ABATEMENT PLAN FOR REMOVAL OF ASBESTOS, AND LEAD-BASED PAINT

Gymnasium Building
John Adams Middle School
2425 16th Street
Santa Monica, CA 90405

Prepared for:

Santa Monica-Malibu Unified School District
1651 Sixteenth Street
Santa Monica, California 90404

Project No.: SMSD-17-7431
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PART 1 - GENERAL

The Santa Monica Malibu Unified School District will undertake a project to renovate the Gymnasium Building at John Adams Middle School at 2425 16th Street in Santa Monica, California

1.1 REMOVAL SCOPE OF WORK

The general intent of this document is to advice the abatement contractor of the minimum requirements for handling and removal of identified asbestos-containing materials (ACM), and lead-based paint (LBP). Alternative procedures will be allowed, but the procedures must meet or exceed current federal, state, local and District specification requirements. The alternative procedures must be reviewed and approved by District representative prior to implementation of the work.

An asbestos and lead survey has been prepared for this site by Alta Environmental (#SMSD-17-7431). The survey report should be used in conjunction with this Plan to confirm the presence of asbestos and lead in paint in areas impacted by the project.

By submitting a bid, the Contractor warrants its intent to conduct said work properly using qualified personnel employed by licensed contractors.

A. Removal scope of work shall include all impacted materials and debris identified in areas impacted by the project scope of work, DSA approved project drawings, prepared by Jubany NAC Architecture, #161-17019, dated November 01, 2017. The identified ACM and LBPs are listed in the Tables 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5 below.

B. All removal and disturbance of asbestos-containing materials (ACM) and subsequent waste disposal shall be performed by an asbestos abatement contractor, using 40-hour asbestos trained workers (Asbestos Worker trained as outlined in 40 CFR 763). Abatement contractor's workforce shall be supervised by experienced trained workers, knowledgeable and qualified in the techniques of asbestos abatement, handling and disposal of asbestos-containing and/or asbestos-contaminated materials, and the subsequent cleaning of contaminated areas, including, at a minimum, Competent Person/Contractor Supervisor training as outlined in 40 CFR 763.

C. All removal and disturbance of lead-based paints and subsequent waste disposal shall be performed by a state-licensed contractor, using CDPH-certified workers with at least one CDPH-certified Supervisor. Abatement contractor's workforce shall be supervised by experienced trained workers, knowledgeable and qualified in the techniques of lead abatement, handling and disposal of lead-containing and/or lead-contaminated materials, and the subsequent cleaning of contaminated areas.

D. All removal and disturbances of lead containing painted surfaces (reported below 1.0 mg/cm^2 by XRF Testing) are subject to Cal/OSHA worker exposure requirements (8 CCR 1532.1) including the use of respirators and protective clothing until the contractor has demonstrated through objective data the exposure levels to lead dust based on a negative exposure assessment do not exceed the permissible exposure level.

E. When exposure monitoring of a particular lead-related task indicates that the permissible exposure level is or will be exceeded, the contractor shall use CDPH-certified lead workers to complete the task.

F. Material quantities included in this report are provided as an estimate only and are for information only and shall not be used as a reliable quantity for preparing removal bids. The Abatement Contractor shall be solely responsible for assessing the type, extent, and quantity of material to be removed in each area of the project in preparing each project bid. Estimated quantities listed in this report were based on observed material in areas impacted by the scope of work.

G. Abatement Contractor shall furnish all labor, materials, services, insurance specifically covering the handling and transportation of ACMs, LBP, PCBs, mercury- containing light ballast, and equipment which is specified, shown or reasonably implied for the removal, transport, and disposal of the hazardous materials identified in Tables 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5 listed below.

