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SECTION 1. ASBESTOS BIDDING REQUIREMENTS

Part 1.1 - Site Investigations

By submitting a bid for asbestos related work, the asbestos abatement contractor acknowledges that they have investigated and satisfied themselves as to: a) the conditions affecting the work, including but not limited to, physical conditions of the site which may bear upon site access, handling, and storage of tools and materials, access to water, electric, or other utilities, or otherwise affect performance of required activities; b) the character and quality of all surface and subsurface materials or obstacles to be encountered, in so far as, this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Owner or a designated consultant, as well as, information presented in drawings and specifications included with this contract. Any failure by the asbestos abatement contractor to acquaint themselves with available information will not relieve them from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner is not responsible for any conclusions or interpretations made by the asbestos abatement contractor on the basis of the information made available by the Owner.

Part 1.2 - Insurance Requirements

Successful asbestos abatement contractor shall purchase and maintain insurance that will protect them from claims that may arise out of or result from the activities under this Contract, whether those activities are performed by the asbestos abatement contractor, by any Subcontractor, or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

Successful asbestos abatement contractor shall submit proof of coverage, as well as, Subcontractors under the Worker's Compensation insurance system of the State of California or other similar benefit acts.

Successful asbestos abatement contractor shall submit a certificate of general liability insurance protecting against liability for bodily injury and property damage arising from asbestos abatement contractor's activities under this contract.

Such certificate of insurance must contain the following provisions:

- (a) The limit of liability shall not be less than \$1,000,000.00 per occurrence for bodily injury and property damage liability combined.
- (b) The Owner, Owner's Agents, and Consultant must be named as additional insured, but only in respect to liability arising or resulting from activities under this contract.
- (c) In the event of cancellation of the insurance policy, the Owner shall be given thirty days advance written notice.
- (d) The insurance certificate must state that the insurance includes liability coverage for asbestos abatement work.

Successful asbestos abatement contractor's Subcontractors shall submit a certificate of general liability insurance protecting against liability for bodily injury and property damage arising from Contractor's activities under this contract.

Such certificates of insurance must contain the following provisions:

- (a) The limit of liability shall not be less than \$1,000,000.00 per occurrence for bodily

injury and property damage liability combined.

- (b) The Owner, Owner's Agents, and Consultant must be named as an additional insured, but only in respect to liability arising or resulting from activities under this contract.
- (c) In the event of cancellation of the insurance policy, the Owner shall be given thirty days advance written notice.

Part 1.3 - Licenses and Qualifications Requirements

The asbestos abatement contractor shall be duly licensed in the State of California with the Contractors State License Board (CSLB) in accordance with the provisions of Chapter 9 of Division 3 of the Business and Professions Code, as amended. This includes certification for asbestos-related work, and all other trades or work required under this contract and within these specifications.

The asbestos abatement contractor shall submit a statement, signed by an officer of the company, containing the following information:

- 1. A record of any citations issued by Federal, State, or Local regulatory agencies within the last 3 years, relating to asbestos abatement activity. Include projects, dates, and resolutions.
- 2. A list of penalties incurred through non-compliance with asbestos abatement project specifications, including liquidated damages, overruns in scheduled time limitations, and resolutions.
- 3. Situations in which an asbestos-related contract has been terminated including projects, dates, and reasons for terminations.
- 4. A list of any asbestos-related legal proceedings/claims in which the Contractor (or employees scheduled to participate in this project) has participated or is currently involved. Include descriptions or role, issue, and resolution to date.

The asbestos abatement contractor is fully and totally responsible at all times for compliance with payment of prevailing wage rates pursuant to provisions of the California Labor Code, for compliance with Division 2, Part 7, Chapter 1, California Labor Code, including but not limited to Section 1776; and for compliance with California Labor Code, Section 1777.5 for all apprentice able occupations.

SECTION 2. ASBESTOS GENERAL REQUIREMENTS - DEFINITIONS

Abatement - Procedures beyond a special operations and maintenance program to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosure, repair.

ACGIH - American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Building D-5, Cincinnati, Ohio 45211

AHERA - Asbestos Hazard Emergency Response Act

AIHA - American Industrial Hygiene Association, 475 Wolf Ledges Parkway, Akron, Ohio 44311

Air Filtration Device - See "Pressure Differential Unit"

Airlock - A system for permitting ingress and egress with minimum air movement between a contaminated

area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least three (3) feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air Monitoring - The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos follows the NIOSH Standard Analytical Method for Asbestos in Air P&CAM 239 or Method 7400. For clearance air monitoring, electron microscopy methods may be utilized for lower detection and specific fiber identification.

Air Sampling Professional - The professional contracted or employed by the Owner to supervise and/or conduct air monitoring and analysis schemes. This individual may also function as the Asbestos Project Manager, if qualified. Supervision of air sampling and evaluation of results should be performed by an individual certified in the Comprehensive Practice of Industrial Hygiene (CIH) or having specialized experience in air sampling for asbestos. Other acceptable Air Sampling Professionals include Environmental Engineers, Architects, Chemists and Environmental Scientists or others with equivalent experience in asbestos air monitoring. This individual shall not be affiliated in any way other than through this contract with the contractor performing the abatement work.

Ambient Air - The air outside the buildings and structures or the air as it normally exists in a space prior to abatement.

Amended Water - Water to which a surfactant has been added.

ANSI - American National Standards Institute, 1430 Broadway, New York, New York, 10018

Asbestos - Means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite grunerite (amosite), anthophyllite, actinolite, and tremolite.

Asbestos Containing Hazardous Waste - Materials defined by the State of California to be packaged, labeled, transported, and disposed of as an asbestos hazardous waste. This includes all friable asbestos-containing material over one-percent (1%) asbestos. This also includes all asbestos-containing material containing less than one-percent asbestos for which one or more bulk samples have not been point counted and found to contain less than one-percent (1%) asbestos.

Asbestos Containing Material (ACM) - Cal/OSHA - Material composed of asbestos of any type and in an amount greater than one percent (1%) either alone or mixed with fibrous or non-fibrous materials.

Asbestos Containing Construction Material (ACM) - a manufactured construction material containing greater than 0.1% asbestos by weight by the PLM method.

Asbestos Containing Waste - Asbestos-containing material or asbestos-contaminated objects requiring disposal.

Asbestos Project Manager (APM) - (Competent Person) - An individual qualified by virtue of experience and education, designated as the Owner's representative and responsible for overseeing the asbestos abatement project.

ASTM - American Society for Testing and Materials, 916 Race Street, Philadelphia, PA 19103.

Authorized Visitor - The Owner (and any designated representative) and any representative of a regulatory or other agency having jurisdiction over the project.

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EXHIBIT A

Bidder - A duly licensed and accredited asbestos contractor who was present at the bid-walk and has submitted a bid.

Cal/OSHA - California Division of Occupational Safety and Health.

Certified Asbestos Consultant (CAC) - A certified asbestos consultant as defined by the Department of Industrial Relations (Cal/OSHA).

Certified Industrial Hygienist (CIH) - An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Clean Room - An uncontaminated area or room which is a part of the worker decontamination enclosure system with provisions for storage of workers' street clothes and clean protective equipment.

Competent Person - A person who is an accredited EPA Asbestos Contractor/Supervisor and whose accreditation is current.

Containment - Isolation of the work area from the rest of the building to prevent escape of asbestos fibers.

Contract Documents - Written contractual agreements between the Owner and the Contractor that pertain to the work on this project.

Contractor - The individual and/or legal entity and its subcontractors and employees of the contractor and subcontractor awarded the contract.

Contractor/Supervisor - A person who successfully completed an initial U.S. EPA and/or state-approved five-day AHERA accreditation course and who has maintained that training through approved annual refresher training, and possesses current and valid AHERA accreditation documentation as a AHERA accredited Contractor/Supervisor.

Class I, II, III, or IV Work - Work classes described in 8 CCR 1529 that describe different levels of asbestos work.

Critical Barrier - Critical Barriers used to restrict water and air flow. Critical Barriers are the barriers placed over openings in the walls and ceilings of a work area in order to ensure that airborne fibers cannot escape the work area via these openings. The Contractor will construct impermeable barriers at all exits or openings, including doorways, duct chases, mechanical shafts, elevator shafts, floor openings, drains, and the like, so that all possible exit or entrance routes are effectively barricaded and sealed. Unless otherwise specified in the Contract documents, critical barriers shall be constructed of at least one layer of 6-mil thick poly.

Critical Barrier Negative Pressure Test - Required test for negative pressure with only critical barriers and air filtration units installed. This test must be conducted prior to the installation of cleaning barriers, but may be conducted with or without the decontamination unit in place.

Decontamination Enclosure System - (Also known as Decon or Waste Transfer Decon) A series of connected rooms designed for the decontamination of workers and equipment that is separated from the work area and from each other by z-flapped curtained doorways. This unit shall be constructed with at least six-mil poly for the floors, walls, and ceiling. All decontamination enclosure systems used for worker entry and exit shall be equipped with a shower.

Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations.

DOP - Dispersed Oil Particulate which are normally used as an agent for testing the efficiency of HEPA filters.

Dust or Debris - Any visible dust or debris remaining in an abatement area will be considered asbestos-containing residue.

Encapsulant - A liquid material which can be applied to asbestos-containing material 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).

EPA - U.S. Environmental Protection Agency

Equipment Room - A contaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Exterior of Containment HEPA Filtered Pressure Differential Unit - An air-purifying unit positioned outside, rather than inside the regulated work area. The face, or filter portion of the unit is integrated within the work area, and the remainder of the unit (housing, wheels, rivets, control panel, etc.) is located outside of the work area. This allows filters on the air intake to be changed from within the regulated area but access to the machine itself is available to those outside the area. Pressure differential units which pass DOP testing across the HEPA filter, but fail at rivets, control panels, wheels, etc. may be used in this fashion as long as the failure point of the unit can remain on the exterior of containment while the face of the unit and filters are inside containment.

Facility - Any institutional, commercial or industrial structure, installation, or building.

Facility component - Any pipe, duct, boiler, tank, reactor, turbine, or furnace at or in a facility or any structural member or a facility.

Fed OSHA or OSHA - Federal Occupational Safety and Health Administration.

Fixed object - A piece of equipment or furniture in the work area which cannot be removed from the work area.

Friable asbestos - Asbestos-containing material which can be crumbled to dust when dry, under hand pressure or by mechanical means.

Glove Bag Technique - A method with limited applications for removing small amounts of friable asbestos-containing materials from ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces. The glove bag is constructed of 6 mil transparent polyethylene with two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste.

HVAC - Heating, ventilation and air conditioning system.

HEPA Filter - A high efficiency particulate air filter capable of removing particles 0.3 microns in diameter from an air stream with 99.97% efficiency.

HEPA Vacuum - A vacuum system equipped with HEPA filtration.

Lock-down - To mist the air and to wet surfaces with an agent designed to bind asbestos fibers together.

Magnehelic gauge - Instrument for measuring the static air-pressure differential across a barrier.

Manometer - See "Magnehelic gauge".

Mini-Enclosure - Mini-enclosures shall be constructed of 6 mil polyethylene (attached with tape and/or glue

to walls and floors) and shall be small enough for 1-2 workers who can enter the enclosure, complete the abatement exercise, pass out the containerized debris and exit.

Monitoring - May include:

- a) Visual inspection for the presence of visible emissions; or
- b) Air monitoring performed in accordance with accepted methods;
- c) Core samples of encapsulated or bridged materials.
- d) Bulk sampling of soil during and following abatement.
- e) Sampling substrata following abatement.

Movable Object - An unattached piece of equipment or furniture in the work area which can be removed from the work area.

NVLAP - National Voluntary Laboratory Accreditation Program.

NESHAP - The National Emissions Standards for Hazardous Air Pollutants (40 CFR Part 61, Nov. 20, 1990)

NIOSH - The National Institute for Occupational Safety and Health CDC-NIOSH, Building J N.E. Room 3007, Atlanta, GA 30033

Outside Air - The air outside buildings and structures.

Owner - The Owner or Owners authorized Representative.

PCM - Phase contrast microscopy according to NIOSH Method 7400.

Plasticize - See "Poly".

Poly - Polyethylene sheeting. Used to cover floors, walls, ceilings, create critical barriers, and seal open vents on mechanical systems, etc. Note: All poly must be flame-retardant.

Pressure Differential Unit (PDU) - