ASBESTOS AND LEAD
ABATEMENT SPECIFICATION

FOR THE PROPERTY LOCATED AT:

GOLDEN APARTMENTS
2312-2336 NORTH GOLDEN AVE
SAN BERNARDINO, CALIFORNIA

Prepared For:

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3 GENERAL REQUIREMENTS – PART 2

3.1 SUMMARY OF WORK – ASBESTOS ABATEMENT SECTION I

3.1.1 DESCRIPTION

Work included - Base Bid: Contractor shall furnish all labor, materials, services, permits, insurance (specifically covering the handling and transportation of Asbestos-Containing Material, Asbestos- Containing Construction Material and Asbestos-Containing Waste Material and Lead Containing Building Components), and equipment which is specified, shown, or reasonably implied for the following Asbestos and Lead Abatement activities:

NOTE: IT IS THE RESPONSIBILITY OF THE ABATEMENT CONTRACTOR TO VERIFY ALL QUANTITIES AND CONDITIONS IN THE FIELD PRIOR TO BIDDING.

3.1.1.1 The removal and disposal, of the following friable or non-friable asbestos containing building materials with no replacement of removed material(s):

3.1.1.1.1 All Vinyl Flooring and Mastic Throughout Kitchens, Dining Rooms, Restrooms (See Survey Report)
All various roof products (flashing and penetration mastic materials.) (See Survey Report.)
All Transite Pipe (See survey report)

3.1.1.2 Submit unit pricing for the removal and disposal for the above asbestos containing building materials.

3.1.1.3 The removal and disposal, of the following lead containing building components with no replacement of removed material(s):

3.1.1.3.1 All interior ceramic tile in restrooms and Kitchen(See survey report)

3.1.2 WORK NOT INCLUDED IN THE CONTRACT DOCUMENTS

3.1.2.1 Area air monitoring for Owner, a.k.a. HACSB, by Observing Service.

3.1.3 EXISTING CONDITIONS

3.1.3.1 Existing conditions are reflected correctly to the best of Owner's knowledge. Should minor conditions be encountered which are not exactly as indicated, modification to new work shall be made as required at no additional expense to Owner.

3.1.3.2 Observation Service and Owner make no representation, warranty, or guarantee that the conditions indicated by the test reports either are representative of those conditions existing throughout the area, or that unforeseen developments may not occur, or that materials other than, or in proportions different from those indicated may not exist.

3.1.3.3 Contractor is advised that the locations of all asbestos-containing materials may not be clearly known and that he shall proceed with caution in all phases of the Work. Additional asbestos-containing material may be uncovered during the course of the Work and Contractor may be directed by Owner to include this material in the Work at an agreed upon price.

3.1.4 PHASING

3.1.4.1 Will be at the direction of the HACSB or their Designated Representative.

3.1.5 STORAGE

3.1.5.1 Hazardous waste and equipment shall be stored at all times in a covered, secured and labeled containers located at a place onsite identified by the HACSB.

3.1.6 BUILDING OCCUPANCY AND ACCESS RESTRICTIONS

3.1.6.1 HACSB may occupy other portions of the facility and shall conduct normal business operations during the abatement operations. Coordinate work with Owner and conduct activities so as

to minimize disruption to the building occupants.

3.1.6.2 No abatement work will be performed in occupied buildings unless directed by HACSB.

3.1.7 WORKING DAYS AND HOURS

3.1.7.1 All work hours shall be approved by HACSB prior to project starting. (Monday through Friday 0700 Hrs. to 1800 Hrs.)

3.1.7.2 Asbestos abatement work will be performed as pre-approved by HACSB.

3.1.7.3 Asbestos-free work will be allowed during normal facility hours when approved by the Owner. Asbestos-free related work is work that will not disturb the asbestos material or debris in the Work Area.

3.1.7.4 If Contractor elects to perform removal operations in excess of the aforementioned work hours and days and HACSB approves, Contractor shall pay for monitoring performed by Observation Service and his Consultant, associated with the additional hours, including testing, laboratory analysis and project related expenses.

3.1.7.5 Obtain approval from Owner prior to altering work schedule.

3.1.8 PARKING

3.1.8.1 Park in areas designated by Owner.

3.1.9 BUILDING SECURITY

3.1.9.1 Maintain personnel on the site at all times when any portion of the work area(s), is open or not properly secured including at hazardous waste transport vehicle. Secure work areas completely at the end of each working day.

3.1.10 SEGREGATION OF WORK AREAS

3.1.10.1 Segregate all work areas from the surrounding occupied or unoccupied areas.

3.1.11 PRE-JOB DAMAGE SURVEY OF FACILITY

3.1.11.1 Perform a thorough survey of property and all affected areas of the building with Observation Service and Owner prior to starting the Work in order to document existing damage. Items identified on this list will not be the responsibility of the Contractor unless further damaged by Contractor during execution of Project.

3.1.12 OBSERVATIONS

3.1.12.1 Observation Service will observe the status and progress of the Work for completeness and general compliance with the requirements of the Contract Documents.

3.1.13 SIGN-IN/OUT LOG

3.1.13.1 All Contractor personnel and Project Site visitors shall Sign-In/Out with the Observation Service on a daily basis for the duration of the project.

3.1.14 UTILITIES

3.1.14.1 Contractor may temporarily connect to existing permanent utilities during execution of the Work. All temporary utility connections will be made by fully licensed electrical and plumbing personnel and coordinated with the Owner. Remove connections and all extensions of utilities at Project completion. The cost of water and power consumed will be paid by owner.

3.1.15 SALVAGEABLE MATERIALS

3.1.15.1 Consider all asbestos free materials and contaminated items demolished or removed in the execution of the Work unsalvageable unless specifically noted otherwise in the Specifications or Drawings.

3.1.16 FUTURE WORK

3.1.16.1 Coordinate and schedule the Work of these Contract Documents in a manner that will expedite the transition to future work by others under separate Contracts.

3.1.17 OWNER RULES

3.1.17.1 The Contractor shall abide by the HACSB security rules and regulations.

3.2 SUMMARY OF WORK – ASBESTOS ABATEMENT SECTION II

3.2.1 DESCRIPTION

3.2.1.1 **Work included:** Contractor shall furnish all labor, materials, services, permits, insurance (specifically covering the handling and transportation of Asbestos-Containing Material, Asbestos-Containing Construction Material and Asbestos-Containing Waste Material), and equipment which is specified, shown, or reasonably implied for Asbestos Abatement activities specified in Section I.

3.2.1.2 Related Work:

3.2.1.2.1 Section I Asbestos Abatement

3.2.1.3 Applicable Publications: The publications listed below form a part of these Specifications to the extent referenced. The publications are referred to in the text by the basic designation only.

3.2.1.3.1 Code of Federal Regulations (CFR) Publications:

29 CFR 1910.1001 Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite

29 CFR 1926.1101	Asbestos
29 CFR 1910.1200	Hazard Communication
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.132	General Requirements - Personal Protective Equipment
29 CFR 1910.133	Eye and Face Protection
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.145	Specifications for Accident Prevention, Signs and Tags
40 CFR 61, Subpart A	General Conditions
40 CFR 61, Subpart M	National Emission Standards for Asbestos
40 CFR 361.150	Standard for Waste Disposal for Manufacturing, Demolition, Renovation, Spraying and Fabrication Operations
40 CFR Part 763, Appendix A of Subpart E	Asbestos Hazards Emergency Response Act (AHERA)

3.2.1.3.2 American National Standard Institute (ANSI) Publications:

Z9.2-1979	Fundamentals Governing the Design and Operation of Local Exhaust Systems
Z88.2-1992	Practices for Respiratory Protection

3.2.1.3.3 National Fire Protection Association (NFPA):

Standard 90A	Installation of Air Conditioning and Ventilation Systems.

3.2.1.3.4 U. S. Environmental Protection Agency (EPA):

Publication No.	
560/5-85-024	Guidance for Controlling Asbestos-Containing Materials in Buildings, June, 1985
600/4-85-049	Measuring Airborne Asbestos Following an Abatement Action

3.2.1.3.5 American Society for Testing Materials (ASTM) Publications:

E 849-82	Safety and Health Requirements Relating to Occupational Exposures to Asbestos
P-189	Specifications for Encapsulates for Friable Asbestos-Containing Materials

3.2.1.3.6 National Institute of Occupational Safety and Health (NIOSH) Publications:

Manual of Analytical Methods, 2nd Ed., Vol. 1.
Physical and Chemical Analysis Method (P&CAM):

Method 239	Asbestos Fibers in Air
Method 7400	Fibers (N1, 3rd Ed., Vol. 1.)

3.2.1.3.7 Underwriters Laboratories, Inc. (UL) Publications:

586-77 (R1982)	Test Performance of High Efficiency, Particulate, Air Filter Units

3.2.1.3.8 Title 8 California Code of Regulations (CCR):

Section 1529	Asbestos
Section 5208	General Industry Safety Orders
Section 5144	Respirator Regulations

3.2.1.3.9 South Coast Air Quality Management District: Amended Rule 1403 Asbestos Emissions from Renovation/Demolition Activities

3.2.1.3.10 Los Angeles Fire Department: Rule 68

3.2.2 DEFINITIONS

3.2.2.1 **Owner**: Housing Authority of the County of San Bernardino (HACSB)

3.2.2.3 **Abatement**: Procedures to control fiber release from Asbestos-Containing building materials. Includes removal, encapsulation, and enclosure.

3.2.2.4 **Air Lock**: A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area. (See Decontamination Enclosure System Plan in the Drawing section of this Project Manual)

3.2.2.5 **Air Monitoring**: The process of measuring the fiber content of a specific volume of air in a stated period of time.

3.2.2.6 **Air Sampling Professional**: The professional contracted or employed to supervise air monitoring and analysis schemes. This individual is also responsible for recognition of technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an Abatement Project. Acceptable Air Sampling Professionals include Industrial Hygienists, Environmental Engineers and Environmental Scientists with equivalent experience in Asbestos air monitoring and Worker protection.

3.2.2.7 **Amended Water**: Water to which a surfactant has been added.

3.2.2.8 **Area Monitoring**: Sampling of airborne fiber concentrations within the Asbestos Work Area and outside the Asbestos Work Area which are representative of the airborne concentrations of Asbestos fibers which may reach the breathing zone.

3.2.2.9 **Asbestos**: (29 CFR 1926.1101 Definitions) Includes Chrysotile, Amosite, Crocidolite, Tremolite asbestos, and any of these minerals that has been chemically treated and/or altered.

3.2.2.10 **Asbestos** (California Code of Regulations definitions): Means fibrous forms of various hydrated minerals including Chrysotile, (fibrous serpentine), Crocidolite (fibrous Riebeckite), Amosite (fibrous Cummintonite-Grunerite), Fibrous Tremolite, fibrous Actinolite, and fibrous Anthophyllite.

3.2.2.11 **Asbestos-Containing Material** (ACM) EPA definition: Material composed of asbestos of any type in an amount greater than 1 percent and by weight, either alone or mixed with other fibrous or nonfibrous materials.

3.2.2.12 **Asbestos-Containing Construction Material** (California definition): Means any manufactured construction material which contains more than 1/10th of 1% asbestos by weight.

3.2.2.13 **Asbestos-Containing Waste Material**: Means friable asbestos waste and asbestos waste from control devices (Pollution Control Devices).

3.2.2.14 **Asbestos Fibers**: Asbestos fibers having an aspect ratio of at least 3:1 and 5 micrometers in length.

3.2.2.15 **Authorized Visitor**: The Owner's Project Team members, the Owner's Representative, Observation Service and any representative of a regulatory or other agency having jurisdiction over the Project.

3.2.2.16 **Clean Room**: An uncontaminated area or room which is a part of the Worker Decontamination Enclosure with provisions for storage of Workers' street clothes and protective equipment.

3.2.2.17 **Contained Work Area**: A Work Area which has been Isolated, Plasticized, and equipped with a Decontamination Enclosure System.

3.2.2.18 **Curtained Doorway**: A device to allow ingress or egress from one area to another while permitting minimal air movement between the areas, typically constructed by placing three overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, and securing the vertical edge of the outer two sheets along

the opposite vertical side of the doorway (see detail on Decontamination Enclosure System Plan in the Drawing section of this Project Manual.)

3.2.2.19 **Decontamination Enclosure System**: A series of connected rooms, with Air Locks or Curtained Doorways between any two adjacent rooms, for the decontamination of Workers and of materials and equipment. A Decontamination Enclosure System always contains at least one Air Lock to the Work Area (see standard Decontamination Enclosure System Plan in the Drawing section of this Project Manual.)

3.2.2.20 **Encapsulant** (sealant): A liquid material which can be applied to Asbestos-Containing material and which controls the possible release of Asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

3.2.2.21 **Encapsulation**: All herein-specified procedures necessary to apply an encapsulant to Asbestos-Containing building materials to control the possible release of Asbestos fibers into the ambient air.

3.2.2.22 **Enclosure**: All herein-specified procedures necessary to enclose completely Asbestos-Containing Material behind airtight, impermeable, permanent barriers.

3.2.2.23 **Excursion Limit**: An exposure of airborne concentrations of Asbestos fibers of one fiber per cubic centimeter of air (1f/cc) as averaged over a sampling period of thirty (30) minutes.

3.2.2.24 **Equipment Room**: A contaminated area or room which is part of the Worker Decontamination Enclosure with provisions for storage of contaminated clothing and equipment.

3.2.2.25 **Equipment Decontamination Enclosure**: That portion of a Decontamination Enclosure System designed for controlled transfer of materials, waste containers and equipment, typically consisting of a Washroom and a Holding Area.

