ARTICLE XII –LEAD CONTAINING PAINT CONTROL MEASURES

12.1 GENERAL - This Section specifies the requirements for protection of workers, prevention of contamination of adjacent areas, performing lead-abatement, post-abatement cleaning, pre-disposal testing of removed materials, and appropriate disposal of removed materials.

12.2 DESCRIPTION

A. The Contractor shall ensure all work is in compliance with all applicable Federal, State and local laws and regulations concerning lead, including all incidental and pertinent operations during the renovation of structures located at the facility.

B. Lead paint is suspected on the existing painted surfaces at the shed upper wall area. The pier shed facility was constructed during 1948 in which lead paint was the industry standard and widely used throughout the construction of this period. Lead paint testing was conducted on this structure however testing results are unavailable. Lead testing conducted on adjacent structures indicate the presence of lead containing paint.

C. The Contractor shall furnish all labor, materials, and equipment necessary to complete the safe removal, transportation, and disposal of lead-containing paint in specified steel members.

D. The work specified herein shall include the preparation of work areas and removal, transportation, and disposal procedures. All work shall be performed as required of lead-containing and lead-contaminated materials by persons trained, knowledgeable and qualified in the techniques of handling and disposing of lead-containing paint and lead-contaminated materials and in the subsequent cleaning of lead-contaminated areas. Workers shall be EPA certified lead workers and capable and willing to perform the work of this contract.

E. This Specification covers the requirements and procedures for limiting occupational and environmental exposure to lead during removal of existing LCP steel member at the facility.

F. In performing the removal and disposal of components with lead-containing paint, all possible safeguards, precautions, and protective measures should be utilized to prevent exposure of any individual to lead particulates.

G. Debris and waste resulting from removal work, except as otherwise specified, shall become the property of the Contractor. The Contractor shall be required to separate removal debris, steel components and miscellaneous metal elements and recycle them as scrap metal.

H. The Contractor shall conduct TCLP tests for lead of a representative sample of the debris waste stream of each structure and of any lead-contaminated chips or debris generated through abatement to determine whether the waste is hazardous or non-hazardous.

12.3 REFERENCES

A. The publications listed below form a part of this Specifications to the extent referenced. The publications are referred to in the text by the basic designation only, and include but are not limited to, the following:

B. CODE OF FEDERAL REGUALTIONS (CFR)

29 CFR 1926.21	Safety Training and Education
29 CFR 1926.33	Access to Employee Exposure and Medical Record
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
29 CFR 1926.59	Hazard Communication
29 CFR 1926.62	Lead Exposure in Construction
29 CFR 1926.65	Hazard Waste Operations and Emergency Response
29 CFR 1926.103	Respiratory Protection
40 CFR 260	Hazardous Waste Management Systems: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Generators of Hazardous Waste
40 CFR 263	Transporters of Hazardous Waste
40 CFR 264	Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities.
40 CFR 265	Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restriction
40 CFR 745	Lead Requirements for Lead-Based Paint Activities
40 CFR 172	Hazardous Materials, Tables, and Hazardous Materials Communications Regulations
40 CFR 178	Shipping Container Specifications

C. HAWAII OCCUPATIONAL SAFETY AND HEALTH DIVISION (HIOSH)

12-114.2	Personal Protective Equipment
12-121.2	Fall Protection
12-122.2	Materials Handling, Storage, Use and Disposal
12-148.1	Lead
12-151	Hazardous Waste Operations and Emergency Response
12-202.33.1	Lead

D. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI ZP.2	(1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
ANSI Z88.2	(1992) Respiratory Protection

E. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing

F. UNDERWRITERS LABORATORIES INC. (UL)

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

12.4 DEFINITIONS

A. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period.

B. Area Sampling: Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel (approximately 1.5 to 1.8 meters above the floor).

C. Authorized Visitor: The State's authorized representative, inspector, air-monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.

D. Competent Person: As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current Federal, State, and local regulations, has the authority to take prompt corrective actions to control the lead hazards and is and EPA or DOH certified lead inspector or risk assessor.

E. Contaminated Area: An area where unwanted toxic or harmful substance exists.

F. Contractor: For this project, the Contractor is that individual, or entity under Contract to the General Contractor to perform the herein listed work.

G. EPA: United States Environmental Protection Agency

H. High Efficiency Particulate Air (HEPA) Filter: HEPA filtered vacuuming equipment with a filter system capable of collecting and retaining lead-contaminated particulate. A high efficiency particulate filter demonstrates at least 99.97 percent efficiency against 0.0 micron or larger size particles.

I. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Excludes other forms of organic lead compounds.

J. Lead-Based Paint (PBP): Protective or decorative coating which contains at least 1.0 mg/cm2 of lead by area or at least 0.5% (5,000 mg/kg) of lead by weight.

K. Lead Containing Paint (LCP): Protective or decorative coating which contains any detectable quantity of lead; includes Lead-Based Paint.

L. Lead Control Area: A temporary area of structure or containment, sometimes equipped with HEPA filtered local exhaust that prevents the spread of lead dust or debris. Usually, critical barriers and physical boundaries are employed to isolate the lead control area and to prevent migration of lead contamination and unauthorized entry of personnel.

M. Monitoring Specialist: A person who performs air monitoring and inspection during abatement work under the direction of the Owner's authorized representative.

N. OSHA: United States Department of Labor, Occupational Safety and Health

Administration.

O. Permissible Exposure Limit (PEL): 50 micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more or less than 8 hours in a workday, the PEL shall be determined by the following formula:

PEL (micrograms per cubic meter of air) = 400/# hours worked per day

P. Personal Sampling: Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of an employee.

Q. Physical Boundary: Area physically roped or partitioned off around lead control area to limit unauthorized entry of personnel.

R. Qualified Testing Laboratory

1. Environmental and Work Area Monitoring Laboratory-The testing Laboratory employed by Owner's authorized representative to perform analysis of environmental and work area air monitoring samples and report concentrations of airborne lead.

   The laboratory shall be accredited under the EPA's National Lead Laboratory Accreditation Program (NLLAP) by the American Industrial Hygiene Association's (AIHA's) Environmental Lead Laboratory Accreditation Program (ELLAP) and successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program for each lead matrix analyzed by the laboratory. The laboratory shall fulfill all requirements of accreditation for analyzing lead in air. Laboratory personnel performing the work shall have been judged proficient in the analysis of lead in the applicable parameter by successful participation within the last year in HIHA's ELPAT.

2. Personal Air Monitoring Laboratory- The testing laboratory utilized by the air monitoring firm retained by the Contractor to perform analysis of personal air monitoring samples and report airborne concentrations of lead. Collection of the Contractor's OSHA personal air samples will be performed by a firm independent of the Contractor, at the Contractor's expense.

   The laboratory shall be accredited under the EPA's National Lead Laboratory Accreditation Program (NLLAP) by the American Industrial Hygiene Association's (AIHA's) Environmental Lead Laboratory Accreditation Program (ELLAP) and successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program for each lead matrix analyzed by the laboratory. The laboratory shall fulfill all requirements of accreditation for analyzing lead in air, Laboratory personnel performing the work shall have been judged proficient in the analysis of lead in air by successful participation within the last year in AIHA's ELPAT.

3. Toxicity Characteristic Leaching Procedure (TCLP) Testing Laboratory- The testing laboratory employed by the Contractor to perform TCLP tests of a representative sample of the debris waste stream of each structure and of any lead-contaminated chips or debris generated through abatement to determine whether or not the waste is hazardous or non-hazardous. The laboratory shall be experienced in and analyze TCLP samples using the EPA Method 1311/6010.

S. State: The State of Hawaii ("Owner")

12.5 QUALITY ASSURANCE

A. State's authorized representative's responsibilities:

1. Review and approve Contractor personnel training.

2. Review and approve Contractor's Work Procedure Plan for conformance to the applicable reference standards.

3. Inspect work for conformance to the Contractor's approved Work Procedure Plan.

4. Schedule and conduct required air monitoring, inspection, and reporting.

5. Monitor work to verify that work is performed at all times in accordance with the requirements of this Specification.

6. Monitor work to verify that adequate control is being maintained at all times of hazardous exposure to employees and to the environment.

7. Perform area air monitoring during lead abatement activities.

8. Be onsite during worksite preparation and cleaning, be available by telephone, pager or answering service at all other times during the work and able to be present at the work site in no more than 2 hours.

9. After final cleanup, verify that the lead control area is free of any visible lead paint chip debris, waste or dust and that final area air clearance samples have.

B. Safety and Health Compliance

1. In addition to the detailed requirements of this Specification, the Contractor shall comply with laws, ordinances, rules, and regulations of Federal, State and local authorities regarding removing, handling, storing, transporting, and disposing of lead materials.

