shall not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used onsite shall have a flash point greater than 60 degrees C. 140 degrees F.

1.24.8 Leak-Tight Wrapping

Two layers of 0.15 mm 6 mil minimum thick polyethylene sheet stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments and other materials too large to be placed in disposal bags. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

1.24.9 Viewing Inspection Window

Where feasible, a minimum of 1 clear, 3 mm 1/8 inch thick, acrylic sheet, 450 by 610 mm 18 by 24 inches, shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. The windows shall be sealed leak-tight with industrial grade duct tape.

1.24.10 Wetting Agents

Removal encapsulant (a penetrating encapsulant) shall be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM greater than or equal to that provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS.

1.24.11 Strippable Coating

Strippable coating in aerosol cans shall be used to adhere to surfaces and to be removed cleanly by stripping, at the completion of work. This work shall only be done in well-ventilated areas.

1.25 Miscellaneous Items

A sufficient quantity of other items, such as, but not limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of containments, UL approved temporary electrical equipment, material and cords, ground fault circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc., shall be provided.

2.0 **PART 2 PRODUCTS**

3.0 **PART 3 EXECUTION**

3.1 General Requirements

Asbestos abatement work tasks shall be performed as detailed in the Contractor's APP/IIPP, AHAP, and the AHAs. The Contractor shall use the engineering controls and work practices required in 8 CCR Section 1529 in all operations regardless of the levels of exposure. Personnel shall wear and utilize protective clothing and equipment as specified. The Contractor shall not permit eating, smoking, drinking, chewing or applying cosmetics in the regulated area. All hot work (burning, cutting, welding, etc.) shall be conducted under controlled conditions in conformance with 8 CCR, Chapter 4, Subchapter 4, Article 36. Personnel of other trades, not engaged in asbestos abatement activities, shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions of the Contractor's APP are complied with. Power to the regulated area shall be locked-out and tagged in accordance with 8 CCR Section 3314, and temporary electrical service with ground fault circuit interrupters shall be provided as needed. Temporary electrical service shall be disconnected when necessary for wet removal. The Contractor shall stop abatement work in the regulated area immediately when the airborne total fiber concentration: 1) equals or exceeds 0.01 f/cc, or the pre-abatement concentration, whichever is greater, outside the regulated area; or 2) equals or exceeds 1.0 f/cc inside the regulated area. The Contractor shall correct the condition to the satisfaction of the CO, including visual inspection and air sampling. Work shall resume only upon notification by the CO. Corrective actions shall be documented.

3.2 Protection of Adjacent Work or Areas to Remain

Asbestos abatement shall be performed without damage to or contamination of adjacent work or area. Where such work or area is damaged or contaminated, as verified by the Contracting Officer using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Government, as deemed appropriate by the Contracting Officer. This includes inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, work shall stop in all effected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and air sampling analysis results are obtained and have been evaluated by the Contractor's SSHO and the Contracting Officer, work shall proceed.

3.3 Building Ventilation System and Critical Barriers

Building ventilating systems supplying air into or returning air out of a regulated area shall be shut down and isolated by lockable switch or other positive means in accordance with 8 CCR Section 1529. Air-tight critical barriers shall be installed on building ventilating openings located inside the regulated area that supply or return air from the building ventilation system or serve to exhaust air from the building. The critical barriers shall consist of air-tight rigid covers for building ventilation supply and exhaust grills where the ventilation system is required to remain in service during abatement.

3.4 Methods of Compliance

3.4.1 Mandated Practices

The Contractor shall employ proper handling procedures in accordance with 8 CCR Section 1529 and 40 CFR 61, Subpart M, and the specified requirements. The specific abatement techniques and items identified shall be detailed in the Contractor's AHAP including, but not limited to, details of construction materials, equipment, and handling procedures. The Contractor shall use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

- a. Vacuum cleaners equipped with HEPA filters to collect debris and dust containing ACM.
- b. Wet methods or wetting agents to control employee exposures during asbestos handling, mixing, removal, cutting, application, and cleanup; except where it can be demonstrated that the use of wet methods is unfeasible due to, for example, the creation of electrical hazards, equipment malfunction, and in roofing.
- c. Prompt clean up and disposal in leak-tight containers of wastes and debris contaminated with asbestos.

- d. Inspection and repair of polyethylene in work and high traffic areas.
- e. Cleaning of equipment and surfaces of containers filled with ACM prior to removing them from the equipment room or area.

3.4.2 Control Methods

The Contractor shall use the following control methods to comply with the PELs:

- a. Local exhaust ventilation equipped with HEPA filter dust collection systems;
- b. Enclosure or isolation of processes producing asbestos dust;
- c. Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter;
- d. Use of other work practices and engineering controls;
- e. Where the feasible engineering and work practice controls described above are not sufficient to reduce employee exposure to or below the PELs, the Contractor shall use them to reduce employee exposure to the lowest levels attainable by these controls and shall supplement them by the use of respiratory protection.

3.4.3 Unacceptable Practices

The following work practices and engineering controls shall not be used for work related to asbestos or for work, which disturbs ACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

- a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
- b. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
- c. Dry sweeping, shoveling, or other dry clean-up of dust and debris containing ACM.
- d. Employee rotation as a means of reducing employee exposure to asbestos.

3.4.4 Class I Work Procedures

In addition to requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

- a. A Competent Person shall supervise the installation and operation of the control system.
- b. For jobs involving the removal of more than 7.5 m 25 feet or 0.9 square meters 10 square feet of TSI or surfacing material, the Contractor shall place critical barriers over all openings to the regulated area.
- c. HVAC systems shall be isolated in the regulated area by sealing with a double layer of plastic or airtight rigid covers.
- d. Impermeable dropcloths (0.15 mm 6 mil or greater thickness) shall be placed on surfaces beneath all removal activity.
- e. Objects within the regulated area shall be handled as specified.
- f. Where a negative exposure assessment has not been provided or where exposure monitoring shows the PEL was exceeded, the regulated area shall be ventilated to move contaminated air away from the employee's breathing zone toward a HEPA unit or collection device.