3.2.2.26 **Friable Asbestos Material** (40 CFR, Subpart M Definition): Material that contains more than one percent (1%) Asbestos by weight and that can be broken, crumbled, pulverized, or reduced to powder by hand pressure when dry.

3.2.2.27 **Fixed Object**: A unit of equipment or furniture or other building component which cannot be detached from the building or can only be detached by destructive methods resulting in irreparable damage to the item.

3.2.2.28 **Glovebag Method**: A method with limited applications for removing small amounts of friable Asbestos-Containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other nonplanar surfaces in an Isolated (noncontained) Work Area. The glovebag (typically constructed of six [6] mil transparent Regulite plastic) has two inward- projecting longsleeve rubber gloves, one inward-projecting waterwand sleeve, an internal tool pouch, and an attached, labeled receptacle for Asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all Asbestos fibers released during the removal process. All Workers who are permitted to use the Glovebag Method must be highly trained, experienced, and skilled in this method.

3.2.2.29 **HEPA Filter**: A high efficiency particulate air (HEPA) filter capable of trapping and retaining 99.97 percent of all monodispersed particles (Asbestos fibers) equal to or greater than 0.3 microns in mass median aerodynamic equivalent diameter.

3.2.2.30 **HEPA Vacuum Equipment**: Vacuuming equipment with a HEPA filter system.

3.2.2.31 **Holding Area**: A room in the Equipment Decontamination Enclosure located between the Washroom and an uncontaminated area. The Holding Area comprises an Air Lock.

3.2.2.32 **Isolation**: The sealing of all openings into a Work Area.

3.2.2.33 **Isolated (noncontained) Work Area**: A Work Area which is Isolated, but has not been Plasticized and may or may not be equipped with a Decontamination Enclosure System.

3.2.2.34 **Movable Object**: A unit of equipment, furniture or other building component which is detached or can be detached from the building without destructive methods or results.

3.2.2.35 **Negative Air Pressure Equipment**: A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated areas from adjacent uncontaminated areas.

3.2.2.36 **Nonfriable Asbestos-Containing Material**: Material that contains more than one (1) percent Asbestos by weight in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the Asbestos is well bound and will not release fibers during any appropriate end-use, handling, demolition, storage, transportation, processing, or disposal.

3.2.2.37 **Observation Service**: The agent of the Owner or the Owner's Representative who shall observe the Work, perform tests, verify that abatement methods and procedures specified by the Contract Documents are being complied with, and reports all observations and test results to the Owner or the Owner's Representative.

3.2.2.38 **Permissible Exposure Limit (PEL)**: An airborne concentration of asbestos, Tremolite, Anthophyllite, Actinolite, or a combination of these minerals in excess of 0.1 fibers per cubic centimeter of air as an eight (8) hour time-weighted average (TWA), as determined by the method prescribed in Appendix A of Section Five, Part 1925(amended) §1926.1101 (c).CFR.

3.2.2.39 **Personal Monitoring**: Sampling of Asbestos fiber concentrations within the breathing zone of an Asbestos Worker.

3.2.2.40 **Plasticize:** To cover floors, walls and other structural elements of a Work Area with plastic sheeting as herein specified with all seams securely taped.

3.2.2.41 **Removal**: All herein-specified procedures necessary to remove Asbestos-Containing materials from the designated areas and to dispose of these materials at an acceptable site.

3.2.2.42 **Shower Room**: A room between the Clean Room and the Equipment Room in the Worker Decontamination Enclosure with hot and cold or warm running water, and suitably arranged for complete showering during decontamination. The Shower Room comprises an Air Lock between contaminated and clean areas.

3.2.2.43 **Surfactant**: A chemical wetting agent added to water to reduce surface tension and improve penetration.

3.2.2.44 **Washroom**: A room between the Work Area and the Holding Area in the Equipment Decontamination Enclosure System where equipment and waste containers are decontaminated. The Washroom comprises an Air Lock.

3.2.2.45 **Wet Cleaning**: The process of eliminating Asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as Asbestos-contaminated waste.

3.2.2.46 **Work Area** (Also known as "Regulated Area"): Designated rooms, spaces, or areas of the Project in which Asbestos Abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A Contained Work Area is a Work Area which has been Isolated, Plasticized, and equipped with a Decontamination Enclosure System. An Isolated (noncontained) Work Area is a Work Area which is Isolated, but has not been Plasticized and may or may not be equipped with a Decontamination Enclosure System.

3.2.2.47 **Worker Decontamination Enclosure System**: That portion of a Decontamination Enclosure System designed for controlled passage of Workers, and other personnel and Authorized Visitors, typically consisting of a Clean Room, a Shower Room, and an Equipment Room.

3.2.3 QUALITY CONTROL

3.2.3.1 Safety Compliance: In addition to detailed requirements of this Specification, comply with laws, ordinances, rules, and regulations of federal, state, regional, and local authorities and publications regarding handling, storing, transporting, and disposing of Asbestos Waste materials. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the Work. Where the requirements of this Specification and referenced documents vary, the most stringent requirement shall apply.

3.2.3.2 Contractor shall have at least one copy each of 29 CFR Part 1910 - Occupational Safety and Health Standards, 29 CFR 1926.1101, 40 CFR Part 61, Subparts A & M, and all pertinent state and local regulations at his office and at the job site.

3.2.3.3 Before the commencement of any work at the site, the Contractor shall post bilingual (as appropriate) EPA and OSHA caution signs in and around the Work Area to comply with EPA and OSHA regulations.

3.2.3.4 Area Monitoring shall be performed by the Observation Service, which will conduct air sampling of the Abatement Project (1) outside the building, (2) immediately outside the Work Area, and (3) for Work Area Clearance Testing after decontamination operations.

3.2.3.5 Personal Monitoring and other monitoring, which are required by law, or considered necessary by the Contractor for Worker protection shall be the responsibility of the Contractor.

3.2.4 SUBMITTALS AND NOTIFICATIONS

3.2.4.1 **Personnel Training**: At the Pre-construction Meeting, Contractor shall submit (1) declaration certifying that all Contractor's employees have been adequately trained, and (2) a photocopy of training certificates for each employee from their respective training agency or organization. When certified or other formal worker training is required by state or local agencies, Contractor may submit a photocopy of the employee's Asbestos Worker Certification card in lieu of training certificates.

3.2.4.2 **Respirators**: Submit at Pre-construction Meeting manufacturer's certification that the respirators to be used in this Project comply with government agency requirements. Contractor's certifications for each employee must clearly state that each employee has been fit tested and properly trained for respirators.

3.2.4.3 **Medical Examinations**: Submit proof that all persons providing labor and/or professional services who will be entering contaminated areas have had current (less than one year prior to the date of their participation on the Project) medical examinations. Furnish physician's interpretation of said examinations to the Owner on the Certificate of Medical Compliance form provided in the Supplementary General Conditions section of these Construction Documents at the Pre-construction Meeting, or prior to that person's commencing work on this Project, and for each person subsequently providing labor and/or professional services at the job site for whom a certificate was not initially furnished. Refer to Article 2.5, A. NOTE: In lieu of the above certificate, current medicals will be acceptable providing that a statement in the medical exam declares that the worker can wear a negative pressure respirator while performing their work. Contractor shall resubmit physician's interpretation of medical examination for each worker or professional employed by him whose physician or regulatory required annual or employment termination examination becomes due while said worker or professional is participating in the Project. This requirement can be waived or modified only by the Owner in writing or verbally, followed up in writing.

3.2.4.4 **Product Submittals and Substitutions**: Comply with pertinent provisions of Section 01340.

3.2.4.5 **Abatement Product Data**: Within ten (10) days after Contractor has received the Owner's Notice of Award, submit manufacturer's catalogue, samples, Material Data Safety Sheets, (MSDS) and other items needed to demonstrate fully the quality of the proposed abatement materials. Under no circumstances shall proposed materials be used before written approval from the Owner, Owner's Representative or Observation Service.

Submittals are required if the following materials are proposed (not necessarily a complete list.) Do not submit data on products not proposed for this project:

3.2.4.5.1 Encapsulate
3.2.4.5.2 Surfactant
3.2.4.5.3 Protective packaging
3.2.4.5.4 Lagging adhesive
3.2.4.5.5 Glove bags
3.2.4.5.6 Restaurant
3.2.4.5.7 Solvents

3.2.4.6 **Permits**: Submit at Pre-construction Meeting proof satisfactory to the Owner, Owner's Representative or Observation Service that all required permits have been obtained. If no permits are required, submit notarized letter stating such.

3.2.4.7 **Waste Transportation**: Submit at Pre-construction Meeting the method of transport of Hazardous Waste, including the name, address, EPA ID number, and telephone number of the Transporter(s).

3.2.4.8 **Hazardous Waste Disposal Facility**: Submit for approval at the Pre-construction Meeting the name, address, EPA ID number, and telephone number of the Hazardous Waste Disposal Facility(s) to be used.

3.2.4.9 **Contractor's Work Plan**: Submit at the Pre-construction Meeting for approval a detailed plan of the work procedures to be used in the removal, repair, clean-up or encapsulation of materials containing Asbestos. Such a plan shall include:

3.2.4.9.1 Location of Asbestos Work Areas.
3.2.4.9.2 Layout and construction details of Decontamination Enclosure Systems.
3.2.4.9.3 Project schedule including important milestones, critical paths and interface of trades involved in the Work.
3.2.4.9.4 Personal air monitoring procedures.
3.2.4.9.5 Detailed description of the method to be employed in order to control pollution, including negative air equipment calculations.
3.2.4.9.6 Names of Superintendent, Foremen, Project Manager and other key personnel, and their day-time and emergency telephone numbers.
3.2.4.9.7 Security Plan including sketches necessary to clearly describe the plan.
3.2.4.9.8 Emergency evacuation plan for injured workers, compressor failure, fire and other emergencies.
3.2.4.9.9 Firewatch Plan including any sketches necessary to clearly describe the plan.
3.2.4.9.10 A contingency plan, in the event of a major contamination incident caused by fire (on or off the floor being abated), a large breech in the Work area containment barrier, the opening of stairwell doors, breakage of the building's exterior windows or sabotage. Such a plan will focus on how to maintain safety and order when the building is fully occupied by office employees and other building users.
3.2.4.9.11 The Asbestos Plan must be approved in writing by the Owner and Observation Service before the start of any work.

3.2.4.10 **Equipment Certification**: Submit at Pre-construction Meeting manufacturers' certification that vacuums, negative air pressure equipment filters, and other local exhaust ventilation equipment conform to ANSI Z9.2-1979. All negative air pressure equipment Permit to Operate issued by the South Coast Air Quality Management District.

3.2.4.11 **Rental Equipment**: When rental equipment is to be used in removal areas or to transport waste materials, a copy of the written notification provided to the rental company informing them of the nature of use of the rented equipment shall be signed by the rental company and submitted to the Observation Service at the Pre-construction Meeting.

3.2.4.12 **Notifications**: Contact the following government agencies in writing by certified/registered mail or overnight mail service, postmarked or delivered at least ten (10) working days prior to Project commencement:

3.2.4.12.1 EPA Regional Asbestos Coordinator
3.2.4.12.2 Occupational Safety and Health Administration
3.2.4.12.3 South Coast Air Quality Management District
3.2.4.12.4 Check with local Fire Authority for their Notification Requirements

ALL NOTIFICATIONS SHALL CONTAIN AS A MINIMUM THE FOLLOWING INFORMATION:

1. Name, address and telephone number of the Owner including the contact person.
2. Name, address, EPA numbers, license number and telephone number of the Contractor including the contact person.
3. Name, address and description of the building, including size, age, and prior use of building.
4. The type and quantity of friable Asbestos material involved and the description of the Work.
5. Scheduled starting and completion dates for Abatement Work.
6. Procedures that shall be employed to comply with the regulations.
7. The name, address, EPA number and telephone number of the Transporter.
8. The name and address of the Hazardous Waste Disposal Facility where the Asbestos Waste shall be deposited.

<u>Copies of all government agency correspondence and proof of delivery shall be delivered to the Observation Service at the Pre-construction Meeting.</u>

<u>NOTE: No work shall commence until verification of required notifications is made by the Observation Service.</u>

3.2.4.13 **Certificate of Worker's Release**: The Contractor shall have any person providing labor and professional services at the Project site sign a Certificate of Worker's Release, on the form provided in the Supplementary General Conditions section of these Construction Documents, before commencing work on this Project. Contractor shall furnish the notarized original of such Certificate of Worker's Release for each such person at the Pre- construction Meeting or before that person's commencement of Work, and for each person subsequently providing labor or professional services at the job site for whom a Certificate was not initially furnished. This requirement can be waived or modified only by the Owner, in writing or verbally, followed in writing.

3.2.4.14 Provide proof of Contractor's License and Asbestos Certification from the Contractor Licensing Board, and proof of registration with the Division of Occupational Safety and Health in accordance with California Labor Code, Section 6501. Submit proof with Bid.

3.2.4.15 Encapsulant manufacturer's certification (when required) that the Contractor is an approved applicator of the encapsulants to be used on this project

3.2.4.16 **Scaffolding**: Submit to the Owner's Representative or Observation Service prior to abatement work, certification from a licensed Civil or Structural Engineer that the scaffolding design and installation is safe and adequate for the purpose for which it will be used. Submit copy of scaffolding permit when required by local regulatory agencies.

3.2.5 ADMINISTRATION OF THE CONTRACT

3.2.5.1 All Work is to be performed under the observation of the Observation Service and the Owner's Representative, who shall be free to enter and review all Work.