2. Comply with the applicable requirements of the current issue of 29 CFR 1926.62, HIOSH 12-148.1, and HIOSH 12-202-33.

3. Where requirements of this Specification and the referenced documents vary, the most stringent requirement shall apply.

C. Pre-Construction Conference

1. The State's authorized representative shall meet with the Contractor to discuss in detail the work procedures, precautions and area and personal air monitoring to be employed. If rental equipment is to be used during lead- containing paint handling and disposal, notify the rental agency in writing concerning the intended use of the equipment. Submit a copy of the written notification to the State's authorized representative.

12.6 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor acknowledges that it alone is responsible for the instruction of personnel in and enforcement of personal protection requirements. The Contractor shall comply with all requirements of 29 CFR 1926.62 and HIOSH 12-148.1. The Contractor shall also be responsible for complying with all applicable EPA regulations in regard to lead-containing materials

1. Respirators: Use appropriate respirators and filters which meet all Requirements of OSHA 29 CFR 1926.62 and HIOSH 12-148.1.

2. Protective Clothing: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by OSHA 29 CFR 1926.62 and HIOSH 12-148.1.

12.7 REQUIREMENTS

A. Notification: The Contractor shall notify the State's authorized representative 15 days prior to the start of any abatement, renovation or demolition work involving LCP painted materials. When required, notify the Department of Health a minimum of 10 working days prior to disturbance of any lead-containing paint.

B. Certification: The Contractor shall use only EPA certified Lead Workers or Supervisors to perform all work that involves lead-containing or lead-contaminated materials.

C. Training: The Contractor shall be solely responsible for complying with all OSHA29 CFR 1926.62 and HIOSH 12-148.1 requirements to train each employee. Training shall include, but not be limited to, the hazards of lead, safety and health precautions, and the use and requirements for protective clothing, equipment, and respirators.

D. Medical Examinations: Before exposure to lead-contaminated dust, the Contractor shall provide its employees with a comprehensive medical examination as required by 29 CFR 1926.62 and HIOSH 12-202-33. The examinations will not be required if records show that Contractor's employees have been examined as required by 29 CFR 1926.62 within the last year.

E. Respiratory Protection Program: The Contractor shall establish and implement a Respiratory Protection Program as required by ANSI A88.2, 29 CFR 1910.134, 29 CFR 1926.62, and HIOSH 12-148.1.

F. Hazard Communication Program: The Contractor shall establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

G. Safety Program: Contractor shall establish and implement a Health and Safety Plan which meets the specifications of 29 CFR 1926 Subparts C. and D. Applicable Standards and Guidelines: All work under this contract, and any other trade work conducted with the project, shall be done in strict accordance with all applicable Federal, State, and local regulations, standards, documents, and codes governing the preparation, removal, renovation, treatment, transportation and disposal of lead-containing and lead-contaminated materials. The most recent edition of any relevant regulation, standard, document, or code shall be applicable.

H. The Contractor shall examine and have at all times at its office (one copy) and in View at each job site (one copy) the following materials:

1. State of Hawaii Department of Labor and Industrial Relations, Occupational Safety and Health Standards, Part 8, Section 12-148.1;

2. Department of Housing and Housing and Urban Development, Office of Public and Indian Housing; Lead Paint Guidelines;

3. Title 29 Code of Federal Regulations Part 1926.62; Safety and Health Standards;

4. Title 29 Code of Federal Regulations Part 1910.134; Respiratory Protection

5. Title 40 Code of Federal Regulations Part 261: Identification and Listing of Hazardous Waste;

6. Title 40 Code of Federal Regulations Part 262; Standards Applicable to Generators of Hazardous Waste;

7. Title 40 Code of Federal Regulations Part 263: Hazardous Waste Transporters;
8. Title 40 Code of Federal Regulations Part 745; Lead; Requirement for Lead-

9. Copies of any other applicable Federal, State and local regulations, standards, Documents and codes.

10. Copies of the procedures to be followed during medical emergencies, including phone numbers of the nearest hospital or other emergency medical facility, which shall be posted by the telephone.