Table 1.1.1-SUMMARY OF ASBESTOS-CONTAINING MATERIALS

Gymnasium Building

MATERIAL	LOCATION	SCOPE OF IMPACT	SPECS SECTION
Acoustical plaster ceiling	Rooms 102, 106, 113, 114 lounge storage room (under ceiling tiles)	Full removal in areas impacted by the project drawings and specifications	3.7.1
Thermal System Insulation (TSI) debris	Attic space all except at basketball court area	Full removal in areas impacted by the project drawings and specifications	3.7.1
9”x9” tan with brown streaks floor tile with mastic	Rooms 111, 108, 109, 109A, lounge storage (under new tile)	Full removal in areas impacted by the project drawings and specifications	3.7.2
9”x9” brown and dark brown streaks floor tile with mastic	Rooms 114, 113 (under new tile)	Full removal in areas impacted by the project drawings and specifications	3.7.2
9”x9” off-white with green streaks floor tile with mastic	Rooms 106, 102, lounge (under new tile)	Full removal in areas impacted by the project drawings and specifications	3.7.2
8" oval transite pipe	Room 196 (attic space thru roof)	Full removal in areas impacted by the project drawings and specifications	3.7.2
Chalkboard/ posting board mastic	Hallway A	Full removal in areas impacted by the project drawings and specifications	3.7.2
Paper or mastic under hard wood floor	Gymnasium floor	Full removal in areas impacted by the project drawings and specifications	3.7.2

Table 1.1.2- SUMMARY OF LEAD-BASED PAINT Gymnasium Building			
COMPONENT	**LOCATION**	**SCOPE OF IMPACT/ESTIMATED**	**SPECS SECTION**
Door casings-wood-white	Interior all door casings	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.3
Door-metal-green	Mechanical room, boy's restrooms, girl's restroom, hallway B, C, room 111	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.3
Window casing-wood-white	Interior/exterior, original windows, also frames remains around new replacement aluminum window	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.3
Hatch-wood-white	Hallway B	Component removal in areas impacted by the project drawings and specifications	3.7.3
Door and door casings-wood-green	All exterior wood doors and door casings	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.3
Fascia board-wood-green	All exterior fascia boards	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.3
Wall, wall trim and baseboard-ceramic-brown and white	Boys locker room	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.4
Wall-ceramic-brown and yellow	Storage room B (in boy's locker room)	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.4
Wall-ceramic-grey	Boys restroom, girl's restroom, hallway, room 102 restroom, room 113 restroom	Paint stabilization and component removal in areas impacted by the project drawings and specifications	3.7.4

Table 1.1.3-SUMMARY OF LEAD-CONTAINING PAINT	
All removal and disturbances of lead containing painted surfaces (reported below 1.0 mg/cm^2 by XRF Testing) are subject to Cal/OSHA worker exposure requirements (8 CCR 1532.1) including the use of respirators and protective clothing until the contractor has demonstrated through objective data the exposure levels to lead dust based on a negative exposure assessment do not exceed the permissible exposure level.	3.7.5

The Contractor is responsible for assessing the type, extent, and quantity of material to be removed in each area of the project.

1.2 WORK TO BE PERFORMED BY OTHERS

A. As per Project Drawings.

1.3 RESPONSIBILITIES OF OWNER

A. The Owner may elect to provide daily oversight and environmental monitoring surrounding the abatement/removal operations.

1.4 REQUIRED LICENSURE

A. Contractor shall be licensed by the State of California, Contractors State License Board and be registered to perform asbestos related work with the Division of Occupational Safety and Health, Department of Industrial Relations. At a minimum contractor shall hold the following license classification:

1. ASB - Asbestos Certification
2. U.S. EPA Renovation, Repair, & Repainting Program (RRRP), if required

B. Transportation of Friable and Non-Friable Asbestos Containing Materials: Contractor shall itself be or have a subcontractor who is a registered hazardous waste transporter with the State of California, Department of Toxic Substances Control.

C. Subcontractors shall hold all licenses applicable to specified trade work.

1.5 PERMITS

A. As required by California Division of Occupational Safety and Health (Cal/OSHA)
B. As required by the South Coast Air Quality Management District (SCAQMD)
C. As required by Department of Health Services (Cal/DPH)
D. As required by local agencies for specific tasks (i.e., temporary power, etc.)

1.6 NOTIFICATIONS

A. Contractor shall make all required written notifications to regulatory agencies including the following:

1. Cal/OSHA
2. SCAQMD
3. Cal/DPH, if required.

1.7 INSURANCE REQUIREMENTS

A. Provide as per Project Specifications.

1.8 BONDING REQUIREMENTS

A. Provide As per Project Specifications.

1.9 PROJECT SCHEDULE

A. Project Start Date: As specified by owner
Project Completion Date: As specified by owner

B. All work shall be performed as per agreement between Contractor and Owner.

1.10 APPLICABLE REGULATIONS

A. Contractor shall perform all Work in compliance with current, applicable federal, state, and local regulations, standards and codes including District specifications governing asbestos abatement, transport, and disposal of asbestos containing/contaminated materials, lead-based/containing surface coatings and contaminated materials, and all other hazardous materials.

1. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

B. Regulations, Standards, and Codes (General):

1. General applicability of federal, state, and local regulations, standards and codes governing hazardous materials abatement, demolition, transport, and disposal, except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable regulations, standards, and codes have the same force and effect and are made a part of the contract documents as if copied directly into the contract documents, or as if published copies are bound herewith.

C. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations including District Specifications pertaining to work practices, transport, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.

1. The contractor is responsible for providing training, medical examinations and maintaining training/medical records of personnel as required by the applicable federal, state, and local regulations.

2. The Contractor shall hold the Owner and Project Environmental Consultant harmless for failure to comply with any applicable hazardous materials abatement, transport, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

1.11 SUBMITTALS

A. Prior to commencement of work, Contractor shall submit to the Project Environmental Consultant (Owner's Representative) documentation that includes, without limitation, the following:

1. Copies of licenses and registrations required by Article 1.6 Required Licensure (include copies of subcontractors' licenses).

2. Copies of written notification to the following regulatory agencies:

   a. Cal/OSHA
   b. SCAQMD
   c. Cal/DPH, if necessary.

3. Manufacturer's certification that HEPA vacuums, differential pressure air filtration devices and other local exhaust ventilation equipment conform to ANSI Z9.2-79 and have been permitted by the SCAQMD.

4. Documentation showing that Contractor's employees, including foreman, supervisor, and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of asbestos abatement activities, have received training as required by 29 CFR 1926.1101 and 8 CCR 1529.

5. Documentation showing that Contractor's employees, including foreman, supervisor, and any other company personnel or agents who may be exposed to airborne lead dust or who may be responsible for any aspects of lead abatement activities, have received training as required by 29 CFR 1926.62 and 8 CCR 1532.1.

6. Documentation from Physician (signed by an M.D.) showing that all employees or agents who may be exposed to airborne asbestos fibers in excess of background levels have received medical monitoring to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities.

7. Documentation of respirator fit-testing for all Contractor employees and agents who must enter the work area. This fit-testing shall be conducted annually and in accordance with procedures as required by 29 CFR 1910.134 and 8 CCR 5144.

8. An emergency preparedness plan as required by Article 1.16 - Emergency Planning.

B. During abatement activities, Contractor shall maintain on-site records and submit to Project Environmental Consultant at the completion of the project documentation that includes, without limitation, the following:

1. Copies of the work area entry/exit log book.

2. Copies of logs documenting filter changes on respirators, HEPA vacuums, differential pressure air filtration devices, water filtration device, and other engineering controls.

3. Copies of Material Safety Data Sheets (MSDS) for solvents, encapsulants, wetting agents, replacement materials, and other substances brought by Contractor to the Project Site. MSDSs shall be available the first day that subject materials/substances are present on the project site.

4. Results of all required OSHA compliance air monitoring. Results shall be available for review by Consultant and Owner within 24 hours the sampling.

5. Copies of all accident/incident reports where injury or damage has occurred on or to the Owner's property.

6. Copies of daily logs indicating location(s) worked, type of materials removed,

quantity of materials removed and number of personnel conducting the aforementioned activities.

7. Copies of all transport manifests, trip tickets and disposal receipts for all asbestos waste materials removed from the site.

1.12 NOTICES

A. Post in the clean room area of the worker decontamination enclosure a list containing the names, and telephone numbers of Owner, Construction Manager, Abatement Contractor, and Project Environmental Consultant.

B. Additional postings shall include:

1. Visitor Entry and Exit Log.
2. Employee Daily Sign in Log.
3. Entry and Exit Procedures.
4. Emergency Procedures.
5. Copies of permits required in Article 1.7 of this document and copies of notifications required in Article 1.8 of this document.
6. As required by the Department of Labor.

1.13 SITE USE AND SECURITY

A. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed.

B. The work area shall be restricted only to authorized, trained and protected personnel, including Contractor, Contractor's employees, Owner's employees, Owner, Construction Manager, Project Environmental Consultant, State and Local Inspectors.

C. Entry into the work area by unauthorized individuals shall be reported immediately to the Project Environmental Consultant.

D. Contractor shall be responsible for Project site security during abatement operations.

1.14 EMERGENCY PLANNING

A. Emergency planning and procedures shall be developed by Contractor prior to abatement initiation.

B. Emergency procedures shall be in written form and prominently posted. Contractor shall ensure that all persons entering the work area read these procedures and understand the Project site layout, location of emergency exits and emergency procedures.

C. Emergency planning shall include considerations of fire, explosion, electrical hazards, slips, trips and falls, confined spaces, and heat related injury. Written procedures shall be developed and employee training in procedures shall be provided by Contractor.

D. Employees shall be trained in evacuation procedures in the event of work place emergencies.

1. For non-life threatening situations, employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the work place to obtain proper medical treatment.

2. For life threatening injury or illness, worker decontamination shall take least priority. After measures to stabilize the injured worker, remove him from the work place and secure proper medical treatment.

3. Telephone numbers of all emergency response personnel shall be prominently posted in the clean and equipment rooms.

1.15 FIRE PROTECTION

A. All plastic, spray-on strippable coatings, and structural materials used in the asbestos abatement process shall be UL-approved and certified as fire retardant or noncombustible.

B. Wood shall be pressure impregnable and certified as fire retardant.

C. Safety Data Sheets (SDS) for fire retardant materials shall be made available upon request.

D. All combustible rubbish and debris, including asbestos waste shall be properly packaged, labeled and stored in a District designated lockable storage facility at the end of each working day.

E. A minimum of one (1) 4A/60BC dry-chemical extinguisher shall be maintained at each of the following locations:

1. At each corner of the work area. Where no clear corners exist, four (4) extinguishers shall be placed around the exterior wall of the work area so that they are approximately 25 percent of the total distance apart.

a. Exception: Where total contained work area is less than 1,000 square feet, two (2) 4A/60BC extinguishers shall be provided. All extinguishers shall be clearly identified with red tape.

2. Contractor shall ensure that on site personnel are aware of the location and proper use of all extinguishers and other fire/life safety equipment.

F. All existing fire detection, alarm systems, connections and standpipes shall remain in place, active and unobstructed. Any alteration to this equipment must be approved by the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Generally, Contractor shall carefully adhere to the following:

1. All plastic, spray-on strippable coatings and structural materials used shall be UL-certified as fire retardant or non-combustible.

2. Fire-retardant polyethylene sheeting utilized for worker decontamination and construction/containment barriers shall be a minimum of six-mil in thickness.

3. Disposal bags used to package hazardous waste shall be of six-mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.152 (b) and 8 CCR 1529.

4. Warning signs as required by Cal/OSHA shall be utilized.

B. Removal and Encapsulation:

1. Apply surfactant during removal work activities.

2. Apply an encapsulating agent to the substrate surfaces from which asbestos-containing material has been stripped.

3. Mastic removal solvents shall be of the low odor variety.

2.2 EQUIPMENT

A. General:

1. A sufficient quantity of HEPA vacuums and/or differential pressure air filtration devices equipped with HEPA filtration shall be used to control asbestos fibers during the removal of asbestos containing materials. To calculate total air flow requirement:

$$\text{Total ft}^3\text{/min} = \frac{\text{Vol. of work area (in ft}^3\text{)}}{\text{15 min}}$$

To calculate the number of units needed for the abatement:

$$\text{Number of units needed} = \frac{\text{[total ft}^3\text{/min]}}{\text{[capacity of unit in ft}^3\text{/min]}}$$

2. At a minimum, full-face powered air-purifying respirators (PAPRs) equipped with HEPA filters cartridges shall be utilized during all friable/Class I asbestos removal and for all removal of lead-containing paints/substances involving abrasive removal techniques.

3. At a minimum, half-face air-purifying respirators with P-100 cartridges shall be utilized for the removal of all non-friable/Class II asbestos removal, and lead coated, ceramic tile, and impacted damaged lead-based paint except abrasive removal.

4. Respirators shall be furnished to the abatement workers by Contractor. The respirators shall have been tested and approved by National Institute of Occupational Safety and Health (NIOSH) for use in asbestos-contaminated atmospheres.

5. Full body disposable protective clothing, including head, body, and foot coverings shall be furnished to workers and visitors by the abatement contractor. The clothing shall include adequate sizes to accommodate movement without tearing.