3.2.6 SAFETY

3.2.6.1 Submit at the Pre-construction Meeting written procedures for evacuation of injured Workers. Aid for seriously injured Workers shall not be delayed in order to comply with standard decontamination procedures. It is the responsibility of the Contractor to decide if the seriousness of the injury warrants noncompliance with the standard decontamination procedures.

3.3 WORKER PROTECTION

3.3.1 TRAINING PROGRAM

3.3.1.1 Each employee shall receive training in the proper handling of materials that contain Asbestos, including all aspects of work procedures and protective measures, use of protective clothing and respiratory protection, use of showers, entry and exit procedures from Work Areas and in OSHA regulations. All workers who are scheduled to use the Glovebag Method must be highly trained, experienced and skilled in this method. Each employee shall also understand the health implications and risks involved, including the illness possible from exposure to airborne Asbestos fibers and the increased risk of lung cancer associated with smoking cigarettes and Asbestos exposure, understand the use and limits of the respiratory equipment to be used, and understand the purpose of medical surveillance and the monitoring of airborne quantities of Asbestos as related to health and respiratory equipment. The training program shall comply with federal, state or local regulatory requirements.

3.3.1.2 Emergency evacuation procedures to be followed in the event of Worker injury.

3.3.2 DRESS AND EQUIPMENT

3.3.2.1 Work clothes shall consist of disposable full-body coveralls, head covers, boots, and rubber gloves. Sleeves at wrists and cuffs at ankles shall be secured. Fire retardant full-body coveralls are required in areas of open flame, or where required by local regulations.

3.3.2.2 Eye protection and hard hats shall be required at all times by applicable safety regulations.

3.3.2.3 Provide Authorized Visitors with suitable protective clothing, headgear, eye protection, and footwear whenever they are required to enter the Work Area.

3.3.3 RESPIRATORS

3.3.3.1 Respiratory protective equipment shall be MSHA/NIOSH approved in accordance with the provisions of 30 CFR Part 11 unless superseded by local regulations with more stringent requirements. Respiratory instructions shall be posted in the Clean Room.

3.3.3.2 Half-mask or full-face air-purifying respirators with HEPA filters may be worn during the preparation of the Work Area, performance of repair work, use of glovebag techniques, removal of floor tile and mastic, and decontamination work, provided Work Area fiber concentrations are less than 0.1 f/cc.

3.3.3.3 Workers shall always wear a respirator, properly fitted on the face, in the Work Area, from the initiation of abatement work until all areas have been given written clearance by the Observation Service.

3.3.4 WORKER PROTECTION PROCEDURES – TO BE POSTED IN CLEAN ROOM

Bilingual (English and other appropriate language[s]) Worker Protection Procedures must be posted in the Clean Room. If the first language of all Workers is English, the bilingual procedures are excepted.

3.3.4.1 Each Worker and Authorized Visitor shall, upon entering the job site: remove street clothes in the Clean Room and put on a respirator and clean protective clothing before entering the Equipment Room or the Work Area.

3.3.4.2 All Workers shall, each time they leave the Work Area: remove gross contamination from clothing before leaving the Work Area; proceed to the Equipment Room and remove all

clothing except respirators; When Friable ACM has been abated, still wearing the respirator, proceed naked to the showers; clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves.

3.3.4.3 Following showering and drying off, each Worker shall proceed directly to the Clean Room and dress in their personal clothing. Before reentering the Work Area, each Worker and Authorized Visitor shall put on a clean respirator and shall dress in clean protective clothing.

3.3.4.4 Contaminated protective clothing and work footwear shall be stored in the Equipment Room when not in use in the Work Area. At appropriate times or upon completion of Asbestos Abatement, dispose of protective clothing and footwear as contaminated waste, or launder in accordance with government regulations.

3.3.4.5 Workers removing waste containers from the Equipment Decontamination Enclosure shall enter the Holding Area from outside wearing a respirator and dressed in clean disposable coveralls. No Worker shall use this system as a means to leave or enter the Washroom or the Work Area.

3.3.4.6 The disposable clothing worn outside the Work Area shall be of different color or markings from the disposable clothing worn inside the Work Area.

3.3.4.7 Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work Area.

3.3.4.8 Workers and Authorized Visitors with beards or who are unshaven shall not enter the Work Area.

3.3.5 MEDICAL EXAMINATIONS AND HISTORIES

3.3.5.1 Before exposure to airborne Asbestos, the Contractor will provide each employee providing labor or professional services at the Project site with a current comprehensive medical exam, including a history of respiratory and gastrointestinal diseases, meeting the general definition outlined in 29 CFR 1910.1001, 29 CFR 1910.134, 29 CFR 1926.1101 and California Administrative Code Title 8, CAC Section 5208, page 442.2.l part (1). Contractor shall submit the signed original "Certificate of Medical Compliance" form provided in these Contract documents as proof of compliance with regulatory medical requirements. In lieu of the above form, a current Medical Examination report will be accepted. The medical report shall contain a statement from the examining physician that the employee can (or cannot) function normally wearing a respirator or that the safety or health of the employee or other employees will or will not be impaired by his use of a respirator. Submission of medicals or completed Certificates of Medical Compliance is not required when local jurisdictions (New York City, Massachusetts, etc.) require proof of current medical examination before issuance or renewal of Asbestos Worker Certificates. No employee will be allowed to enter the Work Area without having first provided the completed Certificate of Medical Compliance form, or a copy of their Medical Examination, to the Owner's Representative and until the submitted form or medical has been approved by the Observation Service. Local medical requirements shall apply if they are more stringent.

3.3.6 EMPLOYEE IDENTIFICATION

3.3.6.1 The Contractor shall furnish an employee roster to the Owner's Representative for each work shift. Each employee entering the Work Area shall have in his possession a plastic- coated identification tag with the employee's photograph, name, age, height, weight, and eye color. Each employee shall bring to the job at least two forms of identification, one of which has his/her photograph.

3.4 PRODUCTS

3.4.1 GENERAL

3.4.1.1 Contractor shall furnish, provide and utilize the following products in the Work as specified.

3.4.2 PROTECTIVE COVERING (PLASTIC)

3.4.2.1 Ten (10) mil, six (6) mil, and four (4) mil polyethylene sheets in sizes to minimize the frequency of joints.

3.4.3 TAPE

3.4.3.1 Duct Tape 2" or wider, or equal, and capable of sealing joints of adjacent sheets of plastic, and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials, and capable of adhering under both dry and wet conditions, including use of amended water.

3.4.4 PROTECTIVE PACKAGING

3.4.4.1 Appropriately labeled clear, double six (6) mil sealable polyethylene bags as a minimum.

3.4.4.2 Appropriately labeled, sealable, impermeable drum containers.

3.4.4.3 Bilingual labels (English and other appropriate language[s]) on containment glovebags, waste packages, contaminated material packages and other containers shall be in accordance with EPA or OSHA standards.

3.4.5 WARNING LABELS AND SIGNS

3.4.5.1 As required by 29 CFR 1910.1001, 29 CFR 1910.1200, 29 CFR 1926.1101 and other pertinent state and local regulations, whichever is the most stringent.

3.4.6 SURFACTANT

3.4.6.1 Surfactant, or wetting agent, for amending water will be 50 percent polyoxyethylene polyglycol ester and 50 percent polyoxyethylene ether, or equivalent, at a concentration of one (1) ounce per five (5) gallons of water.

3.4.7 ENCAPSULATING SEALER

3.4.7.1 Shall be a penetrating or bridging type, pollution-free, nontoxic, with a Class A fire classification as specified herein. Encapsulants with the ingredient Methylene Chloride are not acceptable unless the contractor can prove to the Owner's satisfaction that equal substitute materials are not available. If substitutes are not used, the Contractor shall submit with the Asbestos Plan, for Owner approval, respiratory protection and negative air discharge procedures to protect workers, authorized personnel and the public from Methylene Chloride exposure. Material shall be flexible when cured, resistant to weathering, oxidation, aging and abuse. The following encapsulating materials are approved by LAISD: Asbestos protective Coatings Corp. ABS-100, Certified Technologies Corp. Certain 2000, International Protective Coatings Corp. Serpiflex. No substitutions will be considered.

3.4.7.2 Shall be a water-dispensed coating, insoluble in water when cured.

3.4.7.3 Shall be used undiluted.

3.4.7.4 Shall have a written certification from the manufacturer that the encapsulant is compatible with the replacement material and will safely withstand temperatures of all surfaces on which the encapsulation will be applied.

3.4.7.5 The Owner's Representative may at any time take random samples of encapsulant from open containers or spray equipment for testing to insure product quality and compliance with the Specifications.

3.4.7.6 Encapsulant found not to be in conformance with requirements of these Specifications shall be removed from the site immediately. All areas where the defective encapsulant has been applied shall be re-sprayed with approved encapsulant or remedied in a manner, including the possibility of removal and replacement of the subject Asbestos-Containing Material, acceptable to the Owner. Re-encapsulation expense shall be borne by the Contractor.

3.4.7.7 Encapsulate to be applied to structural members before reapplication of spray-applied

or trowel-applied fireproofing must be a component of the fireproofing system when it was tested and rated by the underwriters' laboratory (UL), American Society for Testing Materials (ASTM), Factory Mutual (FM) or other building code approved testing agencies.

3.4.8 LAGGING ADHESIVE

3.4.8.1 Shall meet NFPA 90A Code, such as Arabol, Childers CP52, Insul-Coustic 102, or approved equal.

3.4.9 GLOVEBAGS

3.4.9.1 The glovebag (typically constructed of six [6] mil transparent regulated plastic) has two (2) inward-projecting longsleeve rubber gloves, one (1) inward-projecting waterwand sleeve, an internal tool pouch, and an attached labeled receptacle for Asbestos Waste.

3.4.10 TOOLS AND EQUIPMENT

3.4.10.1 Provide suitable tools for Asbestos removal and encapsulation.

3.4.10.2 Negative air pressure equipment: High-efficiency particulate air (HEPA) filtration systems shall have filtration equipment in compliance with ANSI Z9.2-1979, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work Area.

3.4.10.3 Manometer:

3.4.10.3.1 Shall have a built-in alarm. Continuous hard copy readout optional.

3.4.10.4 HEPA Vacuums:

3.4.10.4.1 Shall comply with ANSI Z9.2-1979.

3.4.11 RESTAURANT (Standard Roofing Product):

3.4.11.1 Asphalt cut back with solvent, fillers and plasticizers added, low melt type, shall make up 65-76% of the restaurant. Thinner shall be a blend of mineral spirits and naptha making up 30-35% of the restaurant covers. The fillers shall consist of plasticizing oils, wetting agents to aid in penetration, thickeners to add body and control flow (Bentonite clay).

3.4.12 LUMBER

3.4.12.1 Shall be flame retardant and carrying markings certifying such properties.

3.4.13 SOLVENTS

3.4.13.1 No petroleum or citrus based materials shall be applied to floors for any purpose. Other solvents if approved by Owner shall be non-toxic, non-carcinogenic, nonflammable (flash- point in excess of 200° F.), nonreactive with or damaging to materials it will come in contact with and approved for indoor use by regulatory agencies. Provide ventilation of Work Area as required by manufacturer. Vent exhaust to the exterior of the building and in a manner that will not result in adverse effects to other areas of the facility, adjacent facilities or public areas. Solvents shall not be used in areas where foods are stored.

3.5 EXECUTION

3.5.1 WORK AREA PREPARATION

3.5.1.1 Preparation Procedures for: The removal of resilient floor tile, resilient sheet flooring, flooring mastic:

3.5.1.1.1 The above removal shall be executed in an Isolated Work Area.

3.5.1.1.2 Contractor shall isolate the Work Area for the duration of the Project, completely sealing all openings, including but not limited to, HVAC ducts, diffusers and grilles,

skylights, doorways and windows, with six (6) mil polyethylene sheet plastic securely taped to a clean surface. Cover all wall surfaces up to six (6) feet from floor level with a minimum of one (1) layer of 6-mil polyethylene sheeting if NO Mechanical equipment will be used to remove the ACM Floor tile and ACM Mastic. If using Mechanical means for removal, than full containment (walls and ceilings) shall be implemented.

3.5.1.1.3 Curtained Doorway: Contractor shall construct a Curtained Doorway of clear plastic sheeting, using six (6) mil polyethylene plastic, at entrances and exits to the Work Area.

3.5.1.1.4 The Contractor shall check regularly (at the beginning, middle and end of each shift as a minimum) all polyethylene isolation barriers for punctures, loose seals, and contact with heat-generating devices, etc. Problem areas shall be repaired or mended immediately.

3.5.1.1.5 The Contractor shall install and maintain Negative Air Pressure Equipment during the abatement and decontamination phases of the Project until the Clearance Test has passed. In unoccupied facilities a sufficient amount of air shall be exhausted by the unit(s) to create a pressure of -0.02 inches of water within the Work Area with respect to the area outside the Work Area. If only one unit is necessary to provide the specified negative air pressure in a Work Area, the Contractor shall have a backup unit in place should the first unit fail and for filter changes. When the "Mini Containment" option is utilized the Contractor may substitute a HEPA vacuum to create the specified negative air pressure within the Work Area when standard Negative Air Pressure Equipment volumes are too great.

3.5.1.1.6 Maintain existing emergency exits from the building. Maintain a minimum of two (2) exits from the Work Area where possible. The first exit shall be the Worker Decontamination Enclosure system. The second exit, when possible, shall be a second door, window, or other appropriate opening with a rip cord emergency only exit seal. Exits, where possible, shall be on opposite ends of the Work Area. All exits shall be labeled in bright letters or signage. The second exit shall be labeled "Emergency Exit Only." Establish alternative exits satisfactory to fire officials when existing building Work Area emergency exits are unavoidably blocked by activities of this project.

3.5.1.1.7 Provide and maintain appropriate "ABC" type fire extinguishers in the Work Area. The size and number of extinguishers shall be as required by local fire officials, but shall not be less than one (1) fire extinguisher inside and outside the Work Area.

3.5.1.1.8 Provide temporary emergency lighting with battery backup power in all Work Areas where none exists. Work Areas with natural lighting, and no night work to be performed, are exempt from this requirement. [Temporary emergency lighting in the following Work Area(s) is optional if the Contractor provides flashlights to workers. NOTE: Flashlights must be in the possession of the Worker at all times while in Work Areas.

3.5.1.1.9 Notify the Observation Service twenty-four (24) hours in advance of when preparatory steps will be completed. Asbestos Abatement Work shall not commence until: all preparation requirements have been completed; all tools, equipment, and materials are on hand; all required submittals, notices and permits have been approved, and until the Observation Service authorizes in writing that Work is to commence.

3.5.1.2 Preparation procedures for removal of non-friable Asbestos-Containing roofing mastics:

3.5.1.2.1 Remove all non-stationary objects from the work area and store in an area that is not subject to contamination by subsequent roofing removal.

3.5.1.2.2 Cover all stationary objects and surfaces not intended for removal or stripping of asbestos containing materials. Cover and render air tight with a minimum 6-mil polyethylene sheeting all air passage ways such as doors, windows and vents that are immediately adjacent or contiguous to the work area surface. This does not include the openings at the sides and ends of the building.

3.5.1.2.3 It is the responsibility of the Abatement Contractor to ensure that all windows and doors are closed and locked during the removal procedures. Use an airless sprayer to wet materials prior, during and after removal procedures.

3.5.2 DECONTAMINATION ENCLOSURE SYSTEMS

3.5.2.1 Decontamination Enclosure Systems (Worker and Equipment) general requirements:

3.5.2.1.1 Build suitable wood, metal or PVC framing as described herein and as approved by the Observation Service at the shop drawing submittal stage. Framed walls susceptible to damage or which also form a security barrier between Work Areas and public areas shall be sheathed with 3/8" min. plywood. Paint public facing side of plywood (color to be selected by Owner). Portable prefab units, if utilized, must be submitted for review and approval by the Observation Service before start of construction. Submittal shall include, but not be limited to, a floor plan layout complying with the schematic layouts bound herein, showing dimensions, materials, sizes, thickness, plumbing, and electrical outlets, etc.

3.5.2.2 Decontamination Enclosure System for asbestos abatement work in "Contained" Work Areas:

3.5.2.2.1 Construct a Workers' Decontamination Enclosure System contiguous to the Work Area consisting of three totally enclosed chambers to conform with standard drawings bound herein as follows:

3.5.2.2.1.1 An Equipment Room with an Air Lock to the Work Area and a Curtained Doorway to the Shower Room.

3.5.2.2.1.2 A Shower Room with two Curtained Doorways, one to the Equipment Room and one to the Clean Room. Plastic on Shower Room and adjoining Equipment and Clean Rooms shall be opaque. The Shower Room shall contain at least one shower with hot and cold or warm water. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind. Trap shower waste using filters having a maximum pore size of 1.0 micron, and drain into a sanitary sewer. Replace filters when they become clogged. Ensure a supply of soap and disposable towels at all times in the Shower Room.

3.5.2.2.1.3 A Clean Room with one Curtained Doorway into the shower and one entrance or exit to noncontaminated areas of the building. The Clean Room shall have sufficient space for storage of the Workers' street clothes, towels, and other noncontaminated items. Joint use of this space for other functions, such as offices, storage of equipment, materials, or tools, shall be prohibited.

3.5.2.2.2 Construct an Equipment Decontamination Enclosure System consisting of two totally enclosed chambers as follows:

3.5.2.2.2.1 A Washroom with an Air Lock to a designated staging area of the Work Area and a Curtained Doorway to the Holding Room.

3.5.2.2.2.2 A Holding Room with a Curtained Doorway to the Washroom and a doorway to an uncontaminated area.

3.5.2.2.3 Decontamination Enclosure System for non-friable Roof Asbestos-Containing

materials:

3.5.2.2.3.1 None required. However, workers shall HEPA vacuum work clothes and wet wipe respirator with amended water.

3.5.3 ASBESTOS REMOVAL

3.5.3.1 Before removal, Asbestos materials shall be sprayed with Amended Water. The Asbestos materials shall be sufficiently saturated without causing excessive dripping and to prevent emission of airborne fibers, at any time, in excess of Maximum Acceptable Level. Spray materials repeatedly during the work process to maintain a wet condition. If the materials are not easily saturated, then the Work Area shall be constantly misted to keep fiber emission minimal.

3.5.3.2 Asbestos material shall be removed in manageable sections by a multi-person team, some of whom are wetting and the remainder removing and cleaning. Material shall not be allowed to dry out. Before a second area can be started, removed material shall be packed into approved and labeled packaging while it is still wet and removed from the work area. All work areas will be left in a clean condition at the end of each work shift. The outside of all containers shall be clean before leaving the Work Area. Move containers to the Washroom (Shower Room when Equipment Decontamination System is not required), wet- clean each container thoroughly, and move to Holding Area pending removal to uncontaminated areas.

3.5.3.3 Asbestos material applied to concrete, steel decks, beams, columns, pipes, tanks, and other nonporous surfaces shall be wet-cleaned to a degree that no traces of debris or residue are visible.

3.5.3.4 Asbestos material debris, drippings, splatters, and overspray on surfaces within accessible cavities and other accessible areas shall be removed in the same manner and cleaned to the degree as specified above.

3.5.3.5 The Work Area shall be kept orderly, clean and clear of work materials, polyethylene sheeting, tape, cleaning material, and clothing, and all other disposable material or items used in the Work Area shall be packed into properly labeled protective packaging and removed from the Work Area.

3.5.3.6 Protective packages and drums containing Asbestos materials shall be cleaned and stored in the isolated Holding Area until that time when the materials are to be loaded and hauled to the Hazardous Waste Disposal Facility for burial. The packages and drums shall be stored in piles no higher than four (4) feet, and in a manner that will not result in damage to the packages or drums. Transport bags in covered drums or carts from the Holding Area to the transport.

3.5.3.7 Equipment removal procedures: Clean surfaces of contaminated equipment thoroughly by wet-sponging or wiping before moving such items into the Washroom (Shower Room when Equipment Decontamination System is not required) for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave Work Area through the Equipment Decontamination Enclosure.

3.5.3.8 Do not bag water used during abatement activities. Properly filter and drain water into building sanitary drain unless prohibited by local regulations. Filter shall have a maximum pore size of 1.0 micron.

3.5.3.9 Nonfriable materials:

3.5.3.9.1 Floor Tile and Friable Mastic: Remove floor tile and mastic with wet methods and in a manner that will not create friable debris. Mechanical equipment or tools used with water/chemicals are permissible providing that friable debris will not be generated. Mechanical equipment or tools used without the use of water will be allowed only if they are the dustless type and if the equipment has a self-contained bagging system and HEPA filtration or under a “full containment.” Remove tile mastic until no residue is visible other than that which is embedded in the pores, cracks, or other voids below the surface of the floor substrate. Package floor tile and mastic in unlabeled

double six (6) mil lined containers or bags, or in accordance with the disposal facilities requirements.

3.5.3.9.2 Roofing Mastic Materials (Flashing and Penetration mastics):

3.5.3.9.2.1 Use removal methods that will keep the tearing and fraying of the roof membrane to a minimum. If sawing tools are used, they must be factory equipped with HEPA filtering devices, or perform in a manner that will not release visible dust emissions. Roofing debris made friable shall be misted with an asphalt restaurant before transportation to dumpsters. Do not use water. Do not use excessive amounts of restaurant that may result in leakage into the building.

3.5.3.9.2.2 Off-load roofing debris into dumpster by means of chutes, cranes or hand to hand. Use dust control methods as required to hold dust generation to a minimum.

3.5.3.9.2.3 The work area shall be kept orderly, clean and clear of work materials. Package roofing mastic materials in unlabeled double six (6) mil lined containers (bins) or bags.

3.5.4 DECONTAMINATION OF WORK AREA

3.5.4.1 Decontaminated procedures for "Contained" Work Areas, excluding Asbestos-Containing Material encapsulation work:

3.5.4.1.1 Remove all visible accumulations of Asbestos material and debris. Wet-clean all surfaces within the Work Area to remove Asbestos residue.

3.5.4.1.2 After cleaning, the Contractor shall perform a complete visual inspection of the Work Area to ensure that the Work Area is free of any visible debris or residue.

3.5.4.1.3 Upon completion of his visual inspection, the Contractor shall notify the Observation Service in advance that the Work Area is ready for Initial Review.

3.5.4.1.4 Upon proper notification, the Observation Service will review the Work Area for general conformance with the Specifications. Any nonconformance of the Work shall be remedied by the Contractor until the Work Area is in compliance, and at the Contractor's expense.

3.5.4.1.5 Upon successful compliance with the Initial Review by the Observation Service and after written notification, the Contractor shall encapsulate surfaces where Asbestos materials have been removed. Unless specified otherwise encapsulate those portions of the items where the Asbestos-Containing material was missing prior to the start of this Contract.

3.5.4.1.6 Upon proper notification, the Observation Service will review the encapsulated surfaces for general conformance with the Specifications. Any nonconformance of the Work shall be remedied by the Contractor until the Work is in compliance and at the Contractor's expense.

3.5.4.1.7 Sealed drums and bags, and all equipment used in the Work Area, shall be included in the cleanup and shall be removed from the Work Area via the Equipment Decontamination Enclosure System, at the appropriate time in the cleaning sequence.

3.5.4.1.8 Contractor shall notify the Observation Service twenty-four (24) hours in advance that the Work Area is ready for Pretesting Review and Clearance Testing. Refer to appropriate Article on Air Monitoring in this Section for Clearance Testing standards. Contamination found during the Pre-testing Review shall be remedied by the Contractor, at his expense, prior to clearance testing.

3.5.4.1.9 Upon written notification from the Observation Service that the Work Area has passed the standard for Clearance Testing, the Contractor shall apply, when included in the Contract, the Asbestos-free replacement materials and re-establish objects and systems as specified in these specifications. The inner plastic layer and isolation barriers may be removed by the Contractor at any time after written notification.

3.5.4.1.10 Upon completion of the application of replacement materials, or if no replacement materials are required, after the removal of the inner plastic layer, isolation barriers and the re-establishment of objects and systems the Contractor shall notify the Observation Service and/or Owner's Representative twenty-four (24) hours in advance that the Work Area is ready for Pre-final Review.

3.5.4.1.11 Upon notification, the Observation Service and Owner's Representative will review the Work Area. Improper application of replacement materials, unapproved damage to the facility or its contents, or improper re-establishment of objects and systems discovered during the Pre-final Review shall be itemized on a Punch List for correction by the Contractor at his expense. If no deficiencies are discovered the Contract or this portion of the Contract shall be approved in writing by the Observation Service and Owner's Representative as complete. If deficiencies are noted, continue with the subsequent procedures. NOTE: If deficiencies noted do not prevent the Owner from occupancy or proceeding with reconstruction work shall be specified in writing by the Observation Service and the Owner's Representative Substantially Complete.

3.5.4.1.12 Upon correction of Punch List deficiencies the Contractor shall notify the Observation Service and Owner's Representative in advance that the Work Area is ready for Final Review.

3.5.4.1.13 Upon notification the Observation Service and Owner's Representative will review the corrected Punch List deficiencies. If all deficiencies have been corrected, the Contract, or this portion of the Contract, shall be approved in writing by the Observation Service and Owner's Representative as complete. If deficiencies have not been properly corrected the Contractor shall repeat, at his expense, procedures 15 and 16 until all deficiencies have been corrected and approved. NOTE: If deficiencies noted do not prevent the Owner from occupancy or proceeding with reconstruction work, the Contract or this portion of the Contract shall be specified in writing by the Observation Service and the Owner's Representative Substantially Complete.

3.5.5 ASBESTOS DISPOSAL

3.5.5.1 Asbestos-Containing Waste Materials shall be packed into approved sealed and labeled protective packaging.

3.5.5.2 Containers removed from the Holding Area must be removed by Workers who have entered from uncontaminated areas dressed in clean coveralls. Workers must not enter from uncontaminated areas into the Washroom or the Work Area; contaminated Workers must not exit the Work Area through the Equipment Decontamination Enclosure System.

3.5.5.3 Contractor shall deliver Asbestos-Containing Waste Materials to the predesignated Hazardous Waste Disposal Facility in accordance with the guidelines of the EPA.

3.5.5.4 The Contractor shall notify the Observation Service twenty-four (24) hours, in advance, when Asbestos-Containing Waste Materials are to be removed from the site. The Observation Service must be present during the removal of Asbestos-Containing Waste Materials from the Work Area. A copy of the Uniform Hazardous Waste Manifest, or other document required by State or Local agencies, shall be submitted to the Observation Service for review and signature prior to transporting Asbestos-Containing Waste Materials to the disposal facility.

