LEAD and PCB ABATEMENT PROJECT SPECIFICATIONS

OAK GROVE HIGH SCHOOL
285 BLOSSOM HILL ROAD
SAN JOSÉ, CA 95123

SHADE STRUCTURE

ESUHSD – OAK GROVE HS
(ESUHSD PROJECT: Z-050-602)

Prepared for:
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GENERAL LEAD REMOVAL SPECIFICATIONS

1.0 GENERAL

1.1 Description

A. This section consists of furnishing all work necessary to perform the removal, packaging, handling, transportation, and disposal of lead-containing materials and lead-contaminated materials located within the project limits. All work shall be performed in accordance with all federal, state, and local requirements and statutes.

B. The work specified herein shall be the removal of lead-containing materials by persons knowledgeable, qualified, and trained in the removal, treatment, handling, packaging, transportation, and disposal of lead-containing materials, and the subsequent cleaning of the affected environment. These persons shall comply with all federal, state and local regulations and mandated work practices, and shall be capable of performing the work in the Contract.

1.2 Scope of Work

A. General Requirements: Work of this section includes, but is not limited to, the following:

1. See the attached appendix entitled Lead Abatement Scope of Work

2. Providing dust control as required to protect the Contractor's employees, Owner Staff, visitors/guests, and passers-by from lead exposure. The lead concentration in the air outside of the lead work control area but inside of the work area (inside of the construction fence) shall not exceed 10 micrograms per cubic meter ($\mu g/m^3$). The airborne lead concentration outside of the work area shall not exceed the background airborne lead concentration as tested by the HazMat Project Manager (HPM) prior to the commencement of any on-site activity.

3. The work includes protecting the site (specifically the soil surrounding the building and landscaping), the building structure, facility, any and all furniture, fixtures, etc., from further lead contamination.

4. The Contractor shall perform employee exposure monitoring as required by Cal-OSHA during the project

B. The following precautions should be taken prior to initiating demolition activities involving any lead-containing material.

1. The Contractor shall not perform any lead-related demolition activities until an initial exposure assessment has been performed and submitted to the Owner's Representative.

2. The Contractor shall install lead dust control measures, lead waste and debris retention areas, worker protection, and decontamination areas in accordance with this Section, the Contractor's work plan, and lead exposure assessment data.

C. Pre-Project Initial Exposure Assessment and Test Section: Prior to performing any lead-related demolition work, the Contractor shall perform an initial exposure assessment as described in 8 CCR 1532.1. The initial exposure assessment shall be performed through the preparation of "Lead-Related Construction Demolition Test Sections", if deemed necessary. The Test Section work shall be performed a minimum of two weeks prior to initiating lead-related demolition work at the building. During work on the Test Section, all Supervisors/Competent Persons shall

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be certified as Lead-Related Construction Supervisors and all workers shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8.

D. Lead-Related Demolition Scope of Work: The Contractor shall remove, package, transport, and properly dispose of the lead-containing and lead-contaminated items referred to in Appendix A for specific locations. Quantities shall be field verified.

E. Where exterior lead containing material is encountered:

1. Remove or protect bushes and landscaping from the perimeter of the building out to 15 feet from the base of the buildings as required for soil protection. When necessary, cut the bushes and landscaping flush with the ground. Dispose of the bushes and landscaping as construction debris following removal.

2. Remove, package, transport, and properly dispose of all lead-containing painted exterior components on the Buildings including but not limited to exterior wood cladding (siding), door components, window components, fascia boards and roof overhang components. Remove, package, transport, and properly dispose of the lead-containing window glazing located on the Buildings. Remove, package, transport, and properly dispose of all lead-containing painted interior doors in the Buildings. The Owner may have performed waste characterization sampling of these items. If not the contractor shall be responsible for the same. All work associated with the removal of the exterior components and interior doors shall be performed in accordance with this Section, the Contractor's lead-related demolition work plan, and the procedures utilized during the Test Section work.

3. Remove, package, transport, and properly dispose of all lead-containing painted components located on the interior of Buildings. These components include, but are not limited to, gypsum wall and ceiling board systems, wood wallboard, wood base cove, and interior door frame components. The Owner may have performed waste characterization sampling of these items. If not the contractor shall be responsible for the same. All work associated with the removal of the exterior components and interior doors shall be performed in accordance with this Section, the Contractor's lead-related demolition work plan required by Article 1.08, and the procedures utilized during the Test Section work.

4. The Owner has sampled the soil around the perimeter of the buildings. The Contractor is responsible for protecting the soil on the perimeter of the building from becoming contaminated with lead in excess of 350 ppm or established 'baseline' levels – which ever is lower. After completion of the lead-related demolition work the Owner will again sample the soil. The testing and analysis of the soil samples will require five to eight working days to complete. If the lead concentration in the soil exceeds 350 ppm, or established 'baseline' levels – which ever is lower, the Contractor shall perform the following work at no additional cost to the Owner.

   a. The Contractor shall remove the top six inches of soil from the base of the building/ point of work to a minimum distance of ten feet from the point of work and extending out to the perimeter of the work area. The contractor shall perform the removal of the soil in two days or less.

   b. The waste soil shall be packaged and placed into waste containers in accordance with the requirement of the waste transporter and disposal facility.

   c. The contractor shall retain the HazMat Project Manager that was on-site during the lead-related demolition project to perform perimeter air monitoring.

   d. At the completion of the soil removal project, the HazMat Project Manager will collect representative waste characterization samples of the soil waste. The soil waste samples will be evaluated for their conformance with the requirements of Title 22 and the requirements of the waste transporter and disposal facility.

e. The testing and analysis of the soil waste characterization samples will require five to eight business days to complete. The Contractor shall leave the waste containers on the project site until receipt of the waste sample characterization sample results.

1.3 Related Work

SECTION 02 82 13 – ASBESTOS RELATED DEMOLITION WORK

1.4 Required Licensure and Certification

A. Licensure – For all Contractor(s) or Sub-Contractor(s) involved in any facet of lead related work enumerated as part of this project the following license(s) shall be current and be maintained in current status throughout the duration of the project.

a. A copy of the current California Contractors State License Board (CSLB) License (minimum requirement is a Class B license or a Class C license) for any **and**
b. US EPA Certification under the Toxic Substances Control Act (TSCA) Section 402 Repair, Renovation and Painting activities (RRP) pursuant to 40 CFR Part 745.89.

Contractors having endorsements, riders or qualifiers on any of their licenses such as (but not limited to) 'for bidding purposes only' etc. are ineligible to perform work as part of this contract.

B. Transportation of Lead-Containing Materials: Contractor shall be a registered hazardous waste transporter with State of California, Department of Toxic Substances Control. If the Contractor is not a registered hazardous waste transporter, the Contractor shall have a listed subcontractor that is a registered hazardous waste transporter with State of California, Department of Toxic Substances Control. Copies of the current, relevant registration certificate(s) shall be submitted as a part of the pre-job submittal.
Throughout the duration of the project, all Supervisors/Competent Persons shall be certified as Lead-Related Construction Supervisors and all workers shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8.

1.5 Applicable Documents and Regulations

A. It is the responsibility of the Contractor to know the current regulations controlling work and to perform all project related work in accordance with such regulations that provide for worker and public safety against lead exposure.