6. Additional safety equipment as supplied in accordance with 8 CCR 1514, (e.g. hard hats meeting the requirements of 8 CCR 1515, eye protection meeting the requirements of 8 CCR 1516, safety shoes meeting the requirements of 8 CCR 1517, hand protection meeting the requirements of 8 CCR 1520, hearing protection meeting the requirements of 8 CCR 1521 and body protection meeting the requirements of 8 CCR 1522), as necessary, shall be furnished to all workers and authorized visitors.

B. Removal:

1. Removal shall be performed using manual means and methods. Perform removal in manageable section and perform continuous clean-up of debris. Mechanical removal shall only be perform in conjunction with Owner approved HEPA air filtration systems.

2. Perform detail cleaning using HEPA vacuuming and wet wiping methods. No

brooms shall be used during asbestos and lead-based paint related work.

C. Encapsulation: Encapsulants shall be sprayed using airless spray equipment or hand pressurized sprayer.

PART 3 - EXECUTION

3.1 CLEAN-UP PROCEDURES

A. Remove and containerize all visible accumulations of asbestos-containing material, and asbestos/lead-contaminated debris utilizing rubber dust pans and rubber squeegees to move material around. Do not use metal shovels to pick up or move accumulated waste within contained work areas.

Asbestos-containing/contaminated waste shall be packaged and label in accordance with EPA regulation 40 CFR 61.152 (b) (I) (iv), Cal/OSHA (Title 8 CCR Sections 1529 and 5208), SCAQMD Rule 1403, and if applicable Title 22 CCR Section 66504.

Lead-waste wastes shall be packaged and label as required by 8 CCR 1532.1 and 22 CCR 66504.

All other hazardous wastes shall be containerized as appropriate and disposed of in a manner that satisfies the requirements for waste characterization and disposal in accordance with the requirements of Title 22 of the California Code of Regulations, Sections 66243, et seq., and Sections 25157.8, et al, of the California Health and Safety Code.

B. Whether cleaning an asbestos work area or a lead work area (or both), wet clean all surfaces in the work area using a HEPA-vacuum, as appropriate.

C. After gross cleaning of the work area, HEPA-vacuum and wet clean all objects and surfaces in the work area are completed, remove all containerized waste from the work area.

D. Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.

E. Project Environmental Consultant and the abatement contractor representative will inspect the work area for visible residue. If any accumulation of residue is observed, a second settling period and cleaning cycle repeated at no additional cost to Owner.

F. Following the satisfactory completion of clearance air monitoring or clearance wipe testing, the remaining barriers may be removed and prepared for proper disposal. A final visual inspection by Project Environmental Consultant and the abatement contractor representative will be performed. Unsatisfactory conditions may require additional cleaning and air monitoring/wipe sampling, at no additional cost to Owner.

3.2 WORKER DECONTAMINATION SYSTEMS

A. Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit regulated work areas.

B. Worker decontamination enclosure systems constructed at the Project site shall utilize six-mil, fire-retardant polyethylene sheeting, or other approved materials for privacy.

C. Personnel Decontamination Units shall not be located inside the work area(s) unless specifically authorized by the Project Environmental Consultant.

D. Alternate methods of providing Decontamination facilities may be submitted to the Project

Environmental Consultant for approval. Do not proceed with any such method(s) without the written authorization.

E. The worker decontamination enclosure system shall consist of at least a cleansing station in accordance with the requirements of 8 CCR 1527 and 8 CCR 1529, equipped with adequate water, towels and cleansing agents to accommodate the entire crew and visitors.

3.3 DISPOSAL PROCEDURES

A. All Class I friable asbestos waste shall be disposed as hazardous, waste and disposed at an appropriate landfill facility. The waste shall be manifested using a Uniform Hazardous Waste Manifest.

B. All Class II non-friable asbestos waste shall be disposed of as Non-Hazardous, Non-Friable Asbestos Waste. A non-hazardous material data form will be required.

C. All asbestos-containing waste shall be placed and stored in clear, sealed, leak-tight and appropriately labeled containers, in accordance with 8 CCR 1529 and SCAQMD Rule 1403, and transported to an appropriate landfill for disposal.

D. The abatement contractor will be responsible for segregating lead waste (LBP and LCP) into separate waste streams. The contractor will be required to collect a sufficient number of samples to adequately characterize the waste stream. Sample analysis will include at a minimum, Total Threshold Limit Concentration (TTLC), Soluble Threshold Limit Concentration (STLC) and Toxicity Characteristic Leaching Procedure (TCLP).

The contractor shall develop and submit for review a waste sampling and management plan to the Owner and the Project Environmental Consultant.

E. All hazardous wastes (including non-hazardous asbestos wastes) must be transported by a certified waste hauler and disposed off at a waste facility approved by the Owner.

F. Obtain the EPA Hazardous Waste Generator Identification Number and State of California Hazardous Waste Tax Identification Number from the Owner for hazardous waste disposal.

G. All hazardous waste manifests or non-hazardous material data forms shall be delivered to the owner. Record keeping format shall utilize a chain of custody form which includes the names and addresses of the Generator (Owner), Contractor, Waste Hauler, pickup site, disposal site, the estimated quantity of the asbestos waste and the type of containers used. The form shall be signed by the Generator, Contractor, Waste Hauler and the Disposal Site Operator, as the responsibility for the material changes hands.

3.4 REESTABLISHMENT OF THE WORK AREAS

3.4.1 VISUAL INSPECTION

Upon completion of the removal process, the Owner Representative and the abatement contractor will conduct a post-abatement visual inspection. If any material designated for removal, including loose debris, is observed, the Contractor will be required to re-clean that specific area.

3.4.2 ABATEMENT CLEARANCE CRITERIA

1. Following the completion of final clean-up operations, notify the Project Environmental Consultant that work areas are ready for final inspection and clearance air monitoring.

    a. Project Environmental Consultant will then sample the air in the work area for airborne fiber concentrations.

b. Removal areas with less than 160 square feet of removed material, the samples at the discretion of the District, may be analyzed using Phase Contrast Microscopy (PCM) utilizing the NIOSH 7400 method. Minimum of five samples from inside the work area will be collected. Clearance will be issued when all samples results show that the airborne fiber concentrations inside the abatement work area are equal to or less than 0.01f/cc or the background level, whichever is greater.

c. Removal areas with greater than 160 square feet or 260 linear feet of removed material, the samples will be analyzed using Transmission Electron Microscopy (TEM). Minimum of five samples from inside the work area will be collected. If the arithmetic mean of their asbestos structure concentrations per square millimeter is less than or equal to 70 structures per square millimeter, the asbestos removal and clean-up activities within the work area will be deemed to have been completed.

d. If these conditions are not met, decontamination shall be deemed incomplete and the cleaning procedures S shall be repeated. The area shall be re-cleaned and re-tested at no additional cost to Owner until satisfactory levels are obtained.

2. For lead-based removal work, wipe sampling shall be performed within the controlled work areas following completion of demotion work.

a) Release Criteria: Decontamination of the work area is complete when at least one representative sample per work area is analyzed and reveals lead concentrations below 40 micrograms of lead per square foot of area on interior floors, 250 micrograms of lead per square foot of area on window channels/sills and 800 micrograms of lead per square foot of area on exterior floors.

b) If these conditions are not met, then the decontamination is incomplete and the cleaning procedures noted in Article 3.1 above shall be repeated. The area shall be re-tested at no additional cost to Owner until satisfactory levels are obtained.

c) For removal/demolition of lead-based painted components where the component was removed intact, without creating a disturbance to the LBP, clearance will be issued upon passing of a final visual inspection completed as described in section 3.4.1 of this work plan.

3.5 ENVIRONMENTAL MONITORING

Air monitoring will be carried out by the Project Environmental Consultant on behalf of the Owner to verify that the building beyond the contamination area and the outside environment remains uncontaminated.

Area Air Monitoring: The Project Environmental Consultant will conduct in-progress air monitoring daily to determine area airborne contaminant concentrations within the confines of the work area.

Environmental Air Sampling: Ambient air samples are taken and analyzed to indicate fiber migration from containment to the environment. Should any environmental sample outside work areas exceed the base line of 0.01 f/cc of air or established background concentrations as determined by PCM analysis, all work will immediately halt except for corrective work. The PEC shall determine the source of the high fiber count and notify the contractor with directions for the corrective action.

3.6 OSHA PERSONNEL AIR MONITORING

Air monitoring required by Cal/OSHA is the responsibility of the contractor. The contractor is responsible for providing daily Cal/OSHA compliance monitoring as per 8 CCR 1529 for asbestos and *CCR 1532.1 for lead.*

A. At minimum, Contractor shall conduct representative breathing zone personal air monitoring of its employees and repeated daily or until a "negative exposure assessment", as derived in accordance with 29 CFR 1926.1101 (f)(2)(iii) and 8 CCR 1529 for asbestos.