11. Copies of the Contractor's Respiratory Protection Program, Hazardous Communication Program, Safety Program, and Work Procedure Plan;

12. Copies of Material Safety Data Sheets for all chemicals used;

13. Copies of the Contractor's Competent Person's qualifications and employee EPA Lead Worker/Supervisor Certificates; and

14. Copies of Personal Air Monitoring results.

12.8 CONTRACTOR USE OF PREMISES

A. General: The Contractor shall cooperate fully with the State during project Execution to minimize conflict.

B. Pollution Control: The Contractor shall not contaminate the air, water, soil, or other items with hazardous materials such as cleaning solutions, lead-containing paint or lead-contaminated debris and wastes, etc. The Contractor shall immediately clean the contaminated area and dispose of the waste in compliance with all Federal, State, and local laws, ordinances, rules and regulations at its own expense.

C. Use of Site:

1. Confine operations at the site to the areas permitted under the contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting work while at the project site.

2. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to the areas authorized by the Owner's authorized representative

12.9 COMMENCEMENT OF WORK

A. Each time work that calls for the disturbance of lead-containing paint is to begin in a new work area, the Contractor shall not commence work unless the following requirements have been met.

1. Submittals: All submittals, notifications, posting and permits must be provided and be satisfactory to the Construction Engineer.

2. Equipment: All equipment required for the work such as removal, clean up and disposal must be on hand.

12.10 SUBMITTALS

A. Manufacturer's Catalog Data: Submit copies of manufacture's specifications, installation instructions and field test materials for all chemicals and equipment related to lead-containing and lead-contaminated materials, including any other data that may be required to demonstrate compliance with these Specifications and proposed uses. This includes, but is not limited to, data for vacuum filters and respirators.

B. Material Safety Data Sheets: Submit copies of the Material Safety Data Sheets for all chemicals used.

C. Notifications: When required, provide the Hawaii State Department of Health written notice of any on-site project activity involving the disturbance of lead-containing paint as early as possible but at least 10 working days prior to commencement or work. Submit a copy of the written notification to the State's authorized representative.

D. Respiratory Protection Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Respiratory Protection Program prepared in accordance with all applicable laws. The Contractor shall also submit fit test records on all employees to be used on this project who may be required to wear a respirator. Hazard Communication Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Hazard Communication Program prepared in accordance with all applicable laws.

E. Safety Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Health and Safety Plan prepared in accordance with all applicable laws.

F. Work Procedure Plan: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Work Procedure Plan. The following are required components of a Work Procedure Plan:

1. A sketch showing the location, size, and details of lead control areas, signage, security, decontamination, and support areas including eating, drinking, smoking and restroom areas;

2. Procedures, interface of trades, sequencing of lead-related work, respirators, protective equipment.

3. A detailed description of the methods of control of the work to ensure that airborne lead concentrations of 30 micrograms per cubic meter of air are not exceeded.

4. Work plan and schedule for waste containment and disposal including daily cleanup and disposal of stray paint chips and paint dust.

5. List of waste handling equipment to be used in performing the work, to include cleaning volume reduction, and transport equipment.

6. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

7. Estimated quantities of wastes to be generated and disposed of as well as a description of the methods used to identify hazardous wastes encountered with the work.

8. Spill prevention, containment, and cleanup contingency measure to be implemented.

9. Description of procedures to stop work in the event that area monitoring, and laboratory analysis indicate air concentrations of lead in excess of the action level, and

10. Methods to eliminate runoff of the water used to minimize dust created by renovation work, and collection and disposal plan for wastewater and paint debris.

G. Rental Equipment: When rental equipment is to be used during lead-containing paint handling and disposal, a written notification concerning intended use of the rental equipment must be provided to the rental agency with a copy submitted to the State's authorized representative.

H. HEPA Vacuums: Submit no later than 10 consecutive working days from notice of award, manufacturer's certification that vacuums conform to ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems as applicable to this project.

I. Contractor's Competent Person's Qualifications: The Contractor shall submit no later than 10 consecutive working days from notice of award, the Contractor's Competent Person's name, contact information, valid qualifications, and current certification of completion of the EPA Lead Inspector/Assessor course.

J. Certification of medical examinations: Contractor shall submit documentation from a physician that all employees or agents who may be exposed to airborne lead-containing dust of fumes have been medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, the Contractor shall document that its personnel have received medical monitoring as required in the HIOSH lead standard (12-148.1).