3.5.5.5 At the conclusion of Work, the Contractor shall provide evidence (such as a "Bill of Lading" or "Hazardous Waste Manifest") that the Asbestos-Containing Waste Material was disposed of at the approved EPA Hazardous Waste Disposal Facility. The evidence shall be submitted with the final request for payment, the Contractor shall indicate on the "Bill of Lading" or "Hazardous Waste Manifest" the weight, in tons, of the Asbestos-Containing Waste Material generated from the Project. This weight amount must be confirmed by a party independent from the Contractor.

3.5.5.6 The Contractor shall be responsible for the safe handling and transportation of all Hazardous Waste, generated by the Project of this Contract, to the designated Hazardous Waste Disposal Facility. The Contractor shall bear all costs for all claims, damages, losses, and clean up expenses against the Owner or the Observation Service, including but not limited to attorney's fees rising out of, or resulting from, Asbestos spills on the site or spills en-route to the Hazardous Waste Disposal Facility.

3.5.5.7 Nonfriable Debris Disposal: Resilient floor tiles, and other Nonfriable Asbestos-Containing Materials will not be required to be disposed of as hazardous waste, unless they are made friable during demolition (see definitions for description of friability). Friability will be determined by the Observation Service, Owner's Representative or a representative of a regulatory agency. Originally, nonfriable materials determined friable by a representative of a regulatory agency, the Observation Service or Owner's Representative, will be considered a "Change in the Work," providing the Contractor cannot control the friability of the materials when following the removal procedures specified earlier in this Section. Additional handling and disposal costs, due to a "Change in the Work," will be adjusted in accordance with the Contract Documents.

3.5.6 AIR MONITORING AND TESTING

3.5.6.1 Area Air Monitoring:

3.5.6.1.1 Throughout removal, encapsulation, and cleaning operations, Area Air Monitoring shall be conducted by the Observation Service to ensure that the Contractor's engineering controls and work practices are minimizing worker and public exposures to airborne asbestos fibers. In accordance with applicable codes, regulations, and ordinances. Fiber counting shall be done by the PCM Method No. 7400 established by NIOSH, with the following as minimum samplings recommended by the EPA:

Areas To Be Sampled	Minimum No of Samples	Minimum Volume
Benchmark	1/work area	1200L
Work Area	1/work shift	800L
Outside of Building	1/week	1200L
Adjacent to Work Area	3/work shift	1200L
At Negative Air Equipment exhausts	1/work shift	1200L

3.5.6.1.2 The Observation Service shall report the Area Air Monitoring results to the Contractor on the following day. If Area Air Monitoring results are unsatisfactory, the Contractor shall make changes in his engineering controls and work practices to assure compliance with the following standards. Unsatisfactory results are fiber counts within the Work Area in excess of the Maximum Acceptable Level or fiber counts outside the Work Area in excess of the Benchmark.

3.5.6.1.3 Personal Air Monitoring:

3.5.6.1.3.1 Initial and periodic eight (8) hour TWA and thirty (30) minute excursion limit air monitoring of Worker exposures to airborne concentrations of Asbestos fibers shall be in accordance with OSHA (CFR 1926.1101) requirements.

3.5.6.1.3.2 Once OSHA sampling requirements are satisfied the Contractor shall conduct, as a requirement of this Contract, not less than one (1) personal air sample, twice per calendar week, to determine 8-hour time-weighted average (TWA) exposures and thirty (30) minute Excursion Limit exposures of workers operating in each Work Area. Samples shall be collected within the Workers' breathing zones. Samples shall be taken for each ten (10) workers from the time preparation work is started until the Work Area has passed Clearance Testing. NOTE: Contract required personal sampling is not necessary while the Contractor is conducting OSHA required sampling or when Type C Respirators are in use.

3.5.6.1.3.3 The Contractor shall report Personal Monitoring results to the Observation Service within 48 hours from the end of the work shift. Worker exposures to airborne Asbestos concentrations shall not exceed the Permissible Exposure Limit (PEL) of 8-hour time-weighted average (TWA) of 0.1 fibers (longer than 5 micrometers) per cubic centimeter of air, or the 1f/cc 30 minute period Excursion Limit.

3.5.6.1.4 Clearance Testing:

3.5.6.1.4.1 PCM air sampling protocol will be required for the abatement of ACBM greater than small scale short duration work, more than or equal to 160 square feet or 260 linear feet.

3.5.6.1.4.2 Contained Work Areas: The Contractor should not be released until final inspection and air testing are performed using Phase Contrast Microscopy (PCM) Methods in accordance with the guidelines set forth in Sections 6.4 and Appendix M of EPA Document 560/5-85-024 Guidance for Controlling Asbestos-Containing Materials in Buildings and with the exception that only one (1) air sample be taken for each Work Area and that 1,200 liters of air is required.

3.5.6.1.4.3 Isolated and Nonprepared Work Area: The Observation Service shall take a minimum of one (1) nonaggressive air sample of 1,200 liters, upon completion of each Work Area. The "Clearance" sample will be analyzed by PCM Method No. 7400 and determined "clean" before removal of isolation material from the Work Area.

3.5.6.1.4.4 If the tests show that the Work Area has not been decontaminated, the Contractor shall repeat the cleaning and/or encapsulation application until the Work Area is in compliance. For the purpose of this Project, decontamination for clearance testing by PCM Method No. 7400 shall be defined as air samples showing less than 0.01 fibers/cc. If the tests show that the Work Area has not been decontaminated, the Contractor shall repeat the cleaning and/or encapsulation application until the Work Area is in compliance.

NOTE: Air sample volumes for Area and Clearance Monitoring (PCM analysis) may be adjusted in accordance with the quality assurance data of the microscopist and project conditions. Inside the Work Area, sample volumes shall, when project conditions allow, be sufficient to yield between 100 and 1,300 fibers per square millimeter on the membrane filter.

3.5.7 REIMBURSEMENT OF COSTS OF THE OWNER OR THE OBSERVATION SERVICE

3.5.7.1 In the event that reviews and/or Clearance Testing by the Observation Service or regulatory agencies shows that the Work Area or any portion of the Work Area is not decontaminated or if the Work is not in conformance with the Contract Documents, the Owner, Observation Service and his Consultants will record all time, tests and project related expenses expended to monitor the Work until the work is in compliance. All time, and expenses recorded by the Owner, Observation Service and his Consultants to monitor the above work, and all time, tests and project related expenses incurred by the Owner and Observation Service and his Consultants outside the Project Work Days, Work Hours or Contract Time shall, at the discretion of the Owner, be paid for by the Contractor. The Contractor, promptly upon receipt of the billing from the Owner, or the Observation Service, shall reimburse the Owner at the normal billing rate of the Owner or the Observation Service and his Consultants, or the Owner is authorized to withhold funds from the Contract Sum, for all time spent by the Owner, Observation Service and his Consultants for reviews, testing, and other project related expenses when any of the above conditions occur.

3.5.8 STOPPING THE WORK

3.5.8.1 If, at any time, the Observation Service decides that Work Practices are violating pertinent regulations, these Specifications or, in his opinion, endangering Workers or the public, he will immediately notify the Contractor (followed up in writing) that operations shall cease until corrective action is taken, and the Contractor shall take such corrective action before proceeding with the Work. Loss or Damages due to a Stop Work Order shall be borne by the Contractor.

3.5.9 CLEAN UP

3.5.9.1 Contractor shall maintain a clean Project site during and upon completion of the Project. Cleaning shall be in accordance with the General Conditions.

4. LEAD ABATEMENT AND LEAD RELATED CONSTRUCTION WORK

4.1. GENERAL SUMMARY

4.1.1 SUMMARY

4.1.1.1 Section Includes:

4.1.1.1.1 Abatement, Lead Related Construction Work of Lead-Based Glaze Coatings.

4.1.1.1.2 Removal and transportation and disposal of Lead-Based components.

4.1.1.1.3 Removal and disposal of Lead-Glazed Tubs as whole components.

4.1.1.2 Regulatory Requirements shall include, but not be limited to:

4.1.1.2.1 Cal/OSHA Title 8, California Code of Regulations (CCR)

4.1.1.2.2 California Air Resources Board Ambient Air Quality Standard, Title 24 CCR

4.1.1.2.3 California Department of Public Health, Title 17, CCR – Form 8551

4.1.1.2.4 Cal/EPA, Title 22 CCR Disposal and Transportation of Hazardous Waste

4.1.1.2.5 California Labor Code, Division 5, Part 1, as it pertains to safety in employment and with the applicable provisions of the Title 8, CCR as it pertains to Occupational Safety and Health in the work place.

4.1.1.2.6 HUD – Title X, Residential Lead-Based Paint Hazard Reduction Act of 1992

4.1.1.2.7 HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards as published in the 2nd Edition July 2012

4.1.2 DESCRIPTION

4.1.2.1 Work included: Contractor shall furnish all labor, materials, service, permits, insurance (specifically covering the handling and transportation of Lead Containing Materials and Lead Containing Waste Materials), and equipment which is specified, shown, or reasonably implied for the following Lead Abatement activities:

4.1.2.1.1 The removal and disposal of Lead-Based Paint Components and Lead-Based Glaze Coating Ceramic Wall Tile with no replacement of removed materials per Cal/EPA Title 22 CCR disposal and transportation of hazardous materials. Following are the areas that will need to be abated:

4.1.2.1.1.1 Ceramic Tile Kitchen and Restroom

4.1.2.1.2 Submit unit pricing for the removal and disposal of any other additional Lead-Based or Lead-Containing materials as may be required by the owner of the property.

NOTE: *It is the responsibility of the abatement Contractor to verify all quantities and conditions in the field prior to bidding.

4.1.3 SECTION DEFINITIONS AND ACRONYMS

4.1.3.1 AAS - Atomic Absorption Spectrophotometry used for lead paint chip and dust wipe sample analysis.

4.1.3.2 Abatement – Any set of measures designed to reduce or eliminate lead hazards or Lead Based Paint for public and residential buildings, but does not include containment or cleaning. Procedures to reduce or eliminate lead hazards or lead-based paint for public and residential buildings.

4.1.3.3 Action Level – Means the Action Level as defined in Title 8, California Code of Regulations, Section 1532.1.

4.1.3.4 ANSI – American National Standards Institute

4.1.3.5 ASTM – American Society for Testing and Materials

4.1.3.6 Building ID number or code – A six digit alphanumeric identification code assigned to each building on an Owner site, also referred to as the insurance code, ID number or similar terms.

4.1.3.7 Certificate – Means the document issued by CDPH to an individual meeting the certification requirements as described in CCR Title 17, Sections 35083, 35085, 35087, 35089, or 35091.

4.1.3.8 Clean Room – An uncontaminated area or room which is a part of the worker Decontamination Enclosure System with provisions for storage of worker's street clothes and clean protective equipment.

4.1.3.9 Clearance Inspection – Means visual examination and, as applicable, collection of environmental samples upon completion of the Work of this section.

4.1.3.10 Component – Means a structural element or fixture, including but not limited to, walls, floors, ceilings, doors, window molding, trim, trestles, tanks, stairs, railings, cabinets, gutters, or downspouts.

4.1.3.11 Curtained doorway – A device to allow ingress and egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. Other effective designs may be submitted for review.

4.1.3.12 Decontamination – The process of eliminating lead contamination from building surfaces, and property by cloths, mops, or other utensils dampened with water and disposed of as lead contaminated waste.

4.1.3.13 Decontamination Enclosure System Unit – A minimum a two-stage Decontamination unit consisting of a compartment for Decontamination, and a Clean Room. Unless otherwise specified, it shall be adjacent to the Abatement area.

4.1.3.14 Demolition – The wrecking or taking out of any load supporting structural member of a facility together with any related handling operations. The wrecking or removal of a facility, in whole or in part, along with any related debris handling operations.

4.1.3.15 Deteriorated Lead Based Paint – Means Lead Based Paint or a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separating from the substrate to which it is applied to.

4.1.3.16 CDPH – California Department of Public Health

4.1.3.17 CDPH-Approved Course – Means any lead-related construction course that satisfies the requirements specified in CCR Title 17, Sections 35056, 35061, 35066, or 35067 as determined by CDPHS pursuant to Sections 35076 and 35078.

4.1.3.18 DOSH – California Division of Occupational Safety & Health or Cal/OSHA.

4.1.3.19 DOT – Department of Transportation

4.1.3.20 DTSC – California Department of Toxic Substances Control

4.1.3.21 Encapsulating Material – Are coatings or rigid materials adhesively applied to Lead Based Painted surfaces in the Encapsulation process.

4.1.3.22 Encapsulation – The application of an Encapsulating Material to Lead Based Paint to provide a barrier between the Lead Based Paint and the environment.

4.1.3.23 Enclosure – A rigid durable barrier mechanically attached to building Component, with all edges and seams sealed with caulk or other sealant.

4.1.3.24 Fixed Object – A piece of equipment, furniture, or improvement in the Work Area, which cannot be removed from the Work Area.

4.1.3.25 Hazardous Waste – Means any waste stream determined by an Owner approved laboratory to exceed the regulatory thresholds for lead hazardous waste.

4.1.3.26 HEPA Filter – Means a filtering system capable of trapping and retaining at least 99.97% of all mono-dispersed particles 0.3 micrometers in diameter or larger.

4.1.3.27 HEPA Vacuum – A vacuum system furnished with HEPA filtration.

4.1.3.28 HUD – United States Department of Housing and Urban Development

4.1.3.29 HVAC – Heating, Ventilation, and Air Conditioning system.

4.1.3.30 ICP-AES – Means Inductively Coupled Plasma-Atomic Emission Spectroscopy used for heavy metal analysis, including lead.

4.1.3.31 Lead Based Paint – Means paint or other surface coatings that contain an amount of lead equal to or greater than 0.7 milligrams per square centimeter (0.7 mg/cm2) or equal to or greater than 0.5% by weight.

4.1.3.32 Lead Containing Paint – Means paint or other surface coatings that contain lead in an amount equal to or greater than 0.06% lead dry weight (600 ppm) but does not meet the definition of Lead Based Paint. In the absence of paint chip or surface coating bulk sample results, any surface coating shall be assumed to be above 0.06% lead dry weight (600 ppm) until surface coating samples are collected and analyzed that indicate otherwise. Lead concentration shall be determined by a method that has an accuracy of not less than plus or minus 25% at 0.06% lead dry weight, to a confidence level of 95%.

4.1.3.33 Lead Contaminated Dust – Means dust that contains an amount of lead equal to, or greater than, forty micrograms per square foot ($40\mu g/ft^2$) on floors, two hundred and fifty micrograms per square foot ($250\mu g/ft^2$) on interior window sills, and four hundred micrograms per square foot ($400\mu g/ft^2$) on exterior floor and exterior horizontal window surfaces.

4.1.3.34 Lead Contaminated Soil – Means bare soil that contains an amount of lead equal to, or greater than, four hundred parts per million (400 ppm) in children's play areas or one thousand parts per million (1000 ppm) in all other areas.

4.1.3.35 Lead Hazard – Means deteriorated Lead Based Paint, Lead Contaminated Dust, Lead Contaminated Soil, the disturbance of Lead Based Paint or Presumed Lead Based Paint without containment, or any other operation that may result in persistent and quantifiable lead exposure.

4.1.3.36 Lead Inspection – Means a surface by surface investigation to determine the presence of Lead Based Paint as described in Chapter 7: Lead Based Paint Inspection, " Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing," U.S. Department of Housing and Urban Development, 1997 Revision.

4.1.3.37 Lead Related Construction Work – Means any construction, alteration, painting, Demolition, salvage, Renovation, repair, or maintenance of any residential or public building, including preparation and cleanup that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead.

4.1.3.38 Lead Safe Schools Program – Means the training program for lead safe working practices as developed by the Labor Occupational Health Program at U.C. Berkley.

4.1.3.39 Location Code – Refers to a unique four digit numeric code assigned by the Owner to each of its Project sites.

4.1.3.40 Member – A Component part of a structure complete in itself.

4.1.3.41 Movable Object – A piece of portable equipment or furniture in the Work Area, which can be removed from the Work Area.

4.1.3.42 NESHAP – The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 50.12)

4.1.3.43 NIOSH – The National Institute for Occupational Safety and Health

4.1.3.44 Owner Consultant (OC) – Refers to the firm, company or individual designated by the Owner.

4.1.3.45 Painting Contract – For purposes of this section, a painting contract is a Contract with the Owner to perform painting on existing facilities where Lead Based Paint, Lead Containing Paint, Presumed Lead Based or Presumed Lead Containing Paint will be disturbed or abated.

4.1.3.46 P.E.L. – Means permissible exposure limits as defined in Title 8, California Code of Regulations, Section 1532.1.

4.1.3.47 Plasticize – To cover floors, walls, and equipment with plastic sheeting as specified herein.

4.1.3.48 Portable Mechanical Ventilation System – A portable exhaust system furnished with HEPA filtration and capable of providing a constant air flow into regulated Work Area from adjacent areas and exhausted outside the regulated area.

4.1.3.49 Presumed Lead Based Paint – Means paint or surface coating affixed to a Component in or on a structure, excluding paint or surface coating affixed to a Component in or on a residential dwelling constructed on or after January 1, 1979, or a school constructed on or after January 1, 1993.

4.1.3.50 Removal – Means all operations where Lead Based Paint is removed or stripped from structures or substrates including demolition.

4.1.3.51 Renovation – Means the modifying of any existing structure, facility, or portion thereof.

4.1.3.52 Replacement – Means Removal of an entire building Component coated with Lead Based Paint and replacing it with a lead free Component.

4.1.3.53 SCAQMD – South Coast Air Quality Management District

4.1.3.54 STLC – Means Soluble Threshold Limit Concentration used in the State of California in conjunction with TTLC to determine lead hazardous waste limits. If the STLC result is equal to or exceeds 5 mg/L the waste is deemed to be hazardous.

4.1.3.55 Surfactant - A chemical wetting agent added to water.

4.1.3.56 TCLP – Means Toxicity Characteristic Leaching Procedure used to determine the federal Resources Conservation Recovery Act (RCRA) lead hazardous waste limits. If the results equal or exceed 5 mg/L the waste is deemed to be hazardous.

4.1.3.57 TTLC – Means Total Threshold Limit Concentration used in the State of California in conjunction with STLC to determine lead hazardous waste limits. If the results are equal to or exceeds 1000 mg/kg, the waste is deemed to be hazardous.

4.1.3.58 Visible Emissions – Any emissions from a known or suspected lead-containing material that is visually discernible.

4.1.3.59 Wet Cleaning – The process of eliminating lead contamination from building surfaces and/or objects by cloths, mops, or other utensils dampened with amended water and afterwards being disposed of as hazardous waste.

4.1.3.60 Work Area – Means an area where known or Presumed Lead Based Paint is disturbed or Abatement is conducted.

4.1.3.61 X-Ray Fluorescence (XRF) Analyzer – Means a direct reading instrument that determines the lead content of the surface coatings in milligrams per square centimeter (mg/cm2) using the principle of x-ray fluorescence.

4.1.4 POLICIES AND PROCEDURES

4.1.4.1 The Owner has a zero-tolerance policy for uncontrolled lead releases during Lead Related Construction Work, Lead Containing Paint disturbance, or Abatement activities. A lead release requiring an emergency response is any disturbance resulting in the uncontrolled release of lead containing materials. Upon observation of any visual emissions, immediately stop the Work, vacate the Work Area, and provide written notification to the Owner Consultant.

4.1.4.2 Pre-qualified Abatement Subcontractors are not permitted to subcontract any Abatement Work to a lower tier Subcontractor without the prior written approval of the Owner.

4.1.4.3 Do not furnish a reduced pressurization and filtration system in violation of, or in infringement upon, any patent.

4.1.4.4 Owner Consultant shall provide oversight for all Projects that have the potential to disturb Lead-Based Glaze Coatings or Paint. Prior to the commencement of such Work, provide written notification to the Owner Consultant.

4.1.5 COORDINATION

4.1.5.1 Coordinate the Work of this section directly with the Owner and/or Owner Consultant.

4.1.6 SITE SECURITY

4.1.6.1 The Work Area is restricted to authorized, trained, and protected personnel. A list of authorized personnel shall be established and posted at the entrance of the Work Area by the Owner Consultant prior to commencement of the Work.

4.1.6.2 Report to the Owner Consultant any unauthorized entry into the Work Area. Following notification, a written report of the incident shall be provided to the Owner Consultant.

4.1.6.3 A logbook shall be maintained at the entrance of the Work Area. All persons entering the Work Area shall record name, company affiliation, time in, and time out for each entry and exit.

4.1.6.4 Access to the Abatement Work Area shall be through the assigned work area perimeter entrance for each specified area. All other means of access shall be blocked or locked so as to prevent entry to or exit from the Work Area. Emergency exits shall be operable from inside the Work Area.

4.1.6.5 Maintain Work Area security during Abatement and/or Lead Related Construction Work.

4.1.6.6 Remove all barriers upon the completion of the Work of this section.

4.1.7 EMERGENCY PLANNING

4.1.7.1 Emergency planning and procedures shall be developed, submitted, reviewed, and agreed to by the Owner Consultant prior to the commencement of lead-related construction and/or Abatement Work.

4.1.7.2 Emergency procedures shall be provided in the written languages understood by all employees working on the Project and shall be prominently posted at the entrance of the Decontamination Enclosure System. Prior to entering the Work Area, all parties must read and sign these procedures to acknowledge receipt and understanding of the work area layout, location of emergency exits, and emergency procedures.

4.1.7.3 Emergency planning shall consider the effects of fire, explosion, toxic atmospheres, electrical

hazards, slips, trips and falls, confined spaces, and heat related injury. Develop and provide written procedures and training to all employees.

4.1.7.4 Employees shall be trained in evacuation procedures in the event of workplace emergencies.

4.1.7.5 In the event of non-life threatening situations requiring medical treatment, injured or otherwise incapacitated employees shall decontaminate following normal procedures with assistance from fellow workers if necessary, before exiting the Work Area.

4.1.7.6 In the event of life threatening injury or illness requiring immediate medical treatment, worker Decontamination shall be given minimum priority. Provide all measures to stabilize the injured worker, remove them from the Work Area and secure proper medical treatment.

4.1.7.7 Telephone numbers of all emergency response personnel shall be prominently posted at the entrance of the work area perimeter along with the location of the nearest telephone. In addition to the 911 emergency number, post the address and telephone number of the nearest emergency medical services provider.

4.1.7.8 Provide at least one (1) employee on the Project site at all times during progress of the Work that is trained and certified in first aid and cardiopulmonary resuscitation (CPR). This employee shall be identified by name and proof of training shall be provided to the Owner Consultant prior to the commencement of the Work of this section.

4.1.7.9 Provide at least one (1) 4A/60BC dry chemical extinguisher in the Decontamination compartment. All workers shall be trained in the proper operation of fire extinguishers.

4.1.7.10 Emergency exits shall be provided and clearly marked with arrows or other clearly visible markings to permit easy identification from anywhere within the work area. Exits shall be secured to prevent access from uncontaminated areas while still permitting emergency egress.

4.1.8 LICENSING

4.1.8.1 The Work of this section shall be performed by an entity duly licensed in the State of California in accordance with the provisions of Chapter 9 of Division 3 of the Business and Professions Code, as amended.

4.1.9 QUALIFICATIONS

4.1.9.1 Before any workers perform abatement work or work of this section where the P.E.L. is exceeded, submit proof of CDPH training and certification. No Work shall be performed until the Owner Consultant has reviewed and approved CDPH training and certifications.

4.1.9.2 All workers shall be in personal possession of a wallet CPDH certification card at all times while they are performing Abatement Work on the Project site.

4.1.9.3 All workers performing lead Abatement, Lead Related Construction Work, or disturbance of Lead Containing Paint where the exposure level exceeds the P.E.L. shall possess current CPDH certification and at least one CPDH Certified supervisor shall be assigned to the project as required by Title 17, CCR subsection 36100 AND ON-SITE AT ALL TIMES DURING THE ENTIRE ABATEMENT PROCESS.

4.1.10 TRAINING

4.1.10.1 Lead Related Construction Work shall be performed by personnel with the following training, as applicable:

4.1.10.1.1 The Lead Related Construction Work, specified herein, shall be performed by individuals trained and qualified in the techniques of lead-related construction, handling, disposal of lead-based and Lead Containing Paint, and the subsequent cleaning of contaminated areas. These individuals must comply with all applicable Federal, State, and Local regulations including, but not limited to, CPDH accredited training and certification, and must be capable of and willing to perform the Work of this section.

4.1.10.1.2 Training specific to the performance of Lead Related Construction Work shall be provided to employees prior to performing the Work of this section.

4.1.11 EXPOSURE ASSESSMENT

4.1.11.1 Disturbance of Lead Containing Paint, as defined in this Specification, disturbed by tasks not included in Title 8, CCR Section 1532.1, Subsection (d)(2), shall require worker-exposure monitoring upon initiation of the Work. The workers performing these tasks shall be trained in accordance with the Hazard Communications Standard, Section 5194, including but not limited to, the requirements concerning warning signs and labels, Material Safety Data Sheets (MSDS), and employee information and training.

4.1.11.2 Provide an exposure assessment where the workers are performing Lead Related Construction Work. If historical data, collected within the 12 months prior to the work performed, indicates worker exposure is below the P.E.L., and the Work being performed closely resembles the process, type of material, control methods, work practices, and environmental conditions, additional exposure assessment is not required.

4.1.11.3 For Lead Related Construction Work where there is objective data or an exposure assessment demonstrating that the Lead Based Paint, or a specific process, operation or activity other than Abatement involving lead cannot result in employee exposure to lead at or above the P.E.L. during the specific process or handling, employees trained as required by Title 8, CCR Section 1532.1, including the training topics of the Lead-Safe Schools Program, may perform the Lead Related Construction Work.

4.1.11.4 Where Work being performed indicates an exposure above the Action Level, each employee is required to have current blood lead level and zinc protoporphyrin testing, medical clearance for negative pressure respirator use, and respirator fit testing.

4.1.11.5 If there is no objective data or a negative exposure assessment fulfilling the above requirements, all Lead Related Construction Work identified as a trigger task by Title 8, CCR 1532.1 shall be performed by workers who have received training as required by Title 8 CCR, Section 1532.1. This training shall, at a minimum, include the training topics of the Lead Safe Schools Program. An exposure assessment is required to be performed upon initiation of Work.

4.1.11.6 The required exposure assessment shall not exceed 12 months from the date the samples were collected to the date the Lead Related Construction Work or disturbance of Lead Containing Paint is performed.

4.1.11.7 The submission and review by the Owner Consultant of the objective data or exposure assessment is required prior to performing Lead Related Construction Work.

4.1.12 SUBMITTALS

4.1.12.1 Prior to performing the Work of this section, submit the following procedures to the Owner Consultant:

4.1.12.1.1 An Abatement plan including, but not limited to:

4.1.12.1.1.1 A detailed written description of the measures and management procedures, including the containment that will be utilized during Abatement to prevent exposure to lead hazards. Shop Drawings shall indicate the containment locations.