B. The publications listed below form a part of this specification to the extent referenced. The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply. The publications are referenced in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR Part 1910	Occupational Safety and Health Standards for General Industry
29 CFR Part 1910.134	Respiratory Protection
29 CFR Part 1926	Occupational Safety and Health Regulations for Construction
29 CFR Part 1926.62	Lead

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 148	Hazardous Waste Injection Restrictions
40 CFR Part 260	Hazardous Waste Management Systems: General
40 CFR Part 261	Identification and Listing of Hazardous Waste
40 CFR Part 262	Standards Applicable to Generators of Hazardous Waste
40 CFR Part 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR Part 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR Part 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR Part 268	Land Disposal Restrictions

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(1989) Methods of Fire Test for Flame-Resistant Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH OSHA Booklet 3142	Lead in Construction

CALIFORNIA CODE OF REGULATIONS (CCR)

8 CCR Part 1532.1	Lead
8 CCR Part 5194	Hazard Communication
17 CCR, Div. 1, Cpt. 8	Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards
22 CCR, Div. 4, Cpt. 30	Hazardous Waste Handling
26 CCR Part 3203	Illness and Injury Protection
26 CCR Part 3220	Emergency Action Plan
26 CCR Part 3221	Fire Prevention
26 CCR Part 5144	Respiratory Protection

CALIFORNIA HEALTH AND SAFETY CODE Section 25157.8 (from AB 2784 Strom-Martin, 1998)

UNDERWRITERS LABORATORIES (UL)

UL 586	(1990) High-Efficiency, Particulate, Air Filter Units

CALIFORNIA LABOR CODE
Section 6501.5-6505.5

ALL OTHER FEDERAL, STATE, COUNTY AND LOCAL CODES AND ORDINANCES AS APPLICABLE.

1.6 Notifications and Permits

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

1. California Division of Occupational Safety and Health (Cal-OSHA) -
   Lead Work Pre-Job Notification shall be accordance with 8 CCR Part 1532.1.
   California Department of Public Health (CDPH) Form CDPH 8551

2. Local or facility agencies as applicable.

1.7 Supervisor/Competent Person and Workers

All valid and current Supervisor/Competent Person and Workers documentation shall be physically present on site, prior to any lead related work being performed by that person. Failure to comply with this requirement shall render the person ineligible to work until the required documentation is available on site.

A. The Contractor shall have a California Department of Public Health (CDPH) Lead-Related Demolition Supervisor/Competent Person present at all times while work on this Contract is in progress. The Lead-Related Construction Supervisor/Competent Person shall possess the following training and certifications regardless of the results of the Test Section work. All certificates are to remain current and complete throughout the duration of the project.

B. The Lead-Related Demolition Supervisor/Competent Person shall have successfully training meeting the requirements of 8 CCR Part 1532.1 and 17 CCR, Division 1, Chapter 8. Training shall be provided prior to the time of job assignment and, at least, annually. The Supervisor/Competent Person shall be thoroughly familiar and experienced with lead removal and related work, and shall be familiar with and enforce the use of all safety procedures and equipment. He/she shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines. Additionally, the Supervisor/Competent Person shall be certified as a Lead-Related Construction Supervisors in accordance with 17 CCR, Division 1, Chapter 8.

C. Throughout the duration of the project, including during work on the Test Section, all workers shall have received training in accordance with 8 CCR Part 1532.1 and 17 CCR, Division 1, Chapter 8. The training shall be provided prior to the time of job commencement and, at least, annually. Additionally, all workers performing work shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8. All certificates are to remain current throughout the duration of the project. Throughout the duration of the project the lead-related worker training and certification requirements listed below will be required. The Contractor shall submit documentation that the workers have received the training. The training shall be for a minimum of eight hours. Worker training including the following information is required at a minimum. All certificates are to remain current and complete throughout the duration of the project.

1. An employee's right to access to records under 29 CFR Part 1910.1020.

2. The contents and requirements of 29 CFR Part 1926.62 and 8 CCR 1532.1.

3. The specific nature of the operation that could result in exposure to lead.

4. The purpose, proper selection, fitting, use, and limitations of respirators.

5. Purpose and description of the medical surveillance program and the medical removal protection program, including information concerning the adverse health affects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant).

6. Relevant engineering controls and good work practices.

7. The contents of any compliance plan in effect.

8. Instructions that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

D. If the Contractors means and methods change from those presented in the lead-related demolition work plan and during the work of the Test Section, the Contractor shall perform another exposure assessment to determine the training requirements for the lead-related demolition workers.

E. If the ongoing personal air monitoring performed by the Contractor indicates that the Action Level is being exceeded, the contractor shall provide lead-related demolition workers with the training and certifications required above.

F. Current and complete documentation from a Physician that all employees or agents who may be exposed to airborne lead in excess of the action level have received a comprehensive medical examination as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and will receive continued medical surveillance, including biological monitoring, as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and by the state and local regulations pertaining to such work. Records shall be retained, at Contractor's expense, in accordance with 29 CFR Part 1910.1020. Biological monitoring is to include Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP). These tests

are to be performed not more than 30 calendar days PRIOR to the commencement of work and results be presented prior to the commencement of the removal of any lead containing materials. If the work schedule is phased, the tests are to be repeated prior to the commencement of each phase of work; unless the close of one phase, and the commencement of the next phase, are less than 30 calendar days apart.

G. Current and complete documentation from a Physician that all employees or agents who may be exposed to airborne lead in excess of the action level have received medical monitoring in accordance with 29 CFR Part 1926.62 to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. 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, and chemical contaminants) that may impact on the employee's ability to perform work activities.

H. Current and complete documentation of respirator fit-testing, performed within the last twelve months, for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature

1.8 Submittals

A. Submit, as applicable, the following to the Owner's Representative for approval within Ten (10) days of receiving the "Notice to Proceed" or at least Ten (10) Working Days prior to the start of work. These submittals are in addition to those required in any other section(s) or sub-section(s) of these documents. This document shall be submitted by the contractor performing the work and not by any other. Include at the very least the following:

1. Notifications. All notifications shall be current and valid throughout the duration of the project. Any material changes to the notification, i.e., the quantity of materials being removed, the physical materials being removed, the duration of the project, etc. shall require revisions to the regulatory agencies, with copies provided to the HPM on site. Copies of the written notification and confirmations at least to/from the following regulatory agencies will be required:
   a. California Division of Occupational Safety and Health (Cal-OSHA) Lead Work Area Pre-Job Notification.
   b. Notification to the California Department of Public Health (Form 8551).

2. Waste Haulers – Copies of:
   a. Identification of the Waste Hauler(s) for both Hazardous and Non-Hazardous Lead Waste for this Project.
   b. California Department of Toxic Substances Control (DTSC) Waste Transporter registration for each Waste Hauler.
   c. California Department of Motor Vehicles (DMV) Motor Carrier Permit for each Waste Hauler.
   d. U.S. Department of Transportation (DOT) Registration and U.S. Environmental Protection Agency (EPA) acknowledgement of Notification of Hazardous Waste Activity for each Waste Hauler *(only required if waste is to be transported out of State).*
   e. Statement indicating that all waste generated on this specific site shall be transported by/disposed of by licensed, insured and certified personnel/locations.
   f. Statement that the types of Waste Containers being used for this Project will be accepted by the Waste Hauler(s) for the storage and transport of both Hazardous and Non-Hazardous Waste.

3. Waste Disposal Facility - Landfill and/or Recycling Facility – Copies of:
   a. Identification of the Landfill(s)/Recycler(s) to be used for the disposal of both Hazardous and Non-Hazardous Lead containing Waste generated at the Project site.
   b. Permits for the Landfill(s)/Recycler(s) to be used for the disposal of both Hazardous and Non-Hazardous Lead waste generated at the Project site.
   c. Identification of the Types of Waste accepted at the Landfill(s)/Recycler(s).
   d. Identification of the Types of Waste Profiling required by the Landfill(s)/Recycler(s).
   e. Statement that the types of Waste Containers being used for this Project will be accepted by the Landfill(s)/Recycler(s) for both Hazardous and Non-Hazardous Waste.

4. Licensure – For all Contractor(s) or Sub-Contractor(s) involved in any facet of lead related work enumerated as part of this project the following license(s) shall be current and be maintained in current status throughout the duration of the project.
   a. A copy of the current California Contractors State License Board (CSLB) License (minimum requirement is a Class B license or a Class C license) for any **and**
   b. US EPA Certification under the Toxic Substances Control Act (TSCA) Section 402 Repair, Renovation and Painting activities (RRP) pursuant to 40 CFR Part 745.89.