K. Employee EPA Lead Worker/Supervisor Certifications: Submit no later than 10 consecutive working days from notice of award, documentation that each and every individual, including foreman, supervisors, other company personnel or agents, and any other individual who may be exposed to airborne lead dust and who may be responsible for any aspects of lead-containing paint removal activities which may occur, has currently attended and passed the EPA Lead Worker and/or EPA Lead Supervisor course, whichever is relevant to that worker's responsibilities. These courses shall be EPA-approved or approved by a State Accreditation Program in the most current listing of the Federal Register. No worker shall be allowed in the lead control area if they are found to have an expired accreditation certificate. The Contractor shall be responsible for keeping the documentation up to date and submitting subsequent documentation to the State's authorized representative before any additional employee or individual, not currently on the list, is allowed within the lead control area.

L. Employee training certifications: Submit documentation within 10 consecutive calendar days of award, satisfactory to the State's authorized representative, that the Contractor's employees, including foreman, supervisors 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-containing paint removal activities, have received training in accordance with OSHA 29 CFR 1926.62 and the HIOSH lead standard (12-148.1). Training shall include, but not limited to, the dangers of lead exposure, respirator use and decontamination procedures.

M. Laboratory Qualifications

1. Personal Air Monitoring Laboratory- Submit name, address, and telephone numbers of testing laboratory responsible for analysis of personal air monitoring samples and reporting concentrations of airborne lead.

   The laboratory shall be accredited under the EPA's National Lead Laboratory Accreditation Program (NLLALP) by the American Industrial

Hygiene Association's (AIHA's) Environmental Lead Laboratory Accreditation Program (ELLAP) and successfully participating in the

Environmental Lead Proficiency Analytical Testing (ELPAT) program for each lead matrix analyzed by the laboratory. The laboratory shall fulfill all requirements of accreditation for analyzing lead in air. Laboratory personnel performing the work shall have been judged proficient in the analysis of lead in air by successful participation within the last year in AIHA's ELPAT.

2. TCLP Testing Laboratory - Submit name, address, and telephone number of testing laboratory responsible for TCLP analysis.

   The laboratory shall be experienced in and analyze TCLP samples using the EPA Method 1311/6010.

N. Personal Air Monitoring Results: Submit test results to the State's authorized Representative and the affected Contractor's employees within three (3) working days of collection, signed by the testing laboratory employee performing the analysis and the Contractor's Competent Person. Test results for the first two full days of initial personal air monitoring shall be submitted to the State's authorized representative within 48 hours after completion of sampling.

O. TCLP Results: Submit test results to the State's authorized representative within three (3) working days of collection, signed by the testing laboratory employee performing the analysis and the Contractor's Competent Person.

P. Log Lead Disturbance Work: Complete and submit a daily log of all lead disturbance work performed.

12.11 EQUIPMENT AND MATERIALS

A. Respirator: Select respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services. Respirators shall comply with the requirements of29 CFR 1926.62 and HIOSH 12-148.1. For this project, respirators shall be worn at all times throughout the renovation or as deemed necessary by the Contractor's Competent Person.

B. Protective Clothing: Furnish personnel exposed to lead dust with appropriate personal protective equipment as required by 29 CFR 1926.62 and HIOSH 12-148.1. For this project, respirators shall be worn at all times throughout the renovation or as deemed necessary by the Contractor's Competent Person.

C. Chemicals: Submit applicable Material Safety Data Sheet for all chemicals used on this project. use the least toxic product approved by the State's authorized representative.

12.12 POTENTIAL LEAD HAZARDS

A. The disturbance or dislocation of lead-containing materials may cause lead-containing dust to be released into the atmosphere, thereby creating a potential health hazard to the workers and the general public. Apprise all workers, supervisory personnel, subcontractors, consultants, and authorized visitors who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise, function in the immediate vicinity of any identified lead-containing materials, take appropriate continuous measures as necessary to protect all workers and the general public from the potential hazard of exposure to respirable airborne lead dust. Such measures shall include the procedures and methods described in the regulations of applicable Federal, State, and local agencies.

12.13 LEAD-CONTAINING MATERIAL

A. Spot remove lead-containing paint only as necessary for the safe renovation of LCP painted structures. Use wet methods or HEPA vacuum attached mechanical equipment to remove lead-containing paint.

B. LCP painted structure exist at the site as shown on the project drawing.

12.14 LEAD CONTROL AREA REQUIREMENTS

A. Boundary Requirement

1. Establish a lead control area to contain renovation operations by demarcating a boundary around the structure to be demolished or renovated in accordance with the Contractor's approved Work Procedure Plan. The lead control area shall be isolated by physical boundaries, such as temporary fencing, boundary tape and rope, to prevent unauthorized entry of personnel. If the work practice relating to lead-containing paint will create airborne dust, create a full containment with critical barriers, HEPA filtered exhaust, negative pressure enclosure and decontamination facilities.