3.4.5 Specific Control Methods for Class I Work

In addition to requirements of paragraph Class I Work Procedures, Class I asbestos work shall be performed using the control methods identified in the subparagraphs below.

3.4.5.1. Negative Pressure Enclosure (NPE) System

The NPE system shall provide at least 4 air changes per hour inside the containment. The local exhaust unit equipment shall be operated 24 hours per day until the containment is removed, and shall be leak-proof to the filter and equipped with HEPA filters. Air movement shall be directed away from the employees and toward a HEPA filtration device. The NPE shall be smoke tested for leaks at the beginning of each shift. Local exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.5 mm

0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential shall be monitored continuously, 24 hours per day, with an automatic manometric recording instrument. Pressure differential recordings shall be provided daily on the same day collected. The Contractor's Designated Competent Person and SSHO shall review Readings prior to submittal. The Contracting Officer shall be notified immediately if the pressure differential falls below the prescribed minimum. The building ventilation system shall not be used as the local exhaust system for the regulated area. The local exhaust system shall terminate outdoors unless the Contract Officer allows an alternate arrangement. All filters used shall be new at the beginning of the project and shall be periodically changed as necessary and disposed of as ACM waste.

3.4.5.2. Glovebag Systems

The glovebag system shall be used to remove ACM from straight runs of piping and elbows and other connections. Glovebags shall be used without modification and shall be smoke-tested for leaks and any leaks sealed prior to use. Glovebags shall be installed to completely cover the circumference of pipe or other structures where the work is to be done. Glovebags shall be used only once and shall not be moved. Glovebags shall not be used on surfaces that have temperatures exceeding 66 degrees C. 150 degrees F. Prior to disposal, glovebags shall be collapsed by removing air within them using a HEPA vacuum. Before beginning the operation, loose and friable material adjacent to the glovebag operation shall be wrapped and sealed in 2 layers of plastic or otherwise rendered intact. At least 2 persons shall perform Class I glovebag removal. Asbestos regulated work areas shall be established as specified and shown on detailed drawings and plans for glovebag abatement. Designated boundary limits for the asbestos work shall be established with rope or other continuous barriers and all other requirements for asbestos control areas shall be maintained, including area signage and boundary warning tape. The Contractor shall attach HEPA vacuum systems or other devices to the bag to prevent collapse during removal of ACM from straight runs of piping and elbows and other connections.

3.4.5.3. Wrap and Cut Operation

Prior to cutting pipe, the asbestos-containing insulation shall be wrapped with polyethylene and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. The following steps shall be taken: install glovebag, strip back sections to be cut 150 mm 6 inches from point of cut, and cut pipe into manageable sections.

3.4.6 Class II Work

In addition to the requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

- a. A Competent Person shall supervise the work.
- b. For indoor work, critical barriers shall be placed over all openings to the regulated area.
- c. Impermeable dropcloths shall be placed on surfaces beneath all removal activity.

3.4.7 Specific Control Methods for Class II Work

In addition to requirements of paragraph Class II Work, Class II work shall be performed using the following methods:

3.4.7.1. Gaskets

Gaskets shall be thoroughly wetted with amended water prior to removal and immediately placed in a disposal container. If a gasket is visibly deteriorated and unlikely to be removed intact, removal shall be undertaken within a glovebag. Any scraping to remove residue shall be performed wet.

3.4.7.2. Other Class II Jobs

The Contractor shall use the following work practices when performing Class II removal of ACM: The material shall be thoroughly wetted with amended water prior and during its removal. The material shall be removed in an intact state. Cutting, abrading or breaking the material is prohibited. The ACM removed shall be immediately bagged or wrapped.

3.4.8 Specific Control Methods for Class III Work

Class III asbestos work shall be conducted using engineering and work practice controls which minimize the exposure to employees performing the asbestos work and to bystander employees. The work shall be performed using wet methods and, to the extent feasible, using local exhaust ventilation. The Contractor shall use impermeable dropcloths and shall isolate the operation, using mini-enclosures or glovebag systems, where the disturbance involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of TSI or surfacing material.

3.4.9 Specific Control Methods for Class IV Work

Class IV jobs shall be conducted using wet methods, HEPA vacuums, and prompt clean-up of debris containing ACM. Employees cleaning up debris and waste in a regulated area where respirators are required shall wear the selected respirators.

3.4.10 Cleaning After Asbestos Removal

After completion of all asbestos removal work, surfaces from which ACM has been removed shall be wet wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue. After the gross amounts of asbestos have been removed from every surface, remaining visible accumulations of asbestos on floors shall be collected using plastic shovels, rubber squeegees, rubber dustpans, and HEPA vacuum cleaners as appropriate to maintain the integrity of the regulated area. When TSI and surfacing material has been removed, workmen shall use HEPA vacuum cleaners to vacuum every surface. Surfaces or locations which could harbor accumulations or residual asbestos dust shall be checked after vacuuming to verify that no asbestos-containing material remains; and shall be re-vacuumed as necessary to remove the ACM.

3.5 Final Cleaning and Visual Inspection

Upon completion of abatement, the regulated area shall be cleaned by collecting, packing, and storing all gross contamination. A final cleaning shall be performed using HEPA vacuum and wet cleaning of all exposed surfaces and objects in the regulated area. Upon completion of the cleaning, the Contractor shall conduct a visual pre-inspection of the cleaned area in preparation for a final inspection before final air clearance monitoring and recleaning, as necessary. Upon completion of the final cleaning, the Contractor and the Contracting Officer shall conduct a final visual inspection of the cleaned regulated area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection as specified. If the Contracting Officer rejects the clean regulated area as not meeting final cleaning requirements, the Contractor shall reclean as necessary and have a follow-on inspection conducted with the Contracting Officer. Recleaning and follow-up reinspection shall be at the Contractor's expense.