Contractors having endorsements, riders or qualifiers on any of their licenses such as (but not limited to) 'for bidding purposes only' etc. are ineligible to perform work as part of this contract.

5. Work Plan – A detailed written lead-related demolition work plan including, but not limited to, the following:
   a. Identification of all Lead Scope of Work items and Trigger Tasks that are part of this Project, as well as, the Waste Streams the contractor anticipates generating during the course of performing the work listed in the Scope of Work;
   b. Identification of entire Work Sequence (schedule) for this Project, including specifics of materials being removed/stabilized and the correlation between work areas and Types of Work (Lead, Asbestos, PCB, etc. as applicable);
   c. Identification of abatement duration;
   d. Identification of dust control measures;
   e. Identification of work area preparation;
   f. Identification of construction for decontamination enclosure systems;
   g. Identification of demarcation protocols. i.e., installation of Lead barrier tape, barrier fence, Lead Work signage, etc.;
   h. Identification of work area isolation protocols;
   i. Identification of detailed specific Lead containing materials removal procedures;
   j. Identification of Lead containing/contaminated debris clean-up and disposal procedures;
   k. Identification of Personnel Protective Equipment (PPE) to be utilized as part of this project;
   l. Identification of waste handling, storage and disposal procedures;
   m. Identification of construction for chutes, (if required for this project).

6. HEPA vacuums, differential pressure air filtration devices and other local exhaust ventilation equipment. – Copies of:
   a. Manufacturer's certification that HEPA vacuums, differential pressure air filtration devices, filters and other local exhaust ventilation equipment conforms to ANSI Z9.2-79.
   b. Notification that required onsite testing has been scheduled for any and all differential pressure units, HEPA vacuum cleaners, etc. to ensure that the filtration efficiency meets the criteria for HEPA filtration devices, i.e., 99.97% efficiency at arresting mono-dispersed particulate matter greater than 0.03 micrometers in diameter.

7. SDS – The Contractor shall submit copies of the Safety Data Sheet, fire retardant certification or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material, spray glue, mastic removal agent, plastic sheeting, adhesive/duct tape, etc. or other chemicals/products for use on this project, including the specific worker protective equipment proposed for use with the material indicated.

8. Personnel Documentation
   a. Identification of the project's Lead-Related Supervisor who is experienced in administration and supervision of lead-containing material demolition projects, including work practices, protective measures for building and personnel, disposal procedures, etc. including a legible photocopy of the California Department of Public Health (CDPH) Certified Lead Construction Supervisor's card.
   b. Current and complete documentation that the Contractor's Lead-Related Construction Supervisor/Competent Person and Lead-Related Demolition Workers performing Lead-related demolition,

disposal, and air sampling operations have received training and are certified including a legible photocopies of the California Department of Public Health (CDPH) Certified Supervisor and Certified Lead Worker cards.

c. Provide as part of the pre-job submittal a letter from the contractor, signed by a responsible and authorized officer of the contractor's company certifying the following – "This is to certify that all our personnel involved with affecting any lead containing or coated materials/surfaces are subject to current and valid medical monitoring in accordance with 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and that they will receive continued medical surveillance, including (a) the ability to work while wearing required respiratory protection without suffering adverse health affects and (b) biological monitoring [include Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP)], as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and by all state and local regulations pertaining to such work. Furthermore, we certify that all relevant records shall remain valid and current throughout the project and that historical records will be retained by us, in accordance with 29 CFR Part 1910.1020." The contractor may issue this letter and identify and list (by name) all of their employees who will be on site for this project or, alternatively issue an individual letter per employee.

d. Current and complete documentation of respirator fit-testing for Contractor employees and agents who must enter the work area. This fit-testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature

9. Respirators and Filters – Copies of Manufacturer's documentation and certification of NIOSH approvals for respiratory protective devices utilized on site, including manufacturer's certification of NIOSH approval of respirator cartridges (organic vapor, acid gas, mist, dust, high efficiency particulate) and High Efficiency Particulate Air (HEPA) filtration capabilities for all cartridges and filters.

10. Testing Laboratory – Identification of the Independent Testing Laboratory (name, address, and telephone number) selected to perform analysis of personal air samples. Documentation shall be provided that the laboratory selected to perform the analyses is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and is rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT), including accreditation for heavy metal analysis. The documentation shall list experience relevant to the analysis of lead in air and include a Quality Assurance and Quality Control Program. Currently, the American Association for Laboratory Accreditation (AALA) and the American Industrial Hygiene Association (AIHA) are the EPA recognized laboratory accreditation agencies. Documentation must also be provided that the laboratory is certified by the California Department of Public Health (CDPH).

11. Site Specific Documentation – Copies of:
    a. Identification of Work Area(s) at the site;
    b. Identification of the nearest medical facility and route map/directions to the medical facility;
    c. Emergency Contact Information and numbers for Emergency services as well as the contractors' emergency contact personnel and information;
    d. Identification of on-site emergency meeting location;
    e. Identification procedures for personnel accounting during an emergency.

12. Contractor General Documents – Copies of:
    a. General Injury & Illness Prevention Program in compliance with 26 CCR 3203.
    b. General Emergency Action Plan in compliance with 26 CCR 3220.
    c. General Fire Prevention Plan in compliance with 26 CCR 3221
    d. Respiratory Protection Program in compliance with 26 CCR 5144.

B. Hazardous Waste Manifests, Non-Hazardous Waste Data forms, trip tickets and disposal receipts for lead waste materials removed from the work area must be received within 24 hours of the transport.

C. On-Site Documentation – Documents to be provided on-site throughout the duration of the project:

1. Provide on a DAILY basis, prior to the start of the shift, results from the personal air samples collected during the abatement process of the prior shift.
2. Provide on a DAILY basis, prior to the start of the shift, copies of the containment entry log pertaining to the abatement process of the prior shift.
3. Provide on a DAILY basis, prior to the start of the shift, copies of the Manometer logs pertaining to the abatement process of the prior shift.
4. Copies of the Safety Data Sheets (SDS) for solvents, encapsulants, wetting agents, neutralizers, any other chemicals/products used on site and replacement materials, as necessary.

D. Following completion of work on the Test Sections, submit to the Owner's Representative documentation that includes the following (the submittals required shall be submitted no later than five business days following completion of the Test Section work):

1. All personal air sampling performed by the contractor during the Test Section work. The personal air sampling results shall be provided as 8-hour TWA results.

2. A description of the Trigger Tasks utilized during the Test Section work.

3. Proposed changes in work procedures, if any, from those that were proposed in the original work plan.

E. Upon completion of all lead-related demolition activities, submit to the Owner's Representative documentation that includes, without limitation, the following (the submittals required shall be submitted no later than 20 business days following the Contractor's demobilization from the project site):

1. Work area entry/exit logbook. The logbook must record name, affiliation, time in, and time out for each entry into the work site.

2. The log of manometer readings showing the pressure differential maintained throughout the project.

3. OSHA, Cal-OSHA, California Department of Public Health (CDPH) required personal exposure air monitoring results.

4. Post project Biological monitoring for each employee who has worked at the site during any phase of lead related work is to include Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP). These tests are to be performed not more than 7 calendar days AFTER the conclusion of work

5. Accident/incident reports where injury or damage has occurred on or to the Owner's property.

6. Hazardous waste manifests, non-hazardous waste data forms, trip tickets and disposal receipts for lead waste materials removed from the work area within 24 hours of the transport.

1.9 Notices and Postings

A. Post in the wash station/decontamination station, a list containing the names, addresses, and telephone numbers of the Contractor, Owner Representative, HazMat Project Manager, and emergency contact numbers.

B. Post at the job site a list of persons authorized to enter the lead-related demolition work area.

C. Additional postings shall include:
1. Visitor entry and exit log.
2. Employee daily sign in/out log.
3. Work area entry and exit procedures.
4. Emergency procedures.

D. One copy of Cal-OSHA and Department of Health Services regulations.

E. Posted Warnings and Notices: The following regulations, warnings, and notices shall be posted at the work site in accordance with 29 CFR Part 1926.62 and 8 CCR Part 1532.1.