4.1.12.1.1.2 A detailed written description of the Abatement, including methods of Abatement, locations of rooms and building Component where Abatement is planned.

4.1.12.1.2 Required air monitoring procedures (Cal/OSHA mandatory and SCAQMD permits for air filtering equipment).

4.1.12.1.3 Decontamination procedures for personnel, work area, and equipment.

4.1.12.1.4 Procedures for handling and disposing of waste materials, including disposal facility.

4.1.12.1.5 Provide the procedures to be used for capturing debris while disturbing overhead materials. This procedure requires approval by the Owner Consultant before proceeding with the Work.

4.1.12.1.6 Procedures for final Decontamination and cleanup.

4.1.12.1.7 Procedures for dealing with heat stress during Abatement.

4.1.12.1.8 Emergency procedures during Abatement.

4.1.12.2 Prior to performing Abatement Work of this section, submit the following Shop Drawings to the Owner Consultant:

4.1.12.2.1 Preparation of Work Area.

4.1.12.2.2 Layout and construction of Decontamination Enclosure System and barriers for isolation of the Work Area described in this Specification and required by applicable regulations.

4.1.12.3 Prior to performing the Work of this section, submit the following Product Data to the Owner Consultant:

4.1.12.3.1 Product Data relative to personal protective equipment including respiratory protection and protective clothing.

4.1.12.3.2 Material safety data sheets and technical specifications for proposed materials.

4.1.12.4 Prior to performing the Work of this section, submit the following notifications to the Owner Consultant:

4.1.12.4.1 Evidence of notification to Cal/OSHA as required by Title 8 CCR, Section 1532.1, where applicable.

4.1.12.4.2 Notify CPDH no less than five days in advance of Abatement by submitting an Abatement of Lead Hazard Notification, CPDH Form 8551.

4.1.12.5 Prior to performing the Work of this section, submit the following documentation to the Owner Consultant:

4.1.12.5.1 A list of employees who will participate in the Project, including delineation of experience, training, and assigned responsibilities during the Project.

4.1.12.5.2 Submit proof satisfactory to the Owner Consultant that required permits, site location, and arrangements for transport and disposal of lead containing waste has been performed in accordance with Federal, State, and local regulations.

4.1.12.5.3 Submit proof of training for each worker who will perform Abatement or Lead Related Construction Work.

4.1.12.5.4 Submit manufacturer's certification that HEPA Vacuums, air filtration units and other local exhaust ventilation equipment conform to ANSI Z9.2-79, as applicable.

4.1.12.5.5 Provide the current SCAQMD permit for each HEPA Vacuum and Portable Mechanical Ventilation System before they are brought onto the Project site.

4.1.12.5.6 Where biological monitoring is required, submit test result documentation verifying all employees have completed blood lead level and zinc protoporphyrin tests in accordance with Title 8 CCR, Section 1532.1.

4.1.12.6 Prior to performing the Work of this section, submit the following schedule to the Owner Consultant:

4.1.12.6.1 An intended sequence of Work and construction schedule. Coordinate both the sequence and durations with the Owner.

4.1.12.7 During the performance of the Work of this section, submit the following documentation to the Owner Consultant:

4.1.12.7.1 Submit documentation from a physician certifying that all employees who wear a negative pressure respirator are medically cleared to do so without suffering adverse health effects as required by DOSH regulations. The certification shall state that the employee or agent may perform Lead Related Construction Work and wear a negative pressure respirator without restrictions. Provide information to the examining physician about unusual conditions in the workplace environment that may impact the employee's ability to perform Work activities.

4.1.12.7.2 During the performance of the Work of this section, and before additional supervisors or workers are permitted to perform the Work of this section, submit proof of CPDH training and certification, where applicable. No additional supervisors or workers are permitted upon the Project site until the Owner Consultant has approved the DHS training and certifications, when required.

4.1.12.7.3 Submit weekly job progress reports detailing Abatement and/or Lead Related

Construction Work activities for Projects that will exceed thirty (30) days. Include review of progress with respect to previously established Milestones and schedules, major problems and action taken, injury reports, equipment breakdown, and air and/or wipe sampling results.

4.1.12.7.4 Within five (5) workdays of transport and/or disposal, submit copies of all transport manifests, disposal receipts, analytical data, and weight certificates for all hazardous waste removed from the Work Area during the Lead Related Construction Work and/or Abatement Work. Weight certificates shall indicate by pounds the net weight of waste disposed of from the Project site as indicated on the associated manifest.

4.1.12.7.5 Submit results of air and/or wipe sampling data (as applicable) collected during the course of the Abatement and/or Lead Related Construction Work including DOSH compliance air monitoring results.

4.2 PRODUCTS

4.2.1 MATERIALS AND EQUIPMENT

4.2.1.1 Materials:

4.2.1.1.1 Deliver all materials in the original sealed packages, containers, or bundles bearing the name of the manufacturer and brand name.

4.2.1.1.2 Store all materials, subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient enough to prevent damage or contamination. Replacement materials shall be stored outside of the Work Area until area is cleared for normal occupancy.

4.2.1.1.3 Damaged, deteriorating, or previously used materials shall not be furnished and shall be removed from the Project site and legally disposed of.

4.2.1.1.4 A sufficient supply of disposable mops, rags, and sponges for Work Area Decontamination shall be provided.

4.2.1.1.5 Unless otherwise specified, the Owner will provide water for construction purposes. Connect to existing system as required.

4.2.1.1.6 All products brought onto the Project site shall be accompanied by their respective Material Safety Data Sheet, which shall be maintained on the Project site.

4.2.1.1.7 All plastic, polyethylene sheeting or Visqueen shall be a fire retardant type. Provide documentation from the manufacturer verifying compliance with this requirement.

4.2.1.1.8 Polyethylene sheeting furnished for the Decontamination Enclosure System shall be opaque white or black in color and shall be a minimum of 6-mil thick.

4.2.1.1.9 Surfactant (wetting agent) shall be a material that, when tested, demonstrates a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM method D1331-56-"Surface and Interfacial Tension of Solutions of Surface Active Agents." Where Work Area temperature may cause freezing of the Amended Water solution, the addition of approved antifreeze in a manufacturer recommended amount is permitted.

4.2.1.2 Equipment:

4.2.1.2.1 Disposal bags shall be of 6-mil polyethylene, pre-printed with labels as required by applicable Cal/OSHA and DOT requirements.

4.2.1.2.2 Provide labels as per DOT requirements for disposal containers.

4.2.1.2.3 Provide warning signs as required by Cal/OSHA.

4.2.1.2.4 Disposal containers shall meet requirements of Title 22, CCR.

4.2.1.2.5 Provide a sufficient supply of scaffolds, ladders, lifts, and hand tools, as needed to complete the Work.

4.2.1.2.6 Provide sprayers with pumps capable of providing amended water in sufficient quantity to adequately wet the material to be abated or for Lead Related Construction Work.

4.2.1.2.7 Provide a sufficient supply of HEPA filtered vacuums to maintain a clean environment in compliance with this section.

4.2.1.2.8 When an enclosure requiring negative pressure is specified, a sufficient quantity of air-filtration ventilation units furnished with HEPA filtration and operated in accordance with ANSI Z9.2-79 and EPA guidance documents shall be utilized to provide one workplace air change every 15 minutes and creating a pressure differential of -0.02 inches of water everywhere within the enclosure when compared to the area outside the enclosure. A log documenting the filter change history of each unit shall be required before use, and any unit without this log shall have all filters changed and the unit decontaminated.

4.2.1.2.9 When rental equipment is to be used in Abatement areas or to transport lead contaminated waste, a written notification concerning the intended use of the rental equipment shall be provided to the rental agency with a copy submitted to the Owner.

4.2.1.2.10 When performing chemical Removal, provide portable eyewash station(s) that meet ANSI standards and are accessible to workers within 10 seconds.

4.2.1.2.11 Additional safety equipment, as necessary, shall be provided to all workers and authorized visitors.

4.2.1.2.12 All equipment delivered to the Project site shall be free of all debris suspect of containing lead. No equipment with suspect debris in or on it shall be permitted on Owner properties and/or the Project site.

4.2.1.2.13 Lighting shall be provided in an amount sufficient to illuminate the Work Area for the purpose of safe visual working conditions and to permit examination of all surfaces where Work is performed.

4.2.2 EMPLOYEE PERSONAL PROTECTIVE EQUIPMENT

4.2.2.1 Respiratory Protection:

4.2.2.1.1 Submit NIOSH approvals for all respiratory protective devices utilized on the Project site. Include manufacturer certification of HEPA filtration capabilities for all cartridges and filters. Filter cartridges shall be furnished with the NIOSH P-100 designation.

4.2.2.1.2 Provide respiratory protection to all employees in compliance with CCR Title 8, Sections 1532.1 and 5144, as determined by the employee exposure assessment.

4.2.2.1.3 In the absence of an exposure assessment, base respiratory protection on the requirements of Title 8, CCR Section 1532.1, specifically subsection (d).

4.2.2.1.4 In addition to P-100 filters, provide the appropriate respirator filter cartridges for exposure to other airborne contaminants generated during the Abatement process.

4.2.2.2 Fit Testing:

4.2.2.2.1 Perform fit testing in accordance with Title 8 CCR, Section 5144.

4.2.2.2.2 Submit documentation of respirator fit testing for all individuals entering the Work Area.

4.2.2.2.3 Maintain and submit to the Owner a copy of the written respiratory protection program.

4.2.2.3 Personal Protective Clothing and Equipment:

4.2.2.3.1 Provide eye protection to employees sufficient to protect employees from debris during Work progress when full-face respirators are not being utilized.

4.2.2.3.2 Provide and require the use of eye protection when employees are working with a material that may splash or fragment, as specified by the Material Safety Data Sheet for a given product, or as required by Title 8, CCR.

4.2.2.3.3 Spectacle kits and eyeglasses must be provided for employees who wear glasses and who must wear full-face piece respirators. Provide respirators that have been tested and approved by the National Institute of Occupational Safety and Health for use in lead-contaminated atmospheres.

4.2.2.3.4 Provide full-body disposable protective clothing, including head, body, and foot coverings to all workers and authorized visitors who enter the Work Area, in sizes adequate to accommodate movement without tearing. A new suit shall be provided and donned for each separate entry.

4.2.2.3.5 If washable clothing is to be worn underneath disposable protective clothing, it shall be provided to all Abatement workers.

4.2.2.3.6 Provide a clean staging area for workers and others to store street clothes and personal protective equipment.

4.2.2.3.7 Disposal suits shall be collected in an appropriate disposal container at the entrance of the Abatement Work Area.

4.2.2.3.8 Abatement workers are required to wear nonskid footwear sufficient to protect them from workplace hazards. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

4.2.2.3.9 Hand protection shall be provided, and workers shall be required to use lotion sufficient quantities to protect the worker when chemicals or other physical hazards exist.

4.2.2.3.10 As required by the Work site and applicable safety regulations, provide head protection and require the use thereof.

4.2.2.3.11 All worker protection equipment shall be ANSI approved.

4.3 EXECUTION

4.3.1 LEAD RELATED CONSTRUCTION WORK

4.3.1.1 Work Area Preparation and Work Practices:

4.3.1.1.1 Where exposure monitoring indicates Worker exposure is below the P.E.L. comply with the requirements of this section and the “Monitoring” section of this Specification.

4.3.1.1.2 All disturbance of lead containing materials shall be performed using wet methods.

4.3.1.1.3 Work requiring overhead disturbances shall require a means of capturing debris, thus preventing an uncontrolled release on the worker or the surfaces below.

4.3.1.1.4 For disturbances utilizing local exhaust dust collection devices the equipment shall be designed and furnished with a HEPA filtered vacuum attachment approved by the manufacturer.

4.3.1.1.5 Where Components are to be removed, all loose Lead Based Paint and Lead Containing Paint shall be removed by manual means using wet methods and Stabilized prior to removal.

4.3.1.1.6 Where a Component is attached and painted onto another surface and the Component is to be removed from the adjoining surface the paint shall be cut with a razor knife to reduce the potential of paint chip debris during Component removal.

4.3.1.1.7 If a Component being removed will be disposed of rather than reinstalled, manually cut the Component into manageable sections for disposal using wet methods or mechanically cut using a manufactured approved HEPA filtered local exhaust dust collector.

4.3.1.1.8 If a Component is to be reused, loose paint or rough edges may require scraping or sanding. All scraping or sanding must be performed manually using wet methods or mechanically with a manufactured approved HEPA filtered local exhaust attachment.

4.3.1.2 Clean Up Procedures:

4.3.1.2.1 During the entire process of Lead Related Construction Work, clean all debris generated using wet methods and/or HEPA Vacuuming.

4.3.1.2.2 At the completion of the Lead Related Construction Work, clean all surfaces within the impacted Work Area.

4.3.1.2.3 When HEPA filtered Vacuums are utilized, vacuum from the area of impact to the outer perimeter of the polyethylene sheeting to remove all visible debris. If vacuuming cannot remove all visible debris, wet wiping will also be required.

4.3.1.2.4 When wet wiping the Work Area, wipe from the area of impact to the outer perimeter of the polyethylene sheeting to remove all visible debris.

4.3.1.2.5 All tools and equipment utilized in the Work Area shall be thoroughly wet wiped to remove visible debris.

4.3.2 ABATEMENT

4.3.2.1 Work Area Preparation:

4.3.2.1.1 Clean areas to be isolated by HEPA Vacuum prior to installation of polyethylene sheeting.

4.3.2.1.2 Install a minimum of one (1) layer of 6 mil thick polyethylene sheets on floors, fastened by waterproof tape and other means as necessary to secure the sheeting.