2. Post Warning and Danger signs in accordance with CFR 1926.62 and HIOSH 12-148.1. Signs shall be placed at all approaches to lead control area and at the boundary of the lead control area. Signs shall be posted at all locations where airborne lead concentrations may exceed ambient background levels. Locale signs at such a distance that personnel may read the sign and take necessary measures to avoid exposure. In addition, post signs with "Authorized Entry Only, Lead Control Area" and "PPE Required" at every entry point.

B. Personal Protection Requirement

1. No one will be permitted in the lead control area unless they have been given appropriate training, Personal Protective Equipment (PPE) and medical examinations. PPE is required for all employees and persons within the lead control area.

2. Eating, drinking, smoking and application of cosmetics shall be permitted only in areas designated by the Contractor, approved by the Owner's authorized representative, and which are free of dust generated by the renovation. Eating, drinking, smoking and application of cosmetics are not permitted in the lead control area.

3. Where eyes may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes shall be provided within the work area.

C. Environmental Protection Requirements

1. Ensure airborne lead levels outside the lead control area are below the Action Level.

2. Perform work without damage to our contamination of the areas adjacent to locations where lead-containing or lead-contaminated material will be disturbed as a result of renovation activities. If any part of the work area is damaged or contaminated during the disturbance of lead paint, restore the damaged or contaminated area to its original condition or better, as determined by the State's authorized representative.

3. Drainage inlets, downspouts, and all entrances to underground utilities which lie within, or provide drainage for, a lead control area shall be sealed until that lead control area has been cleaned, visually inspected and cleared.

D. Exist Procedures

1. Whenever personnel exist the lead control area, they shall perform the following procedures and shall not leave the workplace wearing any clothing or other equipment worn in the lead control area. Personnel shall;

a. Vacuum themselves off with HEPA-filtered equipment, using UL-586 labeled HEPA filters,

b. Remove protective clothing in the designated changing area within the lead control area and place them in an approved impermeable disposal bag,

c. Wash their hands and faces in the designated changing area before

exiting to the designated clean area outside of lead control area; and

d. Prevent migration of mud, dust and/or debris carried on work boots, clothing, or equipment from the renovation site into areas beyond the lead control area.

12.15 RENOVATION INVOLVING LEAD-CONTAINING PAINT

A. Perform lead work as specified herein. Use procedures and equipment required to limit occupational exposure and environmental contamination with lead when renovation is performed in accordance with 29 CFR 1926.62 and as specified herein.

B. Disturbance of lead-containing paint as a result of renovation activities shall be kept to minimum. Water spray, vacuuming and other engineering controls shall be used to minimize airborne lead dust. Care shall be taken to avoid pulverizing, scraping, or crumbling lead painted debris.

C. Dispose of all lead-containing paint and associated waste in compliance with all Federal, State, and local requirements.

D. Clean as needed, all floor surfaces adjacent to the lead control area using a HEPA filtered vacuum.

E. Use 6-mil polyethylene sheeting to cover ground underneath the work area.

F. Use 6-mil polyethylene sheeting to cover any surfaces and equipment that will not be painted, disturbed, or utilized during disturbance of lead-containing paint. After completion of work, the Contractor shall repair all damage from fastening and sealing and remove all adhesive residue from surfaces at no additional cost to the State.

G. Manual or power sanding, grinding, abrasive or sand blasting of interior and exterior painted surfaces is not permitted. Select paint removal processes (describe in the Work Procedure Plan) to minimize contamination of work areas with lead-contaminated dust or other lead-contaminated debris/waste.

H. Open flame burning or torching of lead-containing paint is prohibited.

I. The use of hat guns or hot knives which reach temperatures above 650 degrees Fahrenheit, on surfaces containing lead-containing paint, is prohibited.

J. Use of vacuum equipment with HEPA filters in areas containing lead-containing paint is prohibited.

K. The use of chemical paint strippers containing methylene chloride is prohibited.

L. Control of Airborne Lead Level - The Contractor shall control the lead level outside of the work boundary to less than the action level at all times.