1. Warning Signs and Labels: Warning signs shall be provided at building entrances and approaches to lead work control areas containing airborne lead debris. Signs shall be located at a sufficient distance from the lead work control areas that will allow personnel to read the sign and take the necessary protective actions required before entering the lead work control area.

2. Post at least two (2) safety warning signs, in English and Spanish, which follow the "Sample Format Warning Sign" shown below:

Sample Format Warning Sign
Minimum Size – "24" x 36"
Material – Aluminum or Fiberglass
Script:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

F. Posting required by local, state and federal agencies exercising jurisdiction over the work area. These are to include, but not be limited to, warning notices, notices of proposed work activity, copies of notifications to local and state agencies, etc.

1.10 Work Area Security

A. The lead work control area shall be restricted only to authorized personnel, including Contractor, Contractor's employees, Owner's Representative(s), and federal, state, and local inspectors.

B. Entry into the lead work control area by unauthorized individuals shall be reported immediately to the Owner's Representative.

C. Contractor shall be responsible for Project site security during lead-related demolition operations in order to protect work efforts and equipment.

1.11 Personal Protection and Safety

A. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his/her appliances, methods, and for any damages that may result from his/her operations, improper construction practices, or maintenance. He shall erect and properly maintain at all times as required by the conditions and progress of the work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site and at any and all entrances / entryways to the work area(s).

B. Work shall be performed in accordance with the requirements of applicable regulations including, but not limited to 29 CFR Part 1926.62, 8 CCR Part 1532.1, and 17 CCR, Division 1, Chapter 8. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these

requirements vary or conflict, the most stringent shall apply. In the event that work practice variances are granted by the governmental agency having jurisdiction over the work, these variances will be forwarded to the Owner and/or the Owner's representative as soon as the variance has been issued. A copy of the variance must also be posted at the entryway to the work area or if this is not possible, in a prominent place.

C. Respiratory Protection Requirements: A respiratory protection program shall be established as required by 29 CFR Part 1926.103 and 29 CFR Part 1926.62 and in accordance with 29 CFR Part 1910.134. An approved respirator shall be furnished to each employee and visitor required to enter a lead work control area. A fit test shall be conducted in accordance with 29 CFR Part 1926.62.

1. Air-purifying respirators shall be approved by NIOSH for use with dust, fumes, and mists having permissible exposure limits less than 0.005 milligrams per cubic meter (i.e., have P-100 filters) and for other hazardous airborne contaminants that may be encountered, as determined by the Competent Person. Respirators shall comply with the requirements of 29 CFR Part 1926.62 and shall be used in accordance with 29 CFR Part 1926.103, and 29 CFR Part 1910.134.

2. A sufficient supply of respirator filters shall be maintained at the work site to provide new filters to employees, Owner Employees, authorized visitors, and government regulator personnel throughout the duration of the project. Filters shall be replaced according to the manufacturer's recommendations, when breathing becomes difficult, or if the filter becomes wet. At any time during on-site work activity, the contractor shall maintain on-site and readily accessible three (3) new respirators, one in each size, small, medium and large along with the requisite filters/cartridges for the type of work being performed. These respirators will be kept in readiness for the Owner/Owner's representative or any governmental agency representative having jurisdiction over the project.

   Additionally, the contractor shall make available to HPM two (2) sets of new North™ 7700 Series Respirator Filter Cartridges throughout the duration of the project. These filter cartridges shall be appropriate to the work being conducted on site i.e., P100 HEPA cartridge and/or stacked P100 HEPA + Organic Vapor cartridge, etc.

3. Respirators shall be fit-tested utilizing irritant smoke or isoamyl acetate a minimum of every 6-12 months. Either the standard Irritant Smoke Protocol or Isoamyl Acetate Protocol may be used.

D. A Hazard Communication Program shall be implemented in accordance with 29 CFR Part 1926.59.

E. The Contractor, the HazMat Project Manager, and the Owner's Representative shall arrange and hold a preparatory inspection meeting immediately prior to beginning the Test Section, following completion of the Test Sections to discuss the results, following completion of the waste characterization sampling and analysis, and prior to beginning the lead-related demolition work.

F. Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, State, and local regulations.

G. Daily personnel air monitoring results shall be placed in a clearly visible area of the work site and shall be prepared so as to be easily understood by the workers.

H. A list of emergency telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, poison control center, police and fire departments, Government, Contractor, and Owner representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

I. Sufficient quantities of health and safety equipment and supplies as required by 29 CFR Part 1926.62 and 8 CCR Part 1532.1, and other materials and equipment needed to complete the project, shall be available and kept on site. Specific health and safety equipment to be utilized at all times during performance of lead-related demolition work includes the following.

1. Disposable full body suits. The disposable full body suits shall have head and foot covers and shall be of a sufficient size to prevent tearing during performance of the work.
2. Disposable rubber gloves.
3. Hard hats.
4. Safety shoes or boots.
5. Eye and hearing protection.

J. A wash/decontamination station shall be provided on the site at all times that lead-related demolition work is being performed.

1.12 Hazmat Project Manager Services

A. The Owner has contracted with the HazMat Project Manager (HPM) to perform contractor and project monitoring services including the following:

1. Collect side-by-side Contractor employee exposure air samples during the lead-related demolition work.
2. Collect perimeter air samples during the lead-related demolition work.
3. Collect waste characterization samples during the lead-related demolition work.

B. Stop Work Orders. The HPM will stop work in the following situations:

1. If the airborne lead concentration exceeds 10 $\mu g/m^3$ outside the lead-related demolition work area but inside the construction zone.
2. If the airborne lead concentration outside of the lead-related demolition work area exceeds background levels established before the commencement of work.
3. If the Contractors means and methods change, work will be stopped to establish a new exposure assessment.
4. If personal air monitoring indicates that new respiratory protection is required.
5. If the written specifications are being violated or if the owner issued instructions are being circumvented.

SUB-SECTION 02
MATERIALS AND EQUIPMENT

2.0 MATERIALS and EQUIPMENT

2.1 Materials

A. General: Contractor shall adhere to the following:

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

2. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer, brand name (where applicable), and model.

3. Polyethylene sheeting utilized for worker decontamination and barriers shall be black or opaque in color and shall be a minimum of 6-mil in thickness. All polyethylene shall be fire retardant.

4. Waste containers utilized during the project shall be properly labeled as required by 29 CFR Part 1926.62, 8 CCR Part 1532.1, and, if applicable, 22 CCR 66504.

5. Warning signs as required by 8 CCR Part 1532.1 and 29 CFR 1926.62 shall be utilized during lead-related demolition activities.

6. PVC Safety/Barrier Fence (minimum of 4' high) to isolate the work area shall be utilized during any lead-related activities.

2.2 Equipment

A. General:

1. HEPA vacuums equipped with HEPA filtration and operated in accordance with ANSI Z9.2-79.

2. Differential pressure (negative pressure) air filtration devices and other local exhaust ventilation equipment conform to ANSI Z9.2-79. On site testing will be required for any and all differential pressure units, HEPA vacuum cleaners, etc. to ensure that the filtration efficiency meets the criteria for HEPA filtration devices, i.e., 99.97% efficiency at arresting monodispersed particulate matter greater than 0.03 micrometers in diameter.

3. Respirators shall be furnished to the workers by the Contractor. The respirators shall have been tested and approved by National Institute of Occupational Safety and Health (NIOSH) for use in lead contaminated atmospheres. Respirator usage during the project shall be determined by the results of the sampling and analysis performed during the Test Section and shall be in accordance with the requirements of 8 CCR 1532.1 and the work plan submitted by the Contractor. The respiratory requirements below shall be utilized at a minimum:

   a. Half-face air purifying respirators equipped with P-100 filters at a minimum shall be utilized during the Test Section Work.

   b. If the Test Section work, or periodic personal monitoring indicates that the airborne lead concentration will exceed the Action Level, the Contractor shall utilize respiratory protection as indicated by the actual airborne lead concentration.

   c. If the Test Section work indicates that the airborne lead concentration will not exceed the Action Level, the

Contractor at his discretion may downgrade the respiratory requirements for the project. The minimum permissible respiratory protection throughout the project, permitted by these specifications is a half-face (half-mask) negative pressure respirator equipped with P-100 respirator. This minimum standard shall be adhered to even in the event that the Test Phase of the project determines that respiratory protection is not required. This supercedes any and all instructions to the contrary that may be found in these documents.