3.6 Exposure Assessment and Air Monitoring

3.6.1 General Requirements for Exposure

Exposure assessment, air monitoring and analysis of airborne concentration of asbestos fibers shall be performed in accordance with 8 CCR Section 1529, the Contractor's air monitoring plan, and as specified. Personal exposure air monitoring (collected at the breathing zone) that is representative of the exposure of each employee who is assigned to work within a regulated area shall be performed by the Contractor's SSHO. Breathing zone samples shall be taken for at least 25 percent of the workers in each shift, or a minimum of 2, whichever is greater. Preabatement and abatement environmental air monitoring shall be performed by the Contractor's SSHO. The Contractor's Certified Asbestos Consultant shall perform final clearance environmental air monitoring. Environmental and final clearance air monitoring shall be performed using NIOSH 84-100 Method 7400 (PCM) with optional confirmation of results by NIOSH 84-100 Method 7402 (TEM), the EPA TEM Method specified in 40 CFR 763. For environmental and final clearance, air monitoring shall be conducted at a sufficient velocity and duration to establish the limit of detection of the method used at 0.005 f/cc. Confirmation of asbestos fiber concentrations (asbestos f/cc) from environmental and final clearance samples collected and analyzed by NIOSH 84-100 Method 7400 (total f/cc) may be conducted using TEM in accordance with NIOSH 84-100 Method 7402. When such confirmation is conducted, it shall be from the same sample filter used for the NIOSH 84-100 Method 7400

PCM analysis. For all Contractor required environmental or final clearance air monitoring, confirmation of asbestos fiber concentrations, using NIOSH 84-100 Method 7402, shall be at the Contractor's expense. The Government at the discretion of the Contracting Officer may duplicate monitoring. Results of breathing zone samples shall be posted at the job site and made available to the Contracting Officer. The Contractor shall maintain a fiber concentration inside a regulated area less than or equal to 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during the conduct of the asbestos abatement. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Contracting Officer to determine the cause. At the discretion of the Contracting Officer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes. Should either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside a regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Contracting Officer.

3.6.2 Initial Exposure Assessment

The Contractor's SSHO shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements, which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job. For Class I asbestos work, until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of PELs, or otherwise makes a negative exposure assessment, the Contractor shall presume that employees are exposed in excess of the PEL-TWA and PEL-Excursion Limit.

3.6.3 Negative Exposure Assessment

The Contractor shall provide a negative exposure assessment for the specific asbestos job, which will be performed. The negative exposure assessment shall be provided within 1 days of the initiation of the project and conform to the following criteria: The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring covered exposure from operations, which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

3.6.4 Preabatement Environmental Air Monitoring

Preabatement environmental air monitoring shall be established 1 day prior to the masking and sealing operations for each regulated area to determine background concentrations before abatement work begins. As a minimum, preabatement air samples shall be collected using NIOSH 84-100 Method 7400, PCM at these locations: inside the building, but outside the regulated area perimeter; and inside each regulated work area. One sample shall be collected for every 185 square meters 2000 square feet of floor space. The PCM samples shall be analyzed within 24 hours; and if any result in fiber concentration greater than 0.01 f/cc, asbestos fiber concentration shall be confirmed using NIOSH 84-100 Method 7402 (TEM).

3.6.5 Environmental Air Monitoring During Abatement

Until an exposure assessment is provided to the Contracting Officer, environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The assessment shall demonstrate that the product or material containing asbestos minerals, or the abatement involving such product or material, cannot release airborne asbestos fibers in concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos. The monitoring shall be at least once per shift at locations including, but not limited to, close to the work inside a regulated area; preabatement sampling locations; outside entrances to a regulated area; close to glovebag operations; representative locations outside of the perimeter of a regulated area;

inside clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a containment (if used). If the sampling outside regulated area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, work shall be stopped immediately, and the Contracting Officer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Contracting Officer.

3.6.6 Final Clearance Air Monitoring

Prior to conducting final clearance air monitoring, the Contractor and the Contracting Officer shall conduct a final visual inspection of the regulated area where asbestos abatement has been completed. Final clearance air monitoring shall not begin until acceptance of the Contractor's final cleaning by the Contracting Officer. The Contractor's SSHO and Designated Competent Person shall conduct final clearance air monitoring using aggressive air sampling techniques as defined in EPA 560/5-85-024 or as otherwise required by federal or state requirements.

3.6.6.1. Final Clearance Requirements, NIOSH PCM Method

For PCM sampling and analysis using NIOSH 84-100 Method 7400, the fiber concentration inside the abated regulated area, for each airborne sample, shall be less than 0.01 f/cc. The abatement inside the regulated area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 total f/cc, the asbestos fiber concentration (asbestos f/cc) shall be confirmed from that same filter using NIOSH 84-100 Method 7402 (TEM) at Contractor's expense. If any confirmation sample result is greater than 0.01 asbestos f/cc, abatement is incomplete and cleaning shall be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.6.6.2. Final Clearance Requirements, EPA TEM Method

For EPA TEM sampling and analysis, using the EPA Method specified in 40 CFR 763, abatement inside the regulated area is considered complete when the arithmetic mean asbestos concentration of the 5 inside samples is less than or equal to 70 structures per square millimeter (70 S/mm). When the arithmetic mean is greater than 70 S/mm, the 3 blank samples shall be analyzed. If the 3 blank samples are greater than 70 S/mm, resampling shall be done. If less than 70 S/mm, the 5 outside samples shall be analyzed and a Z-test analysis performed. When the Z-test results are less than 1.65, the decontamination shall be considered complete. If the Z-test results are more than 1.65, the abatement is incomplete and cleaning shall be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria shall be done.

3.6.6.3. Air Clearance Failure

If clearance sampling results fail to meet the final clearance requirements, the Contractor shall pay all costs associated with the required recleaning, resampling, and analysis, until final clearance requirements are met.

3.6.7 Air-Monitoring Results and Documentation

Air sample fiber counting shall be completed and results provided within 24 hours (breathing zone samples), and 24 hours (environmental/clearance monitoring) after completion of a sampling period. The Contracting Officer shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The written results shall be signed by testing laboratory analyst, testing laboratory principal and the Contractor's SSHO. The air sampling results shall be documented on a Contractor's daily air monitoring log.

3.7 Clearance Certification

When asbestos abatement is complete, ACM waste is removed from the regulated areas, and final clean-up is completed, the Contracting Officer will certify the areas as safe before allowing the warning signs and boundary warning tape to be removed. After final clean-up and acceptable airborne concentrations are attained, but before the HEPA unit is turned off and the containment removed, the Contractor shall remove

all pre-filters on the building HVAC system and provide new pre-filters. The Contractor shall dispose of such filters as asbestos contaminated materials. HVAC, mechanical, and electrical systems shall be re-established in proper working order. The Contractor and the Contracting Officer shall visually inspect all surfaces within the containment for residual material or accumulated debris. The Contractor shall reclean all areas showing dust or residual materials. The Contracting Officer will certify in writing that the area is safe before unrestricted entry is permitted. The Government will have the option to perform monitoring to certify the areas are safe before entry is permitted.

3.8 Cleanup and Disposal

3.8.1 Title to ACM Materials

ACM material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified and in accordance with applicable federal, state and local regulations.

3.8.2 Collection and Disposal of Asbestos

All ACM waste shall be collected and including contaminated wastewater filters, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in leak-tight containers such as double plastic bags; sealed double wrapped polyethylene sheet; sealed fiberboard boxes; or other approved containers. Waste within the containers shall be wetted in case the container is breached. Asbestos-containing waste shall be disposed of at an EPA, state and local approved asbestos landfill off Government property. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit or in a storage/transportation conveyance (i.e., dumpster, roll-off waste boxes, etc.) in a manner acceptable to and in an area assigned by the Contracting Officer. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, state, regional, and local standards.

3.8.3 Weigh Bill and Delivery Tickets

Copies of weigh bills and delivery tickets shall be submitted to the Contracting Officer during the progress of the work. The Contractor shall furnish the Contracting Officer scale tickets for each load of ACM weighed and certified. These tickets shall include tare weight; identification mark for each vehicle weighed; and date, time and location of loading and unloading. Tickets shall be furnished at the point and time individual trucks arrive at the worksite. A master log of all vehicle loading shall be furnished for each day of loading operations. Before the final statement is allowed, the Contractor shall file with the Contracting Officer certified weigh bills and/or certified tickets and manifests of all ACM actually disposed by the Contractor for this contract.

3.8.4 Asbestos Waste Shipment Record

The Contractor shall complete and provide the Contracting Officer final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required state waste manifest shipment records, within 3 days of delivery to the landfill. Each Waste Shipment Record shall be signed and dated by the Contractor and the waste transporter and disposal facility operator.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
PROJECT ADDRESS _____
CONTRACTOR FIRM NAME _____
EMPLOYEE'S NAME _____,
(Print) (Last) (First) (MI)
Social Security Number: _____ - _____ - _____,

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS AS BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS; THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NONSMOKING PUBLIC.

Your employer's contract for the above project requires that you be provided and you complete formal asbestos training specific to the type of work you will perform and project specific training; that you be supplied with proper personal protective equipment including a respirator, that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you. The Contractor's Designated Industrial Hygienist will check the block(s) for the type of formal training you have completed. Review the checked blocks prior to signing this certification.

FORMAL TRAINING:

- _____ a. For Competent Persons and Supervisors: I have completed EPA's Model Accreditation Program (MAP) training course, "Contractor/Supervisor", that meets this State's requirements.
- _____ b. For Workers:
 - _____ (1) For OSHA Class I work: I have completed EPA's MAP training course, "Worker", that meets this State's requirements.
 - _____ (2) For OSHA Class II work (where there will be abatement of more than one type of Class II materials, i.e., roofing, siding, floor tile, etc.): I have completed EPA's MAP training course, "Worker", that meets this State's requirements.
 - _____ (3) For OSHA Class II work (there will only be abatement of one type of Class II material):
 - _____ (a) I have completed an 8-hour training class on the elements of 29 CFR 1926, Section .1101(k)(9)(viii), in addition to the specific work practices and engineering controls of 29 CFR 1926, Section .1101(g) and hands-on training.
 - _____ (b) I have completed EPA's MAP training course, "Worker", that meets this State's requirements.
 - _____ (4) For OSHA Class III work: I have completed at least a 16-hour course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, Section .92(a)(2) and the elements of 29 CFR 1926, Section .1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926, Section .1101, and hands-on training.
 - _____ (5) For OSHA Class IV work: I have completed at least a 2-hr course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763, (a)(1), and the elements of 29 CFR 1926, Section .1101(k)(9)(viii), in addition to the specific work practices and engineering controls at 29 CFR 1926, Section .1101(g) and hands-on training.
- _____ c. Workers, Supervisors and the Designated Competent Person: I have completed annual refresher training as required by EPA's MAP that meets this State's requirements.

PROJECT SPECIFIC TRAINING:

_____ I have been provided and have completed the project specific training required by this Contract. My employer's Designated Industrial Hygienist and Designated Competent Person conducted the training.

RESPIRATORY PROTECTION:

_____ I have been trained in accordance with the criteria in the Contractor's Respiratory Protection program. I have been trained in the dangers of handling and breathing asbestos dust and in the proper work procedures and use and limitations of the respirator(s) I will w

RESPIRATOR FIT-TEST TRAINING:

_____ I have been trained in the proper selection, fit, use, care, cleaning, maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in the Contractor's Respiratory Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time.

MEDICAL EXAMINATION:

_____ I have had a medical examination within the last twelve months, which was paid for by my employer. The examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray. A physician made a determination regarding my physical capacity to perform work tasks on the project while wearing personal protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's Industrial Hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below. The physician determined that there:

_____ were no limitations to performing the required work tasks.

_____ were identified physical limitations to performing the required work tasks.

Date of the medical examination _____

Employee Signature _____ date _____

Contractor's Industrial

Hygienist Signature _____ date _____

-- End of Section --

**SECTION 13281A
LEAD HAZARD CONTROL ACTIVITIES**

1.0 Part 1 General

1.1 References

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- | | |
|------------|---|
| ANSI Z88.2 | (1992) Respiratory Protection |
| ANSI Z9.2 | (2001) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- | | |
|-------------|--|
| ASTM E 1553 | (1993) Practice for Collection of Airborne Particulate Lead During Abatement and Construction Activities |
|-------------|--|

CALIFORNIA CODE OF REGULATIONS (CCR)

- | | |
|--------------------------------|--|
| 8 CCR, Chapter 4, Subchapter 4 | Construction Safety Orders |
| 8 CCR, Chapter 4, Subchapter 7 | General Industry Safety Orders |
| 8 CCR § 1532.1 | Lead |
| 8 CCR § 5144 | Respiratory Protection |
| 8 CCR § 3203 & 1509 | Injury and Illness Prevention Program |
| 8 CCR § 5194 | Hazard Communication |
| 17 CCR, Division 1, Chapter 8 | Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards |

CODE OF FEDERAL REGULATIONS

- | | |
|------------|--|
| 40 CFR 84 | Approval of Respiratory Protective Devices |
| 40 CFR 260 | Hazardous Waste Management System: General |
| 40 CFR 261 | Identification and Listing of Hazardous Waste |
| 40 CFR 263 | Standards Applicable to Transporters of Hazardous Waste |
| 40 CFR 268 | Land Disposal Restrictions |
| 49 CFR 173 | Shippers – General Requirements for Shipments and Packagings |

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD 6780 (1995; errata Aug 1996; Rev Ch. 7, 1997) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 84-100 (1984; Supple 1985, 1987, 1988 & 1990) NIOSH Manual of Analytical Methods

UNDERWRITERS LABORATORIES (UL)

UL 586 (1996; Rev thru Aug 1999) High-Efficiency, Particulate, Air Filter Units

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2003) Safety and Health Requirements Manual

1.2 Definitions

- a. Aggressive Method. Removal or disturbance of building material by sanding, abrading, grinding, or other method that separates LBP/glazes from the building substrate.
- b. Supervisor. A person who is capable of identifying existing lead hazards as identified in 8 CCR § 1532.1, selecting the appropriate control strategy, and has the authority to take prompt corrective measures to eliminate them.
- c. Deteriorated Lead-Based Paint. Deteriorated LBP means lead-based paint or surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separating from a component.
- d. Lead Hazard Control Activity. Any construction work where a worker may be occupationally exposed to lead and procedures have to be followed to assure that lead inside the lead hazard control area is cleaned up to appropriate levels and lead dust does not disperse outside the lead hazard control area at unacceptable levels.
- e. Negative Exposure Assessment. A demonstration by the contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).
- f. Permissible Exposure Limits.
 - PEL-Time Weighted Average (TWA): Concentration of lead not greater than 50 µg/M³ of air averaged over an 8-hour period.
 - Action Level: Exposure to an airborne concentration of lead of 30 µg/M³ of air calculated as an 8-hour TWA.
- h. Regulated Area. An area established by the contractor to demarcate where lead work is conducted; also any adjoining area where debris and waste from such lead work accumulate; and an area within which airborne concentrations of lead exceed, or there is a reasonable possibility they may exceed the PEL.

1.3 Description of Work

The work covered by this section includes the handling of building materials painted with lead-based paint (LBP) that will be encountered during the renovation of the bathrooms in Bldg 620 located on the Presidio of Monterey, Monterey, CA. This section describes procedures to protect workers, building occupants and the environment from contact with airborne lead dust and debris. The Contractor shall consider that all painted and ceramic glazed materials contain lead. The contractor shall implement work practices, i.e., scoring the painted substrates and wetting the surfaces to minimize dust generation.

1.4 Protection of Existing Area to Remain

All project work including, but not limited to, structural repair, storage, transportation, and disposal shall be performed without damaging or contaminating adjacent work and areas. Where such work or areas are

damaged or contaminated, the contractor shall restore work and areas to the original condition at no cost to the Government.

1.5 Coordination With Other Work

The contractor shall coordinate activities where lead is encountered, with work being performed in adjacent areas. Coordination procedures shall be explained in the contractor's APP/IIPP and shall describe how the contractor will prevent lead exposure to other contractors and/or Government personnel performing work unrelated to lead activities.

1.6 Submittals

Government approval is required for submittals with a "G" designation; the USACE Resident Engineer (RE) will review the submittals for the Government. Submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Cleanup and Disposal

Waste manifests and shipment records shall be furnished.

Materials and Equipment; G

A description of the materials, equipment and expendable supplies required; including material Safety Data Sheets (MSDSs) for material brought onsite to perform the work.

Qualifications; G

A report providing evidence of qualifications for the contractor, contractor personnel, and laboratories.

Training Program; G

A copy of the written project site-specific training material as indicated in 8 CCR § 1532.1 that will be used to train onsite employees.