4.3.2.1.3 The covering on windows, exterior doors, and vents shall be installed from the inside to facilitate Work on them from the outside.

4.3.2.2 Decontamination Enclosure System:

4.3.2.2.1 At a minimum a two-stage Decontamination Enclosure System consisting of a compartment for Decontamination and a Clean Room shall be constructed and used.

4.3.2.2.2 Unless otherwise specified, the Decontamination Enclosure System shall be adjacent to the Abatement area.

4.3.2.2.3 Other enclosure methods may be used if submitted and approved by the Owner Consultant.

4.3.2.3 Removal of all Lead-Based Glaze Coating Wall Tile:

4.3.2.3.1 All manual or mechanical removal will be performed using wet methods.

4.3.2.3.2 Machine Chippers can only be used within a negative pressure enclosure system.

4.3.2.3.3 Protect adjacent surfaces from damage from machine chipping. Repair and/or replace all damaged surfaces.

4.3.2.4 ALTERNATE PROCEDURES

4.3.2.4.1 If specified procedures cannot be utilized, a request must be made in writing to the Owner Consultant establishing details of the problem encountered and recommended alternatives.

4.3.2.4.2 Alternate procedures shall provide equivalent or greater protection than procedures that they replace.

4.3.2.4.3 Prior to implementation, all alternative procedures shall be submitted and approved in writing by the Owner Consultant.

4.3.2.5 CLEAN-UP PROCEDURES

4.3.2.5.1 During the entire process of the Work of this section, perform continuous cleaning of all debris generated using wet methods and/or HEPA filtered vacuuming.

4.3.2.5.2 At the completion of the Work of this section, clean all surfaces within the impacted Work Area, including but not limited to, all tools, equipment, and polyethylene sheeting to remove visible debris from the Work Area.

4.3.2.5.3 All tools and equipment utilized in the Work Area shall be thoroughly cleaned. All non-electrical tools and equipment shall be cleaned monthly and before Removal from the Work Area by HEPA vacuuming and washing using a lead specific detergent or other suitable cleaning agent.

4.3.2.5.4 Electrical tools and equipment shall be HEPA vacuumed and cleaned by wet wiping limiting the amount of water used to avoid electrical hazards.

4.3.2.5.5 Remove polyethylene sheeting, except for critical barriers, by folding it into itself beginning with the higher level polyethylene first.

4.3.2.5.6 Following Removal of polyethylene sheeting a final cleaning of all surfaces in the Abatement workspace shall be performed by HEPA vacuuming, wet wiping, and a final HEPA vacuuming.

4.3.2.5.7 Refer to the waste handling and transportation section of this Specification for disposal of waste generated by this process.

4.3.3 WASTE HANDLING AND TRANSPORTATION:

4.3.3.1 Characterization of Waste:

4.3.3.1.1 Until analytical results are available, all waste materials (including water) shall be treated as hazardous.

4.3.3.1.2 Characterize all waste streams as follows:

4.3.3.1.2.1 Collect a representative sample of the waste material.

4.3.3.1.2.2 For a pile of waste take one sample of a proportionate combination of Component in the pile. If a large quantity of waste is generated no less than four samples may be required.

4.3.3.1.2.3 For large wood Component, such as windows, doors, etc., a representative sample of each Component of similar characteristics, paint history, etc., shall be collected and tested. A full depth core sample, not less than one (1) inch diameter, of the Component is to be collected. The core sample shall include the substrate and paint coatings on both sides of the Component, as applicable.

4.3.3.1.3 Analysis for the waste characterization samples shall be performed as follows:

4.3.3.1.3.1 Waste generated by chemical stripping shall, in addition to the requirements for determining the solid and soluble lead concentrations, shall be tested for corrosiveness and other contaminants, as applicable, resulting from the chemical stripping process.

4.3.3.1.3.2 Analyze samples for Total Threshold Limit Concentration (TTLC):

4.3.3.1.3.2.1 If results are less than 50 mg/kg (milligrams/kilogram) the waste is not hazardous and shall be disposed as general construction waste at a class III disposal site.

4.3.3.1.3.2.2 If sample results are 50 mg/kg or greater, the waste shall be tested for Soluble Threshold Limit Concentration (STLC).

4.3.3.1.3.3 Where waste is required to be tested for STLC the following shall apply:

4.3.3.1.3.3.1 If the STLC result is less than 5 mg/L (milligrams/liter) the material shall be disposed at a Class II waste landfill. Evidence of such results of the STLC testing will be required by the landfill before waste is accepted. No further testing is required.

4.3.3.1.3.3.2 If the STLC results are 5 mg/L or greater, the waste is a California regulated waste and the material shall be tested using the federally mandated Toxicity Characterization Leaching Procedure (TCLP).

4.3.3.1.3.4 Where waste is required to be tested by TCLP the following shall apply:

4.3.3.1.3.4.1 If the TCLP is less than 5 mg/L, the waste is a California regulated hazardous solid waste (non-RCRA). This material shall be disposed in a Class I hazardous waste landfill.

4.3.3.1.3.4.2 If the TCLP is equal to or greater than 5 mg/L, the waste is a federally regulated hazardous waste solid (RCRA). The waste shall then be disposed in a Class I hazardous waste landfill.

4.3.3.1.3.5 Personal and commercial wash water with lead contamination shall be handled as follows:

4.3.3.1.3.5.1 Filter the waste water through cheesecloth, or other similar filtering media, to remove the gross debris. Separate the waste streams and characterize these in compliance with this Specification.

4.3.3.1.3.5.2 If the waste water is identified as a RCRA or California regulated hazardous waste (Non-RCRA) by STLC and TCLP, filter the waste water by power pumping it through a 20 micron pore size filter. The filtered water shall be tested as described for waste in this Specification.

4.3.3.1.3.5.3 If test results categorize the filtered water as non-hazardous, it may be disposed of in the sewer system.

4.3.3.1.3.5.4 Wastewater, filtered or otherwise, shall not be discharged in storm drains, gutters or allowed to sheet flow over the surface of the ground.

4.3.3.2 Waste Handling:

4.3.3.2.1 All waste, hazardous and non-hazardous, shall be disposed of at an authorized site in accordance with all provisions of this Specification and applicable Federal, State, and local laws.

4.3.3.2.2 Any waste determined to be hazardous, through analytical testing, shall be kept in a secured area or lockable container that is inaccessible to all persons other than authorized personnel working on the Project. All hazardous waste containers shall be labeled "Hazardous-Waste – Contains Lead" and labeled with the date waste collection commenced.

4.3.3.2.3 Hazardous waste shall not remain on the Project site beyond 90 days of the date it was generated. It shall be removed from the Project site and transported to an approved landfill before the 90 days has elapsed.

4.3.3.2.4 Once hazardous waste is removed from the Project site, ensure it is disposed of in an approved landfill within 6 days. The waste shall not be transported to another site for commingling of waste from a source other than the site of original generation. This requirement shall be documented by the proper execution of a Uniform Hazardous Waste Manifest signed by the landfill operator.

4.3.3.2.5 All hazardous and non-hazardous waste shall be kept in different containers and stored in separate locations. Commingling of waste is not permitted.

4.3.3.2.6 As the Work progresses, to prevent exceeding available storage capacity on the Project site, sealed and labeled containers of lead waste shall be removed and transported to the prearranged disposal location.

4.3.3.2.7 Containers used for hazardous waste shall meet the requirements of EPA and DOT for hazardous waste storage and transport. At a minimum, disposal packaging of Lead Based Paint fragments, dust, and debris shall be in 6-mil polyethylene (plastic) bags that are airtight and puncture resistant.

4.3.3.2.8 Any debris or residue observed on containers or surfaces outside of the Work Area resulting from clean up or disposal activities shall immediately be cleaned using HEPA filtered vacuum equipment and/or wet methods as appropriate.

4.3.3.2.9 Materials not contained in bags or other appropriate disposal containers shall not be placed in lead waste storage containers, nor shall storage containers be used for non- lead waste. To avoid damage, all packaged waste shall be placed, not thrown, into the storage containers.

4.3.3.3 Transportation of Non-Hazardous Waste:

4.3.3.3.1 All receipts from the disposal facility, trip tickets, transportation manifests, weight certificates or other documentation of disposal shall be delivered to the Owner Consultant within 48 hours of disposal. The waste manifest shall be signed by the generator, the transporter(s), and the disposal site operator each time the waste material is transferred. If a separate hauler is employed, the name, address, and signature of the transporter shall also appear on the manifest.

4.3.3.4 Transportation of Hazardous Waste:

4.3.3.4.1 All hazardous waste shall be transported by a RCRA/DOT/EPA certified hazardous waste transporter. Provide evidence that the hazardous waste transporter meets the requirements of this Specification.

4.3.3.4.2 The Work of this section includes responsibility for all actions of the hazardous waste transporter as it pertains to waste Removal and disposal related to the Work of this Specification.

4.3.3.4.3 Identify the facility to which the waste generated by this Specification will be taken. Evidence shall be provided verifying the facility is licensed/permitted to receive and handle non-hazardous lead containing waste and/or hazardous lead containing waste as applicable.

4.3.3.4.4 All waste disposed as hazardous shall be transported under a Uniform Hazardous Waste Manifest. The generator copy of this manifest shall be submitted to the Owner Consultant within five (5) days of transport.

4.3.3.4.5 All dump receipts, trip tickets, transportation manifests, weight certificates or other documentation of disposal shall be delivered to the Owner Consultant within 48 hours of disposal. The Uniform Hazardous Waste Manifest shall be signed by the generator (or designee), the transporter(s), and the disposal site operator each time the responsibility for the waste material is transferred. If a separate hauler is employed, the name, address, U.S.E.P.A. ID number and signature of the transporter shall also appear on the manifest.

4.3.3.4.6 The enclosed cargo area of trucks or containers shall be free of debris and lined with 6-mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and extend up the walls. Wall sheeting shall be overlapped and taped into place.

4.3.3.4.7 During transport, drums and other containers shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large structural Component shall be secured to prevent shifting and bags placed on top.

4.3.4 MONITORING

4.3.4.1 Project Management and Inspection:

4.3.4.1.1 Owner has the right to perform air, wipe, and visual monitoring at any time.

4.3.4.1.2 Owner shall proceed in accordance with the terms and conditions of the Contract Documents whenever the Work or protective measures are not in compliance with applicable governmental regulations, Contract requirements, and/or threatens the adjoining environment with lead contamination.

4.3.4.1.3 Where exposure monitoring indicates exposures is at or above the P.E.L., complies with Title 8, CCR Section 1532.1 (e) through (n).

4.3.4.2 Employee – Personal Air Monitoring:

4.3.4.2.1 Provide air monitoring as required by Title 8 CCR, Section 1532.1. Results shall be provided within ten working days of sampling. If the intent is to utilize such as exposure assessment documentation, and Work is to commence earlier than ten working days, submit results 24 hours in advance of the start of Work.

4.3.4.3 Clearance Inspection:

4.3.4.3.1 Clearance Inspection for Lead Related Construction Work shall include:

4.3.4.3.1.1 A visual inspection of the Work Area by the Owner Consultant prior to occupancy for normal activity.

4.3.4.3.1.2 Do not remove barriers designating a regulated Work Area until a written release from the Owner Consultant is provided.

4.3.4.3.1.3 The Owner Consultant has the right to collect wipe samples as part of the Clearance Inspection.

4.3.4.3.2 Clearance Inspection for Abatement shall include:

4.3.4.3.2.1 A visual inspection of the Work Area by the Owner Consultant prior to collection of environmental samples (dust, wipe, and/or soil samples)

4.3.4.3.2.2 Owner Consultant shall collect environmental samples.

4.3.4.3.2.3 Results of samples shall comply with Title 17, CCR before the Work Area is released for normal occupancy.

4.3.4.3.2.4 Where samples fail to meet regulated clearance levels of Title 17, CCR, clean the Work Area as required for final cleaning in the Clean Up Procedures section of this Specification.

4.3.4.3.2.5 Following cleaning, the visual inspection and environmental sampling will be repeated as described above. This process shall continue until the clearance level of Title 17, CCR is provided.

4.3.5 RE-ESTABLISHMENT OF THE WORK AREA AND SYSTEMS

4.3.5.1 Re-establishment of the Work Area shall only occur following the completion of clean-up procedures and after a Clearance Inspection has been performed and documented to the satisfaction of the Owner Consultant.

4.3.5.2 Re-secure Moveable Objects removed from their former positions during area preparation activities.

4.3.5.3 Relocate Moveable Objects that were removed to temporary locations back to their original positions.

4.3.5.4 Repair all areas of damage that occurred as a result of Abatement or Lead Related Construction Work.

4.3.6 PROJECT COMPLETION DOCUMENTATION

4.3.6.1 Provide to the Owner Consultant all of the following close-out documentation:

4.3.6.1.1 Filter change logs for all air filtration units, water filtration units and respirators

4.3.6.1.2 Foreman's daily job reports

4.3.6.1.3 Employee entry/exit logs for all Work Areas

4.3.6.1.4 Visitor entry/exit logs for all Work Area

4.3.6.1.5 Air sample results for personnel

4.3.6.1.6 Copies of all hazardous and non-hazardous waste manifest

4.3.6.1.7 All hazardous waste weight tickets

4.3.6.1.8 Analytical data and chain of custody for waste characterization

4.3.6.1.9 All signed Daily Personnel Report Forms