B. Employers must assess the amounts of lead breathed by workers on a regular basis for each trigger task as per 8 CCR 1532.1. This is usually done by employee breathing zone air sampling. Air sampling results are used to determine the protective measures needed as well as the type of respirator that must be worn for protection.

1. ***Level 1 trigger tasks*** Any of the following with lead-containing coatings or materials: spray painting, manual demolition, manual scraping or sanding, use of heat gun, power tool cleaning with dust collection system. Minimum required respirator: half-mask respirator with N-100, R-100 or P-100 filters.

2. ***Level 2 trigger tasks*** Any of the following with lead-containing coatings or materials: using lead-containing mortar, lead burning, rivet busting, power tool cleaning without dust collection system, clean-up activities using dry expendable abrasives, abrasive blasting enclosure movement or removal. Minimum required respirator: air-supplied hood or helmet, or loose fitting hood or helmet powered air purifying respirator with N-100, R-100 or P-100 filters.

3. ***Level 3 trigger tasks*** Abrasive blasting, welding, cutting, or torch burning on structures where lead-containing coatings or materials are present. Minimum required respirator: half-mask supplied air respirator operated in a positive pressure mode.

C. Monitoring shall be conducted by a qualified air professional experienced and knowledgeable about the methods of air monitoring and in accordance with 29 CFR 1926.1101, 8 CCR 1529 and 8 CCR 1532.1.

D. Monitoring results and appropriate laboratory analysis work shall be posted **within forty-eight (48) hours of the monitoring work.**

3.7 REMOVAL WORK PROCEDURES

3.7.1 ASBESTOS-CONTAINING MATERIALS REMOVAL-ACOUSTICAL PLASTER, TSI REMOVAL

Engineering Controls:

1. Install a full containment work area isolation including critical barriers, a 3-stage worker decontamination facility and temporary negative pressure deferential.

Min. Resp. Protection:

1. Powered Air Purifying Respirators (PARP). The respiratory protection may be downgraded to a half-face APR if the contractor can confirm based on objective data (personnel air sampling) that exposure levels to asbestos during removal of the identified material will be sufficient for that respirator.
2. Perform the required CAL-OSHA worker exposure air monitoring.

Removal:

1. Remove the material using manual means and wet methods. Allow surfactant to soak into material and remove in manageable sections. Do not let debris to accumulate, perform cleaning of up of loose debris continuously.
2. In the attic space, remove all contaminated debris and decontaminate all surfaces in the space by wet wiping and HEPA vacuuming.

Preparation/Transport:

1. Package and label the waste immediately. Store all waste in a lockable storage dumpster.

Disposal:

1. Dispose of as friable, hazardous asbestos containing waste. A waste shipment (manifest) will be required.

3.7.2 ASBESTOS-CONTAINING MATERIALS REMOVAL-FLOOR TILE AND MASTIC, CHALKBOARD/POSTING BOARD MASTIC, PAPER OR MASTIC UNDER HARDWOOD FLOOR AND TRANSITE PIPE

Engineering Controls:

1. Install a containment work area including critical barriers, a 3-stage worker decontamination facility and temporary negative pressure deferential, if feasible.

Min. Resp. Protection:

1. Half-face air-purifying respirators equipped with HEPA-P100 filters.
2. Perform the required CAL-OSHA worker exposure air monitoring.

Removal:

1. Remove the material using manual means and wet methods. Allow surfactant to soak into material and remove in manageable sections. Do not let debris to accumulate, perform cleaning of up of loose debris continuously.
2. For the transite pipe, remove the pipe intact if feasible.
3. For assumed paper and mastic under hardwood floor, perform bulk sampling prior to removal. If assumed suspect ACMs are confirmed to be non-present, or non-detected by PLM analysis, then this Section requirements do not apply.

Preparation/Transport:

1. Package and label the waste immediately. Store all waste in a lockable storage dumpster.

Disposal:

1. Dispose of as non-friable, non-hazardous asbestos containing waste.
2. ***SPECIAL NOTE-solvents used for the removal of flooring adhesives or mastics can be subject to strict disposal requirements. The Contractor shall be responsible for complying with all applicable regulations and reporting requirements if the Contractor utilizes these regulated solvents***.