SD-06 Test Reports

Exposure Assessment and Air Monitoring

Initial exposure assessments, negative exposure assessments, air-monitoring results and documentation.

Licenses, Permits and Notifications; G

Accident Prevention Plan/Injury and Illness Prevention Program; G

1.7 Qualifications

1.7.1 Written Qualifications and Organization Report

The contractor shall furnish a written qualifications and organization report providing evidence of qualifications of the contractor to engage in lead related work, Project Supervisor, and workers, Site Safety and Health Officer (SSHO) all subcontractors to be used including transportation and disposal facility; laboratories, and any others assigned to perform lead and support activities. The report shall include an organization chart showing the contractor's staff organization for this project by name and title, chain of command and reporting relationship with all subcontractors. The report shall be signed by the contractor and SSHO. The contractor shall include the following statement in the report: "By signing this report I certify that the personnel I am responsible for during the course of this project fully understand the contents of 8 CCR § 1532.1 for those activities which could expose them to lead."

1.7.2 Specific Requirements

The contractor shall designate in writing, personnel meeting the following qualifications.

1.7.2.1. Contractor

The contractor shall be qualified for lead related work. The contractor shall be certified by the Contractors State License Board (California) for Hazardous Substance Removal Work and Remedial Actions including Lead in Construction Work.

1.7.2.2. Project Supervisor

Evidence that the full-time Project Supervisor is qualified in accordance with 8 CCR § 1532.1, and is experienced in the administration and supervision of lead projects, including exposure assessment and monitoring, work practices, protective measures for personnel, setting up and inspecting lead work areas, lead generated waste containment and disposal procedures, site safety and health requirements, notification of other employees onsite, etc.

1.7.2.3. Site Safety and Health Officer

The SSO shall prepare the APP/IIPP, perform training, direct air monitoring and assist the Project Supervisor in ensuring that safety and health requirements are complied with during the performance of work.

1.7.2.4. Workers

Workers shall meet the requirements contained in 8 CCR § 1532.1.

1.7.2.5. Laboratory

The laboratory selected to perform analysis on paint chip and waste stream samples shall be accredited by EPA's National Lead Laboratory Accreditation Program (NLLAP). The laboratory selected to perform analysis on worker exposure (industrial hygiene) samples shall be in the American Industrial Hygiene Association's Industrial Hygiene Laboratory Accreditation Program (IHLAP) and shall be successfully participating in the Proficiency Analytical Testing (PAT) program for lead.

1.7.2.6. Disposal Facility, Transporters

Evidence that the landfill to be used is approved for lead disposal by the USEPA and California regulatory agencies. Copies of signed agreements between the contractor (including subcontractors and transporters) and the waste disposal facility to accept and dispose of all lead containing waste generated during the performance of this contract shall be provided.

1.8 Regulatory Requirements

Work performed under this contract shall comply with EM 385-1-1, applicable federal, state, and local laws, ordinances, criteria, rules and regulations regarding handling, storing, transporting, and disposing of lead waste materials. This includes, but is not limited to 8 CCR § 1532.1. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.8.1 Safety and Health Program and Plans

The contractor shall develop and submit a written comprehensive site-specific APP/IIPP at least 20 days prior to the pre-construction conference. The APP/IIPP shall address requirements of Appendix A of EM 385-1-1, and 8 CCR § 3203 & 1509 respectively, covering onsite work to be performed by the contractor and subcontractors. The APP/IIPP shall incorporate a Lead Hazard Control Plan (LHCP), Activity Hazard Analyses (AHAs), and Occupant Protection Plan. Any portions of the contractor's overall Safety and Health Program that are referenced in the APP/IIPP, e.g., respirator program, hazard communication program, confined space entry program, etc., shall be included as appendices to the APP/IIPP. The plan

shall take into consideration all the individual tasks. The plan shall be prepared, signed, and dated by the contractor and SSHO.

1.8.1.1. Overall Accident Prevention Plan

The overall plan shall address each element in Appendix A of EM 385-1-1 in project specific detail. The elements are:

- a. Signature Sheet.
- b. Background Information.
- c. Statement of Safety and Health Policy.
- d. Responsibilities and Lines of Authorities.
- e. Subcontractors and Suppliers.
- f. Training.
- g. Safety and Health Inspections.
- h. Safety and Health Expectations, Incentive Programs and Compliance.
- i. Accident Reporting.
- j. Medical Support.
- k. Corporate Plans and Programs required by this contract, (HAZCOM, Respiratory Protection).

1.8.1.2. Lead Hazard Control Plan Appendix

The LHCP Appendix shall address occupational exposure issues and shall describe the procedures to be followed to protect employees from lead hazards. Each of the following elements shall be addressed in the LHCP appendix:

- a. The location and a brief description of each work activity that will emit lead into the workplace atmosphere.
- b. Description of equipment and materials, controls, crew size, worker responsibilities, and operating and maintenance procedures.
- c. Description and sketch of the regulated area.
- d. Description of the specific lead control methods and procedures to protect workers and building occupants from lead exposure.
- e. Equipment used to keep occupational exposure below the PEL and minimize worker exposure to lead.
- f. Worker Exposure Assessment including methods and procedures to monitor and document worker exposure to lead. Worker exposure monitoring shall be broken into two parts in the plan: worker monitoring for the "initial determination" described in 8 CCR § 1532.1; and worker exposure monitoring after the initial lead exposure determination has been made.
- g. Work Practices Program describing the protective clothing to be used to protect workers from lead exposure, house keeping procedures employed to minimize spread on lead contamination, hygiene facilities and practices used to prevent workers from inadvertent ingestion of lead.
- h. Administrative Control Procedures, to be used as a last resort, to limit worker exposure to lead.
- i. Medical Surveillance practices and procedures used to monitor worker exposure to lead and to assure fitness for wearing respiratory protection devices.
- j. Worker training meeting the requirements of 8 CR § 1532.1 to assure workers understand hazard associated with working with lead and how to protect themselves.