4. Contractor shall provide full body disposable protective clothing, including head, body, and foot coverings to workers and visitors in sizes adequate to accommodate movement without tearing. Full body disposable protective clothing shall be utilized at all times during lead-related demolition activities.

5. Additional safety equipment (e.g. hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable gloves), as necessary, shall be furnished to all workers and authorized visitors. This safety equipment shall be utilized at all times during lead-related demolition activities.

6. Non-skid footwear shall be furnished to all workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

7. Furnish disposable mops, rags, and sponges for work area decontamination.

B. Removal:

1. Scaffolds, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be furnished as needed.

2. Rubber dustpans and rubber squeegees shall be furnished for cleanup.

3. Brushes utilized for removing loose lead-containing materials shall have nylon or fiber bristles. Metal bristles shall not be utilized.

SUB-SECTION 03
EXECUTION

3.0 EXECUTION

3.1 Lead-Containing Material Removal Preparation

A. Exterior Lead-Related Demolition Work Area Preparation:

1. Prepare a lead work control area by placing 4' high PVC Safety/Barrier Fence and lead warning tape and proper signage around the area where work will be performed. The PVC Safety/Barrier Fence and warning tape should be placed a sufficient distance away from the removal area to allow persons who are not properly trained or who are not wearing personal protective equipment to avoid the work/contaminated area.
2. Install remote worker decontamination unit described in Article 3.2 or as agreed upon with the Owner's HPM.
3. Lead Workers shall don personnel protective equipment as required in Article 2.2.
4. Place one layer of 6-mil polyethylene sheeting on the ground as close as possible to the foundation, or the exterior floors (i.e., deck or porch) when applicable.
5. Extend plastic sheeting a minimum of ten feet out from the foundation.
6. Weight down the polyethylene sheeting at the foundation, and along all edges and seams.
7. The Contractor shall take extra care when performing exterior lead-related demolition on days when the constant wind speed is 15 mile per hour or over. If the removal procedure is producing dry waste in which visible movement along polyethylene sheeting is evident or if dust or debris is present outside of the lead work control area, the Contractor shall change the methods used for dust control to eliminate the problem. In any event, when visible emissions from the work activity are observed crossing the property line/ work area perimeter, all removal work will cease immediately. The contractor will implement emergency dust control measures and work shall not recommence until permission is granted by the Hazardous Project Monitor.
8. Perform lead removal in accordance with Article 3.06 – Lead-Related Demolition.

B. Interior Lead-Related Demolition Work Area Preparation:

1. Prepare a lead work control area by placing 4' high PVC Safety/Barrier Fence and lead warning tape and proper signage around the area where work will be performed. The PVC Safety/Barrier Fence and warning tape should be placed a sufficient distance away from the removal area to allow persons who are not properly trained or who are not wearing personal protective equipment to avoid the work/contaminated area.
2. Install remote worker decontamination unit described in Article 3.2 or as agreed upon with the Owner's HPM.
3. Lead Workers shall don personnel protective equipment as required in Article 2.2.
4. Place one layer of 6-mil polyethylene sheeting over all critical barriers including HVAC vents, windows, doorways, and corridor openings.
5. Place a drop cloth constructed of one layer of 6-mil polyethylene sheeting in all areas where interior lead-related demolition is to be performed. This drop cloth is to be sized and affixed in such a manner as to prevent any dust and debris landing on it from escaping. Precautions must be taken to prevent slips, trips and falls of personnel walking on this plastic surface.
6. A pressure differential system may be required, refer to the scope of work attached and/or consult with the HPM. If required, the pressure differential system shall produce a minimum of four filtered air changes per hour in the contained work area (work area to include a wood chipper and/or dumpster) and maintains a pressure differential of 0.02-inch water gauge between the inside and outside of the work area on a continuous basis.

7. Perform lead-containing material removal in accordance with Article 3.6 – Lead-Related Demolition.

C. Wood Chipper: The following procedures shall be utilized if a wood chipper is proposed to be used by the Contractor:

1. Construct a contained work area around the wood chipper and waste dumpster. The contained work area shall

be constructed of two layers of 6-mil polyethylene sheeting that is mechanically supported.

2. Install worker decontamination unit described in Article 3.2 or as agreed upon with the Owner's HPM.

3. Lead Workers shall don personnel protective equipment as required in Article 2.2.

4. A pressure differential system shall be established that produces a minimum of four filtered air changes per hour in the contained work area (including the wood chipper and dumpster) and maintains a pressure differential of 0.02-inch water gauge between the inside and outside of the work area.

5. Perform lead-containing material removal in accordance with Article 3.6 – Lead-Related Demolition.

3.2 Remote Worker Decontamination Systems

A. A minimum of one three-stage decontamination system is required to be operational on the site at all times that lead-related demolition is being performed. The decontamination system shall comply with the following requirements.

1. Worker decontamination enclosure systems shall be provided at a location near or adjacent to the lead work control areas. As a minimum, one system at a single location is required.

2. Worker decontamination enclosure systems constructed at the Project site shall utilize 6-mil black or opaque polyethylene sheeting, or other approved materials for privacy.

3. The personnel decontamination unit shall not be located inside the work area unless otherwise authorized by the Owner's HPM.

4. The worker decontamination enclosure system shall consist of at least a clean room, a shower room and an equipment room, each separated from the other and from the work area by flaps comprised of three sheets of 6-mil polyethylene sheeting.

5. Clean rooms shall be sized to adequately accommodate the work crew. Space for storing respirators shall be provided in this area. Clean work clothes; clean disposable clothing, replacement filters for respirators, towels and other necessary items shall be provided in adequate supply at the clean room. Posting of notices shall also be in this area or in an area immediately adjacent to the clean room. Postings shall be sited in a manner to ensure line of site visibility prior to approaching/entering the clean room.

6. Shower rooms shall contain at least a Hudson sprayer for washing the workers hands, face, and respirator. The shower enclosure shall be constructed to ensure against leakage of any kind. Shower water shall be drained, collected and either filtered through a system with at least 0.5-1.0 micron particle sizes collection capability or disposed of as contaminated waste. Additionally, the contractor and their personnel shall make themselves conversant of the requirements of any local water pollution agency or municipal waste water treatment agency prior to discharging any filtered or treated waste water. In no event shall the waste water be discharged without adequate filtration.

3.3 Maintenance of Construction/Lead-Related Work Area Barriers

At any time during the lead related work activities after barriers have been erected, if visible material is observed outside of the work area or if damage occurs to barriers, work shall immediately stop, repairs made to barriers, and debris/residue cleaned up using appropriate procedures. In addition, the barriers shall be moved farther away from the lead-related work area.

3.4 Commencement of Work Shall Not Occur Until

A. Test Section: Work on the Test Section shall not occur until the following items have been completed.

1. Pre-work submissions, notifications, and permits required and submittals have been provided and approved by the Owner's Representative.

2. Construction and lead work control area barriers are in place.

3. At least one wash station/decontamination station is operational.

B. Interior Work Areas: Work on the interior of the building shall not occur until the following items have been completed.

1. The removal of the asbestos-containing floor tile and mastic has been completed.

2. Results from the interior Test Section have been submitted and the work practices for the interior work have been approved by the Owner's Representative.

3. Construction and lead work control area barriers are in place.

4. At least one wash station/decontamination station is operational.

C. Exterior Work Areas: Work on the exterior of the building shall not occur until the following items have been completed.

1. The interior asbestos-related demolition has been completed.

2. The interior lead-related demolition has been completed.

3. Results from the exterior Test Section have been submitted and the work practices for the exterior work have been approved by the Owner's Representative.

4. Construction and lead work control area barriers are in place.

5. At least one wash station/decontamination station is operational.

D. No work task shall be performed without an initial assessment.

3.5 Workplace Entry and Exit Procedures

A. General: The following procedures shall be followed prior to entrance into any lead-related work area:

1. Personnel, before entering the lead-related work area, shall read and be familiar with posted regulations, personal protection requirements (including workplace entry and exit procedures), and emergency procedures.

2. Personnel shall wear respirators, disposable coveralls, head covering, and foot covering. Hardhats, eye protection, and gloves shall also be utilized, as required. Clean protective clothing shall be provided and utilized by each person for each separate entry into the work area.

3. To exit the work area, personnel shall proceed to the wash station/decontamination station where they shall remove protective equipment and deposit disposable clothing into appropriately labeled containers for disposal and wash their hands, face, and any other exposed portions of their body.

3.6 Lead-Related Demolition

A. General - REMOVAL OF LEAD CONTAINING COATINGS

1. The Contractor will be required to remove paints and coatings as identified in areas scheduled for demolition or architectural renovations, as applicable. Do not remove lead-containing coatings with a torch or flame, except as an unavoidable result of welding or torching operations.

2. Grinding/Cutting, Welding or Torching Operations: To the extent feasible, and to avoid direct grinding/cutting, welding, or torching on surfaces containing lead in concentrations greater than 0.64 $\mu g/cm^2$, by manually or chemically removing all layers of the coating to a distance of:
   - For at least four inches (4") on ALL side from the point at which mechanical abrasion or grinding is proposed,
   - at least eighteen inches (18") on ALL side from the point at which heat is proposed to be applied. To prevent the vaporization of lead from the surrounding areas the contractor shall endeavor to keep these surrounding areas cool.

3. Removal of Surface Coatings with Power Tools: Where mechanical removal of surface coatings constitutes an Activity Level II activity, provide power tools with local HEPA exhaust or dust collection systems to capture the aerosolized lead.

4. Maintain all work area surfaces as free as practicable from accumulated dust or debris. Dry sweeping or use of compressed air to remove dust or debris is not permitted. Clean all equipment, tools and containment structures within regulated areas, at a minimum, with HEPA vacuums or wet methods.

5. Conduct operations to prevent injury to adjoining facilities, persons, motor vehicles, etc., as applicable. Prevent chemical cleaning agents from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be injured or damaged by such contact. Do not spray or scrape outdoors during winds of sufficient force to spread cleaning agents to unprotected surfaces.

6. For areas where full abatement is not required, the Contractor shall ensure that the paint that remains on interior walls, ceilings or other area surfaces in areas of active work as applicable, shall be adhered to the substrate sufficiently to support eventual repainting. Paints that peel or loosen during wetting will become part of the scope of work scheduled for abatement.

   In areas where substrate stabilization is called for, the contractor shall smoothen the edges from which paint has been removed (i.e., 'feather') and apply at least three (3) coats of a non-lead containing paint primer to the removed substrate plus at least two feet (in every direction) from the edges of the area of partial removal. The primer used for stabilization shall be suitable for application on the specific substrate. NOTE, THIS OPTION IS NOT AVAILABLE FOR IMPACT OR FRICTION SURFACES WHERE ALL LEAD CONTAINING MATERIALS ARE TO BE REMOVED IN THEIR ENTIRETY TO THE SUBSTRATE.

7. In areas where damaged or other asbestos-containing materials will be disturbed during lead paint abatement, the Contractor shall handle this material in accordance with specification Section 02 82 13 Removed asbestos materials shall be placed in two 6-mil disposal bags and fiber drums and disposed of as asbestos waste. Lead and asbestos wastes shall not be combined, where practical. Mixed debris containing both lead and asbestos needs to be disposed at a landfill licensed to accept both types of waste with proper manifests. Only personnel trained, certified and meeting all criteria of both the asbestos abatement specification (section 02 82 13) and the lead abatement specifications (section 02 83 00) shall be permitted to attempt any removal that impacts both these materials.

8. Non-paint waste items found on floors are to be separated out and disposed of or cleaned by the Contractor. Small pieces of debris, such as broken glass, paper, etc., may be disposed of with the lead paint. - Large

items, such as equipment, furnishing, etc., are to be cleaned by HEPA vacuuming at the same time as the floors and stored on-site as directed by the Owner.

9. Seal all floor openings and protect the floor with polyethylene drop cloths or other acceptable means to prevent contamination or damage to other building surfaces and finishes.

10. Provide HEPA-filtered exhaust units for area ventilation during removal, minimum 1,500-cfm capacity per unit. Provide one unit for each 3,500-sq. ft. of floor space to be covered per workday. Units must be portable and placed in the vicinity of removal operations. Exhaust units outside building. Provide temporary shoring as necessary to support equipment and workers. Establish a minimum of 0.025 inches water gauge negative pressure between the work area and the adjacent areas, as applicable, measured at a location approved by the Environmental Consultant.

11. Work areas may require full or partial scaffolding to allow for continued expiation of the facilities during the construction period. Segregate areas by erecting solid plywood platforms on movable scaffolding and erecting 2 layers of 6-mil polyethylene sheeting to the structure above for full isolation of the assembly.

12. Shoveling, wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and are found to be ineffective.

13. The use of steam cleaning and compressed air removal methods is not permitted. Abrasive removal equipment shall be equipped with local HEPA exhausts or dust collectors.

14. The use of abrasive mechanical cleaning will generally not be permitted, unless approved in advance by the Owner and the Environmental Consultant; this prohibition includes sanding discs, sand blasting, or other abrasive compounds.

15. Strictly conform to the approved cleaning procedures as recommended by the product manufacturer. Should a modification to the cleaning method specified be proposed, submit the proposal in writing for consideration and review by the Owner and its representative. These individuals will have the right to ask for test samples before final approval. Any such modification or change shall be at no additional cost to the Owner.

16. Begin cleaning only after all sample panels and other required submissions are approved and protective means and methods are in pace.

17. Where complete removal is required, finished work shall show no signs of stains, scratches, streaks, or runs of discoloration from use of cleaners. Leave all substrate surfaces neat and clean, including removal of all primers as well as surface coats. All surfaces should be uniformly cleaned.

B. Interior Lead-Related Demolition: The Contractor shall utilize the following procedures in addition to those proposed during the Test Sections and in the lead-related demolition work plan required by Article 1.08 when performing lead-related demolition on the interior of the building. Airborne lead concentrations outside the lead work control area but inside of the work area shall be kept below 10 $\mu g/m^3$. Airborne lead concentrations outside of the work area shall be kept below the background level measured prior to the commencement of construction activities. If the airborne lead concentration outside of the lead work control area exceeds 10 $\mu g/m^3$ or if the airborne lead concentration outside of the work area exceeds background levels, then work shall cease and new engineering controls and work procedures shall be utilized.

1. Interior lead-related demolition shall be performed in a manner that reduces the amount of airborne lead particulate generated.

2. While performing manual demolition, the material shall be kept wet to reduce airborne lead concentrations.

The material shall only be wetted to a point that dust control is maintained. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during manual demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and landfill.

3. If mechanical methods (power equipment) are used such as saws or grinders, this equipment should be used in a manner that reduces airborne lead concentrations. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to cutting or grinding. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The equipment shall be decontaminated prior to removing it from the lead work control area.

4. If machinery/open flame is used to perform lead-related demolition, the lead-containing materials shall be pre-wetted and shall be kept continually wet during demolition. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to using mechanical equipment or open flame. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical/open flame demolition shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The machinery shall be decontaminated prior to removing it from the lead control work area.