M. Control of Visible Emissions - The Contractor shall control lead dust emissions from the project site so that no visible lead dust emissions leave the project work areas during renovation work. Wet methods or other engineering controls shall be sued to control the emission of dust and/or debris from the renovation site in accordance with all applicable Federal, State and local regulations. Emissions in excess of the above shall be cause for immediate shut down of the project until corrective measures are implemented.

N. Control of Water Runoff - Water used to control emissions of dust from the renovation activities shall not be allowed to flow uncontrolled from a lead control area to any adjacent area or to enter the sanitary or storm water sewer system. All water runoff from lead control areas shall pass through a filter berm to remove particulate matter prior to discharge to water sewer system. The Contractor shall use only sufficient water to adequately control dust. Under no conditions shall wastewater be disposed of in storm drains or dumped on the ground.

O. Perform renovation involving lead containing paint as indicated in Federal, State, and local regulations. The worksite preparation (barriers or containments) shall be job dependent.

12.16 WORK PROCEDURE

A. Perform renovation work in accordance with approved Work Procedure Plan. Use procedures and equipment required to limit occupational exposure and environmental contamination with lead when renovation work is performed in accordance with 29 CFR 1926.62 and as specified herein. Dispose of all material containing lead and associated waste in compliance with Federal, State and local requirements.

12.17 SITE MONITORING AND RESULTS

A. Personal air monitoring shall be performed by a Competent Person employed by the Contractor.

1. The Contractor's Competent Person shall perform initial personal air monitoring to determine employee exposure during renovation work. During initial personal monitoring, the first two full days of work (two 8-hour shifts), all workers shall be provided with a minimum of air-purifying half-mask respirators and disposable protective clothing.

2. Personal monitoring samples shall be taken on at least 25% of the employees or a minimum of 2 employees, whichever is greater, or a

representative sample of employees with the greatest potential for exposure as determined by the State's authorized representative during each work shift.

3. At the end of the period of initial determination all results shall be submitted to a laboratory for analysis by NIOSH Method 7082.

4. Results from the first two full days (two 8-hour work shifts) of initial air monitoring, signed by the testing lab employee performing the analysis and the Competent Person, shall be provided to the State's authorized representative within 48 hours after completion of sampling. Results of initial air monitoring shall be used by the Contractor's Competent Person to determine appropriate worker protection requirements for similar work activities. Determination shall be submitted to State's authorized representative within 48 hours.

5. Regardless of initial air monitoring results, continue personal air monitoring during the entire renovation operations.

6. If the personal air monitoring tests covering a period of two full workdays (two 8-hour work shifts) show airborne lead concentrations below the action level, the Contractor's Competent Person may determine that the use of HEPA-filtered air purifying respirators is not required. Other elements of protective clothing shall continue to be worn throughout the renovation operation.

7. If exposure to lead at or in excess of 30 micrograms per cubic meter of air as an 8-hour time weighted average is indicated, the Contractor's Competent Person will immediately notify the Contractor and State's authorized representative. The Contractor will provide and required all persons exposed to this concentration of airborne lead dust to wear, at a minimum, half mask air purifying respirators with HEPA filters. In addition, the Contractor's work procedures will be immediately reviewed by the State's authorized representative and the Contractor and modifications in the Contractor's work performance shall be implemented to lower the concentration of airborne lead.

8. Results of air monitoring shall be submitted to the State's authorized representative within three (3) working days of collection, signed by the testing lab employee who performed the analysis and the Competent Person.

B. Environmental and work area air monitoring of airborne lead concentrations shall be performed by the Contractor in accordance with 29 CFR 1926.62 and as specified herein.

1. The Contractor shall collect area air samples outside the work area prior to the start of work in order to establish the background level of lead in the air. The samples shall be analyzed by the Environmental and Work Areal Monitoring Laboratory for the airborne concentration of lead. This concentration shall be the background level.

2. The Contractor shall perform area air monitoring during the entire renovation operation.

3. Sufficient area air monitoring shall be conducted at the border of the lead control area to ensure unprotected personnel are not exposed to lead concentrations above 30 micrograms per cubic meter of air at all times. As a minimum, conduct area monitoring daily during each shift in which renovation operations are performed in areas immediately adjacent to the lead control area. At least one sample on each shift shall be taken on the downwind side of the lead control area.

4. If the outside boundary of the lead control area is determined to have air lead levels above the background levels, the Contractor shall be required to adequately correct the conditions causing the increased lead levels. Any work necessary to correct the condition will be completed by the Contractor at no additional cost to the State.