1.8.1.3. Activity Hazard Analyses Appendix

AHAs, for each major phase of work, shall be submitted and updated during the project. The AHA format shall be in accordance with Table 1 of EM 385-1-1. The analyses shall define the activities to be performed, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level.

1.8.1.4. Occupant Protection Plan Appendix

The Contractor shall develop and implement an Occupant Protection Plan describing the measures and management procedures to protect the building occupants/building facilities and the environment from exposure to any lead contamination.

1.8.2 Pre-Construction Conference and Onsite Safety

The contractor, Project Supervisor, and SSSH shall meet with the Contracting Officer (CO) prior to beginning work at a pre-construction conference to discuss the details of the contractor's submitted APP/IIPP.

1.9 Medical Requirements

Medical requirements shall conform to 8 CCR § 1532.1 and 8 CCR § 3204.

1.10 Training Program

1.10.1 General Training Requirements

The contractor shall establish a training program as specified by 8 CCR § 1532.1. Additionally, Supervisors and workers exposed to lead at or above the PEL for public buildings shall meet the training requirements as defined in 17 CCR § 35022 (California Department of Health Services).

1.10.2 Project Specific Training

Prior to commencement of work, each worker shall be instructed in the following project specific training:

- a. The hazards and health effects of lead.
- b. The content and requirements of the contractor's APP/IIPP.
- c. Hazard Communication Program.
- d. Air monitoring program and procedures.
- e. Medical surveillance to include medical and exposure record-keeping.
- f. Security procedures.
- g. Specific work practice controls and engineering controls.

1.11 Sampling and Analysis

Analysis shall conform to NIOSH Pub No. 84-100 Method 7982, Lead, for personal sampling required by 8 CCR § 1532.1

1.12 Respiratory Protection Program

The contractor shall establish and implement a respiratory protection program (if required) in accordance with 8 CCR § 1532.1, 8 CCR § 5144, and ANSI Z88.2.

1.12.1.1. Respiratory Fit Testing

A qualitative or quantitative fit test conforming to 8 CCR § 5144 shall be conducted for each worker required to wear a respirator.

1.12.1.2. Respirator Selection and Use Requirements

The contractor shall provide respirators, and ensure that they are used as required by 8 CCR § 1532.1 and in accordance with the manufacturer's recommendations. Respirators shall be approved by the National Institute for Occupational Safety and Health (NIOSH), under the provisions of 42 CFR 84, for use in environments containing lead. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved shall be high-efficiency particulate air (HEPA) (P 100). Respirators shall be used during all work where employees are exposed above the PEL-TWA or PEL-Excursion Limit.

1.13 Hazard Communication

A hazard communication program shall be established and implemented in accordance with 8 CCR § 5194. MSDSs shall be provided for all hazardous materials brought onto the worksite. The Contractor shall provide a warning to the employees in compliance with 22 CCR Section 12000, Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity (Safe Drinking Water and Toxic Enforcement Act, Proposition 65).

1.14 Emergency Telephone Numbers

A list of emergency telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, police and fire departments, Government and contractor representatives.

1.15 Licenses, Permits and Notification

1.15.1 General Legal Requirements

Necessary licenses, permits and notifications shall be obtained in conjunction with the project's tasks, transportation and disposal actions and timely notification furnished of such actions as required by federal, state, regional, and local authorities. The contractor is responsible for any associated fees or other costs incurred for licenses, permits, and notifications.

1.15.2 Lead Activities

The contractor shall notify CA-OSHA 24-hours prior to commencement of lead associated activities in accordance with 8 CCR § 1532.1(p).

CA-OSHA
39141 Civic Center Dr. Suite 310
Fremont, CA 94538
(510) 794-2521
FAX (510) 794-3889

1.16 Personal Protective Equipment

The contractor shall describe the PPE to be used to protect workers from lead hazards in the LHCP.

1.17 Hygiene Facilities and Practices

The contractor shall describe the personal hygiene facilities to be used by the workers in the LHCP.

1.17.1 Hand Wash Stations

The contractor shall provide hand-washing facilities for use by lead hazard control workers. Faces and hands shall be washed when leaving the regulated area.

1.17.2 Showers

Showers shall be provided if feasible and if worker exposures exceed the PELs for lead.

1.17.3 Eating Area

The contractor shall provide an area for taking breaks and eating lunch. This area shall be kept as free as practicable from lead contamination.

1.17.4 Smoking

Smoking, if allowed by the contractor, shall only be permitted in designated areas.

1.18 Lead Warning Signs

Warning signs shall be posted in each area where worker exposure to lead is undetermined or where the exposures are above the PEL. Signs shall be located to allow personnel to read the signs and take necessary precautions before entering the lead hazard control area. Warning signs shall be in English and Spanish, be of sufficient size to be clearly legible, and display the following:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

1.19 Air Monitoring Equipment

The contractor's SSHO shall approve air monitoring equipment used to collect samples. The equipment shall include, but shall not be limited to:

- a. High-volume sampling pumps.
- b. Low-volume, battery powered, body-attachable, portable personal pumps.
- c. Single use cassette for personal and area air sampling.
- d. A flow calibrator traceable to a NIST primary standard.

1.20 Expendable Supplies

1.20.1 Polyethylene Bags

Disposable bags shall be polyethylene plastic and shall be a minimum of 0.15 mm (6 mils thick) and shall be capable of being made leak-tight.

1.20.2 Polyethylene Leak-tight Wrapping

Wrapping used to wrap lead contaminated debris shall be polyethylene plastic that is a minimum of 0.15 mm (6 mils thick).

1.20.3 Polyethylene Sheeting

Sheeting shall be polyethylene plastic with a minimum thickness of 0.15 mm (6 mil).

1.20.4 Tape and Adhesive Spray

Tape and adhesive shall be capable of sealing joints between polyethylene sheets and for attachment of polyethylene sheets to adjacent surfaces.

1.20.5 Containers

When used, containers shall be lead-tight and shall be labeled in accordance with EPA, DOT and OSHA standards.

1.21 Storage of Materials

Materials shall be stored and protected from damage and contamination. Flammable or hazardous materials shall not be stored inside a building. Stored materials shall not present a hazard to workers.

2.0 Part 2 Products

3.0 Part 3 Execution

3.1 General Requirements

Lead hazard control tasks shall be performed as detailed and as summarized in the contractor's APP/IIPP, LHCP, and the AHAs. The contractor shall use the engineering controls and work practices required in 8 CCR § 1532.1 in all operations regardless of the levels of exposure. Personnel shall wear and utilize protective clothing and equipment as specified. The contractor shall not permit eating, smoking, drinking, chewing or applying cosmetics in the regulated area. The contractor shall stop lead activities in the regulated area immediately when the airborne lead concentration equals or exceeds $30 \mu\text{g}/\text{M}^3$ inside the regulated area and $5 \mu\text{g}/\text{M}^3$ outside the regulated area. The contractor shall use lead work practices, which will not contaminate exterior soil with lead.

3.1.1 Abrasive Removal Equipment

The use of powered machines for vibrating, sanding, grinding, or abrasive blasting is prohibited unless equipped with local exhaust ventilation systems equipped with HEPA filters

3.1.2 Lead Hazard Control Areas, Equipment and Procedures

The contractor shall set up lead hazard control areas and operate equipment within the lead hazard control area in a manner that will minimize migration of lead dust beyond the lead hazard control area boundaries and minimize exposure to workers.

3.1.2.1. Lead Hazard Control Area

Access into lead hazard control areas by the general public shall be prohibited. Workers entering the lead hazard control area shall understand and follow procedures described in the contractor's APP/IIPP for reducing lead exposure. Lead hazard control area preparation and restriction for exterior lead hazard control projects include plastic sheeting, colored caution tape at 20 foot distance from where the lead control work is performed.

3.1.3 Waste Stream Classification

The contractor shall determine the RCRA waste classification for all waste streams generated by the lead hazard control project. The contractor shall perform the sampling and analysis as required by the selected landfill, evaluate analytical results and propose waste stream treatment and disposal requirements. The CO will approve waste stream treatment and disposal requirements proposed by the contractor.

3.1.4 Final Cleaning and Visual Inspection

The contractor shall perform a visual inspection in preparation for a final inspection of each lead regulated area to assure that lead activities have been properly completed. The contractor shall visually verify that lead hazards have been removed, control technology has been appropriately applied and that the lead regulated area is free of dust and paint chips. Upon completion of the final cleaning, the contractor and the CO shall conduct a final visual inspection of the cleaned regulated area in accordance with ASTM E 1368 and document the results.

3.1.5 Certification of Visual Inspection

To pass visual clearance, the regulated area must be free from visible dust debris, paint chips or any other residue that may have been generated by the lead activities.

3.2 Evaluation of Sampling and Monitoring Results

Analytical results from samples taken during lead activities shall be evaluated to determine compliance with occupational safety and health standards and project specific control levels.

3.2.1 Initial Exposure Assessment

The contractor shall conduct an exposure assessment immediately before or at the initiation of an lead operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements, which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation.

3.2.2 Negative Exposure Assessment

The contractor shall provide a negative exposure assessment for the specific lead hazard control job, which will be performed. The negative exposure assessment shall be provided within 2-days of the initiation of the project. The results of initial exposure monitoring of the current job, made from breathing zone air samples shall be representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring shall covered exposure from operations, which are most likely during the performance of the entire lead job to result in exposures over the PELs.

3.2.3 General Requirements for Exposure

Exposure assessment, air monitoring and analysis of airborne concentration of lead shall be performed in accordance with 8 CCR § 1532.1. Personal exposure air monitoring (collected at the breathing zone) that is

representative of the exposure of each employee who is assigned to work within a regulated area shall be performed.

3.2.4 Occupational Safety and Health

The Safety and Health Manager shall review the analytical results (lead) from samples taken for the initial exposure assessment and continued occupational safety and health monitoring. The contractor shall notify the CO of any results exceeding the PELs.

3.2.5 Control Efficiency of Containment Features

The Safety and Health Manager shall review and document analytical results from samples taken to determine if lead is migrating outside the regulated areas. The contractor shall notify the CO and apply the following actions if results exceed project specific levels outside the regulated area:

- a. Require/improve containment.
- b. Improve work practices to reduce lead generation.

3.2.6 Environmental Air Monitoring

Environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne lead concentrations. The assessment shall demonstrate that the work practice cannot release airborne lead concentrations exceeding $5 \mu\text{g}/\text{M}^3$ outside the regulated area. The monitoring shall be at least once per shift outside the regulated area.

3.2.7 Lead Waste Disposal Sampling

The contractor shall take samples of paint chips and construction debris for TCLP and WET analysis to determine waste disposal requirements as required by the landfill.

3.3 Title to Waste Materials

Waste material resulting from lead work, except as specified otherwise, shall become the property of the contractor and shall be disposed of in accordance with applicable federal, state and local regulations. The contractor shall complete the manifest and deliver to the Government for signature.

3.4 Payment for Hazardous Waste

Payment for disposal of hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials delivered is returned and a copy is furnished to the Government.

3.4.1 Waste Shipment Record

The contractor shall complete and provide the CO final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required state waste manifest shipment records, within 3 days of delivery to the landfill. Each Waste Shipment Record shall be signed and dated by the contractor, the waste transporter and disposal facility operator.

-- End of Section --