C. Exterior Lead-Related Demolition: The Contractor shall utilize the following procedures in addition to those proposed during the Test Sections and in the lead-related demolition work plan when performing lead-related demolition on the exterior of the building. Airborne lead concentrations outside the lead work control area but inside of the work area shall be kept below 10 $\mu g/m^3$. Airborne lead concentrations outside of the work area shall be kept below the background level measured prior to the commencement of construction activities. If the airborne lead concentration outside of the lead work control area exceeds 10 $\mu g/m^3$ or if the airborne lead concentration outside of the work area exceeds background levels, then work shall cease and new engineering controls and work procedures shall be utilized.

1. Exterior lead-related demolition shall be performed in a manner that reduces the amount of airborne lead particulate generated.

2. While performing manual demolition, the material shall be kept wet to reduce airborne lead concentrations. The material shall only be wetted to a point that dust control is maintained. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during manual demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and landfill.

3. If mechanical methods (power equipment) are used such as saws or grinders, this equipment should be used in a manner that reduces airborne lead concentrations. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to cutting or grinding. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The equipment shall be decontaminated prior to removing it from the lead work control area.

4. If machinery/open flame is used to perform lead-related demolition, the lead-containing materials shall be pre-wetted and shall be kept continually wet during demolition. The area to be cut or ground shall be free of all lead coatings, paints, primers etc. PRIOR to using mechanical equipment or open flame. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical/open flame demolition shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The machinery shall be decontaminated prior to removing it from the lead control work area.

3.7 Lead Work Area Clean Up Procedure

A. Maintain surfaces within the lead work control area free of accumulations of lead debris and dust. Restrict the spread of dust and debris. Keep waste from being distributed over the work area. Do not dry sweep or use

compressed air to clean up the area. When the lead removal operation has been completed, clean the area of visible lead contamination by vacuuming with a HEPA filtered vacuum cleaner and/or wet mopping the area.

B. Final Cleaning: After all lead-containing materials are removed; the Contractor shall clean any remaining items remaining inside of the building including wall support systems, roof support systems and the concrete slab to remove any "settled" lead dust/debris. The wall and deck support systems shall be wet wiped using towels, rags, and sponges. The concrete slab shall be HEPA vacuumed and then mopped with plain water. The following procedures shall be used:

1. Wash all surfaces in the work area with a solution containing 5 percent tri-sodium phosphate (TSP) or equivalent. Prepare solution using hot water. Workers shall use towels, sponges, and mops to clean all surfaces including all areas that had been covered with polyethylene sheeting. Cleaning shall start at the ceiling and work down to the floors. A new solution of TSP/TSP Substitute and water shall be mixed as the water becomes dark or dirty.

2. The floor will then be re-cleaned with plain water. If required by the Owner or the HPM, the floors could require 'neutralization' of any and all chemicals used. If this is to be performed, the neutralization will be carried out after the area has satisfied all clearance criteria.

3.8 Lead-Related Demolition Final Inspection

A. The Owner/HPM will perform a visual inspection of each lead work control area at the completion of each phase of lead-related demolition. The inspection will determine that all lead-containing dust and debris has been cleaned up and that all lead-containing materials have been removed, packaged, and placed into the proper waste containers. If the final visual inspection is not acceptable, the Contractor shall perform the cleanup procedures listed in Article 3.07 of this Section.

B. The Owner/HPM will perform an inspection of the soil surrounding the building. No visible paint chips or lead-containing debris shall be present in the soil. If paint chips or debris are identified in the soil, the Contractor shall remove these using manual methods and HEPA vacuums.

C. Final Inspection: Following completion of all phases of lead-related demolition, the Owner will perform a FINAL visual inspection of any items remaining in the work area including wall and deck support systems and the concrete slab.

1. All paint/lead containing waste is to be removed from work area by the end of each workday. Accumulated waste will not be allowed to remain in the area overnight. Plastic barriers, at entrances to the work areas, shall remain in place at all times until the area is scraped and cleared. Items requiring removal of lead-based paints intact shall be wrapped in one layer of polyethylene sheeting, sealed with duct tape and labeled properly prior to removal from the holding area.

2. Visual Clearance Criteria for Lead Only Abatement Areas: At the end of each workday the HPM and the Contractor's Supervisor shall inspect work performed that day. If the visual inspection reveals that lead-contaminated wastes and loose debris have been adequately removed from the area, the Contractor will be allowed to commence work on the next work area. If the HPM determines that unacceptable waste and residue remain, the Contractor shall vacuum and re-clean those areas that are unsatisfactory. The Contractor will not be allowed to start removal in the next work area until the existing/current work area has passed a visual inspection.

3. Wipe Sample Clearance, as deemed necessary by the HPM.

    a. When the work is completed, the HPM will visually inspect the zone for any loose dust or debris, followed by wipe sampling of settled dust to document surface lead levels below the specified clearance levels.

Samples will be collected using commercial wipes moistened with a non-alcohol wetting agent. A one-foot square area will be wiped twice in an "S" pattern, the second pass being at right angles to the first, folding the wipe inward and placing it in a labeled sample container. The wipe sample will be analyzed by flame atomic absorption using EPA method SW846. The Contractor shall re-clean the work zone if :
(i) the surface concentrations exceed the pre-existing (baseline) levels collected prior to the commencement of work or
(ii) the surface concentrations exceed the following levels,
whichever of (i) or (ii) listed above is lower:

40 µg/ft^2…...for floors.
250 µg/ ft^2…..for interior windowsills and stools.
400 µg/ft^2…...for window troughs.
400 µg/ ft^2…..for exterior concrete or other rough surfaces.
350 ppm ……for soil (or the pre-existing 'baseline' level, whichever is lower).

b. The cleaning and testing will cease only after all required paints are abated and all sample results are below these specified levels. Sample analysis times will be within 1 workday, unless otherwise indicated.

c. If the above levels are enumerated in paragraph 3 a above are exceeded, the final testing procedure shall then be repeated at Contractor's expense. This shall include, but not be limited to, the sampling and analysis costs for the samples during re-cleaning and the final clearance, HazMat Project Manager's costs and expenses, any and all contractual penalties, liquidated damages, etc., levied by the owner and/or other trades that may be impacted by the change in schedule.

4. Air Sampling Criteria (As Applicable): Aggressive air sampling will be conducted for lead simultaneous to the asbestos clearance air sampling. Air samples will be analyzed for total lead in accordance with Lead in Air by Flame AAS NIOSH method 7082. The clearance criterion for lead shall be an airborne concentration below OSHA's "Action Level" of 30 micrograms per cubic meter of lead (30 µg/m^3), on an 8 hour Time Weighted Average (TWA), for all samples.

3.9 Lead Waste Handling Procedures

A. All disposable personal protective equipment, respirator cartridges, and HEPA vacuum filters shall be packaged and disposed of upon completion of the work shift and when the lead removal operation has been completed.

B. All removed lead-containing materials, lead-contaminated clothing and equipment, and lead-containing dust/debris shall be packaged and placed into waste containers approved for use by both the waste transporter and landfill.

C. Properly label each lead waste container in accordance with the requirements of the waste hauler and the landfill. At a minimum, the labels shall identify the type of waste and the date lead-contaminated wastes were first put into the container.

D. The Contractor shall make provisions for the safe storage of waste on site for waste characterization and eventual disposal. For health and safety reasons, waste storage areas must be treated as lead work control areas with restricted access.

3.10 Lead Waste Disposal

A. The Contractor shall perform at their expense, any and all waste characterization and analysis of lead-containing waste or lead-contaminated waste generated during this project. The waste characterization sampling performed on the waste will be in accordance with Title 22.

B. Any and all waste including but not limited to waste generated from abatement projects, demolition debris and/or soil excavation, with total lead content greater than 350 parts per million and scheduled for disposal in California, must be disposed of at a Class I hazardous waste landfill, or at other landfills that have specific permits to accept these waste. Copies of all waste permits from the waste disposal facility shall be included as a part of the pre-job submittal.

C. For all waste generated from the site one or more of the following characterization tests must be performed:

Total Threshold Limit Concentration (TTLC) *(California State Requirement)*	(a) If greater than or equal to 1000 mg/kg the waste must be disposed as a Class I Hazardous Waste, (b) If less than 1000 mg/kg but greater than or equal to 50 mg/kg then perform the W.E.T.(STLC) test, (c) If less than 50 mg/kg can be disposed of as construction debris
Waste Extraction Test Soluble Threshold Limit Concentration (WET-STLC) *(California State Requirement)*	(a) If greater than or equal to 5mg/ℓ the waste must be disposed as a Class I Hazardous Waste after performing the TCLP Test (Federal) (b) If less than 5 mg/ℓ can be disposed of as construction debris.
Toxicity Characteristic Leachate Procedure (TCLP) *(Federally Regulated)*	(a) If greater than or equal to 5mg/ℓ the waste must stabilized prior to being disposed as a Class I Hazardous Waste (b) If less than 5mg/ℓ the waste stabilization is not required. However the material must be disposed as a Class I Hazardous Waste

3.11 OSHA Personnel Air Monitoring

A. Air monitoring required by OSHA for lead exposure is work of the contractor. The contractor is responsible for providing daily OSHA compliance monitoring as per 29 CFR Part 1926.62 and 8 CCR Part 1532.1.

1. At minimum, Contractor shall conduct representative (25% of crew) breathing zone personal air monitoring of its employees twice each shift and repeated daily.

2. Monitoring shall be conducted by a qualified professional experienced and knowledgeable about the methods of air monitoring and in accordance with 29 CFR Part 1926.62 and 8 CCR Part 1532.1.

3. Monitoring results and appropriate laboratory analysis work shall be submitted to Owner's Representative within twenty-four (24) hours of the monitoring work.

3.12 Alternate Procedures

A. The procedures described in this Section shall be utilized at all times.

B. If specified procedures cannot be utilized, a request shall be made in writing to the Owner providing details of the problem encountered and proposed alternatives.

C. Alternative procedures shall provide equivalent or greater protection than the procedures that they replace.

D. Alternative procedure shall be approved in writing by the Owner and HazMat Project Manager prior to implementation.

APPENDIX –A
SCOPE OF WORK

SHEET NOTES FOR THE ABATEMENT SCOPE OF WORK

The following notes will apply in their entirety, without exclusions or exemptions, to the entire Scope of Work for this Project unless otherwise instructed to in writing:

1. These Buildings are slated for renovation and/or reconfiguration. Coordinate work activities with HPM, Construction Manager and other trades as applicable. Prior to the commencement of abatement or removal activities, it is the Contractors responsibility to reconcile all the abatement/removal scope of work materials and locations listed herein with the intent of the Project Construction Manager and/or the Owners Representative.
2. Contractors shall bid all quantities listed herein. Any and all additions and/or deductions shall be based on the Abatement Unit Prices (Appendix – B) attached hereto.
3. The Contractor shall be responsible for independently verifying ALL quantities enumerated.
4. The Contractor shall be responsible for the abatement/removal of ALL LISTED MATERIALS - IN ALL LOCATIONS as indicated in these documents.
5. The Contractor shall be responsible for the quantification of all materials actually removed from ALL LOCATIONS.
6. Any and all items that are left in/on the Building(s) that may be affected by of this Scope of Work are to be protected in place unless otherwise directed (in writing) by the Owner or the Owners designee.
7. These Scopes of Work are created on the basis of the Architectural Drawings and/or the information received from the Owner/the Owners representative. It is restricted to those materials surfaces and quantities that are designated to be impacted during the modernization. This is not a complete inventory of all known or suspect hazardous materials in these areas, nor should it be construed to be a comprehensive hazardous materials report for these work areas.

Lead Abatement/ Removal Scope of Work Notes:

a) All items enumerated are to be removed in accordance with Section 02 83 00 of the attached Specifications and in full compliance with current Local, State and Federal regulations. In the event of a conflict between the regulations and the specifications, the most stringent shall apply.

b) Multiple Containment(s) could be required in the same locations in order to coordinate activities with other trades. The Lead Removal Contractor's Base Bid shall include two (2) additional mobilizations (in addition to the initial mobilization) and containment costs per building for Lead related work.

c) Special Removal and Disposal Instructions:

(i) In Areas for Removal
Remove all layers of Material/Component to framing/substrate, including any insulation materials and Dispose of as Lead Containing Waste; framing/substrate to be cleaned and remain intact.
NOTE 1: If Lead Coated Metal Components are to be "recycled" instead of being disposed of as Lead Containing Waste, the Contractor must – (I) appropriately stabilize component prior to transport; (II) provide the owner with documentation from the Metal Recycler, confirming acceptance of known Lead Coated materials; (III) transport these materials under proper manifest/trip ticket; and (IV) provide a copy of the trip ticket signed by the Recycler, proving appropriate disposal of the Scope of Work Item(s).
NOTE 2: If Lead Coated Components are to be salvaged and returned to "Owner", the coatings must be appropriately stabilized before released back to "Owner's" Representative.

(ii) In areas for Modification/Attachment
Remove all Layers of Paint and Dispose of as Lead Containing Waste. Finish (i.e. "feather") the leading edge of removed area and Stabilize ('Coat' Over) with an approved "Sealant" to enable Prep, Priming, and Repainting by Others. For anticipated welding, torching or other 'hot work' on metal, remove all layers of paint to bare metal at a minimum of 18 inches on each side (on all faces of the metal) of the anticipated

work. For anticipated mechanical impact remove all layers to bare substrate at a minimum of 6 inches each side (on all faces of the component) of the anticipated work.

(iii) In Areas for Repainting

Manually Abrade/Scrape all accessible surfaces in their entirety, being careful to remove all 'peeling-chipping' paint. Manually Wash/Scrub all 'build-up' (Chalking residue, Grime, etc.) from all accessible surfaces. Dispose of all Waste Products and Debris as Lead Containing Waste. Finish (i.e. "feather") the leading edge of removed area and Stabilize ('Coat' Over) with an approved "Sealant" to enable Prep, Priming, and Repainting by Others.

LEAD SCOPE OF WORK

December 15, 2016

OAK GROVE HIGH SCHOOL

SHADE STRUCTURE (Z-050-602)

All items enumerated below are to be removed and disposed of as Lead Containing Waste unless otherwise noted.

ITEM #	LOCATION / MATERIAL	APPROXIMATE QUANTITY*
1.	Roof Level of the Entire Shade Structure / Red-Brown Painted Metal Columns and Supports ***** See Special Removal and Disposal Instructions. *****	**≈ 200 SF**
2.	Roof Level of the Entire Shade Structure / Red-Brown Painted I-Beams ***** See Special Removal and Disposal Instructions. *****	**≈ 2,000 SF**
3.	Lower (Occupancy) Level of the Entire Shade Structure / Red-Brown Painted Metal Columns ***** See Special Removal and Disposal Instructions. *****	**≈ 400 SF**
4.	Entire Shade Structure / Red-Brown Painted Wood Fascia ***** See Special Removal and Disposal Instructions. *****	**≈ 250 SF**

NOTES

A. REFER TO APPENDIX -A SCOPE OF WORK SHEET NOTES FOR ALL RELEVANT DIRECTIONS/INSTRUCTIONS FOR THIS SCOPE OF WORK.

Key: SF = Square Feet; LF = Linear Feet; EA = Each

APPENDIX –B

ABATEMENT UNIT PRICES

HazMat Doc

UNIT PRICES

LEAD

Item	Task	Qty	Unit Price	$ Total (Qty x Unit Price)
1.	Mobilization	2 EA		
2.	Small Containment < 200 SF	2 EA		
3.	Remove ALL Layers of Paint on Metal and prepare substrate for 'hot' work	100 SF		
4.	Remove Peeling and Chipping Paint on Metal and stabilize substrate for re-painting	100 SF		
5.	Remove Peeling and Chipping Paint on Wood and stabilize substrate for re-painting	100 SF		
	Total Lead			

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