3.7.3 LEAD-BASED PAINT REMOVAL- PAINT STABILIZATION / COMPONENT REMOVAL

Engineering Controls:

1. Install demarcation signage; drop floors, and critical barriers as necessary and a 2-stage worker decontamination facility with a wash station.

Min. Personal Protection:

1. Half-face air-purifying respirators equipped with HEPA-P100 filters. Disposable clothing (Tyvek [or equivalent] suits) and hand, foot, and eye protection is required.
2. Perform the required CAL-OSHA worker exposure air monitoring.

Removal:

1. Remove and stabilized all damaged loose and flaky paint prior to the component removal or surface preparation for repainting etc. Apply a paint sealer to the stabilized painted areas.
2. No mechanical removal such as saw cutting, torching cutting welding etc. through lead-based paint shall be conducted. Painted components which may require cutting shall first be spot abated. The paint in the area to be cut shall first be removed entirely at a minimum 6 inches to each direction of the cut point. The contractor will be required to submit a work plan, separate from this plan for any planned work involving mechanical means or removal stated above. The plan must be reviewed and approved by the District prior to the contractor beginning any work.

Preparation/Transport:

1. Package the waste generated by the paint stabilization and separate the waste into waste streams. Conduct the required waste characterization for disposal. (Refer to Section 3.3 of this document).

Disposal:

1. Dispose of all lead waste in accordance with Federal, State, and Local regulations.

3.7.4 LEAD-BASED PAINT REMOVAL- CERAMIC DEMOLITION

Engineering Controls:

1. Install a full containment work area including critical barriers, and a 3-stage worker decontamination facility and temporary negative pressure differential.

Min. Personal Protection:

1. Half-face air-purifying respirators equipped with HEPA-P100 filters. Disposable clothing (Tyvek [or equivalent] suits) and hand, foot, and eye protection is required.
2. Perform the required CAL-OSHA worker exposure air monitoring.

Removal:

1. Remove the material in manageable sections using manual means and wet methods.

Preparation/Transport:

1. Package the waste into waste streams. Conduct the required waste characterization for disposal. (Refer to Section 3.3 of this document).

Disposal:

1. Dispose of all lead waste in accordance with Federal, State, and Local regulations.

3.7.5 LEAD-CONTAINING PAINT CONSTRUCTION RELATED WORK

All construction work activities impacting lead-containing paints (LCP) (paints reported below 5,000 ppm) completed for this project, such as but not limited to demolition, removal, renovation etc. remain subject to Cal/OSHA worker exposure requirements (8 CCR 1532.1) including the use of respirators, protective clothing, training, air monitoring, waste disposal, etc. Further, it is the Contractors responsibility to ensure that his workers are adequately protected to potential lead exposure during the initial monitoring period. It is the responsibility of the contractor to fully comply with the requirements of the Cal/OSHA regulation. Cal/OSHA requirements are summarized below:

a. Employers must assess the concentration of lead breathed by workers on a regular basis for each trigger task as per Section 1532.1(d). This is usually done by employee breathing zone air sampling. Air sampling results are used to determine the protective measures needed as well as the type of respirator that must be worn for protection.

i. ***Level 1 trigger tasks*** Any of the following with lead-containing coatings or materials: spray painting, manual demolition, manual scraping or sanding, use of heat gun, power tool cleaning with dust collection system. Minimum required respirator: half-mask respirator with N-100, R-100 or P-100 filters.

ii. ***Level 2 trigger tasks*** Any of the following with lead-containing coatings or materials: using lead-containing mortar, lead burning, rivet busting, power tool cleaning without dust collection system, clean-up activities using dry expendable abrasives, abrasive blasting enclosure movement or removal. Minimum required respirator: air-supplied hood or helmet, or loose fitting hood or helmet powered air purifying respirator with N-100, R-100 or P-100 filters.

iii. ***Level 3 trigger tasks*** Abrasive blasting, welding, cutting, or torch burning on structures where lead-containing coatings or materials are present. Minimum required respirator: half-mask supplied air respirator operated in a positive pressure mode.

All lead waste shall be segregated into separate waste streams. The contractor will be required to collect a sufficient number of samples to adequately characterize the waste stream. Sample analysis will include at a minimum, Total Threshold Limit Concentration (TTLC), Soluble Threshold Limit Concentration (STLC) and Toxicity Characteristic Leaching Procedure (TCLP). Refer to Section 3.3 for additional information.

End of Section