5. If the outside boundary of the lead control area is determined to have air lead levels at or above 30 micrograms per cubic meter of air, the Contractor shall immediately stop work and correct the conditions causing the increased level.

6. Renovated work shall resume only when approval is given by the State's authorized representative.

12.18 CLEAN-UP

A. Clean surfaces and surrounding ground within the lead control area daily. Do not allow paint chips, dust, and debris to accumulate.

B. Restrict and minimize the spread of dust and debris. Keep waste from being distributed over the general area. Do not dry sweep or use compressed air to clean the area.

C. When the operation has been completed, the area will be cleaned of all visible lead paint contamination. The State's authorized representative will visually inspect the affected areas for residual lead paint chips and the Contractor shall re-clean areas showing residual paint chips and debris.

D. If re-cleaning is required, the State's authorized representative will visually inspect for lead debris after the re-cleaning. This process will be repeated until the State's authorized representative deems the area free of visible paint chips and debris.

E. Do not remove the lead control area barriers or roped-off perimeter and warning signs prior to the State's receipt of the Contractor's lead clearance certification.

12.19 WASTE-CHARACTERIZATION

A. TCLP testing of the gross solid renovation debris shall be performed by the Contractor to characterize the debris as either non-hazardous or hazardous waste. Metal items to be demolished and removed shall be recycled.

B. The Contractor shall not concentrate, treat, or intermix wastes from outside this project with the debris and wastes generated by this project.

C. For lead-containing paint wastes generated by renovation operations, including used disposal PPE, lead paint chips and waste from paint stripping operations, TCLP testing of the waste shall be provided and paid for by the Contractor as specified herein.

D. All TCLP test samples shall be collected by the Contractor in accordance with SW 846, "Test methods for Evaluating Solid Waste - Physical/Chemical Methods."

E. All TCLP test samples shall be analyzed for lead concentration using EPA Method 1311/6010 by the TCLP Testing Laboratory.

F. Submit results of TCLP test to the State's authorized representative within 3 working days of collection, signed by the testing lab employee performing the analysis and the Contractor's Competent Person.

12.20 DISPOSAL

A. Disposal of Non-Hazardous Painted Construction Debris (TCLP for Lead Not Exceeding EPA Limit of 5.0 Milligrams per Liter).

1. Remove non-hazardous lead waste including debris, scraps, waste materials, rubbish, and trash from the site and dispose of such waste at a landfill approved for such purposes.

2. The Contractor shall submit to the State's authorized representative documentation that the lead-containing waste materials removed from the work area has been accepted by the landfill owner.

B. Disposal of Hazardous Painted Construction Debris (TCLP for Lead Exceeding

EPA Limit of 5.0 Milligrams per Liter).

1. Collect lead-contaminated wastes, scraps, debris and any other lead-contaminated materials and place into U.S. Department of Transportation approved and appropriately labeled containers.

2. Store lead wastes and debris in U.S. Department of Transportation approved containers in an interim area assigned by the State's authorized representative at the site. All hazardous wastes shall be removed from the site to an EPA approved disposal facility within 90 days of the removal work (as applicable).

3. Handle, store, transport, and dispose of lead or lead-contaminated waste in accordance with 40 CFR 261, 40 CFR 262, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

4. The Contractor shall submit to the State's authorized representative documentation that the lead-containing waste material removed from the work area has been accepted by the landfill owner.

12.21 CERTIFICATION

A. The Contractor or its authorized representative shall certify in writing that the regions both inside and outside of the lead control area have airborne lead concentrations below the background level, that the respiratory protection for the employees was adequate, and that the work procedures were performed in accordance with 29 CFR 1926.62 and this Specification.

B. Upon inspection and approval of the area by the State's authorized representative, the Contractor shall certify that there were no visible accumulations of lead-contaminated paint, dust and debris remaining on the work site.

C. The Contractor shall not remove the lead control area boundary and warning signs prior to the submittal and approval by the State's authorized representative of the Contractor's certification that there were no visible accumulations of lead contaminated paint, dust and debris remaining on the work site.

D. The Contractor shall re-clean areas showing residual paint chips, debris, or wastes. Chips, debris, and wastes shall be disposed of properly, in accordance with this Specification and all applicable Federal, State, and local regulations

12.22 PAYMENT - Payment for lead-containing paint control measures shall be made as described in Article X of these Specifications. The final payment will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead contaminated material delivered is submitted to the State's authorized representative.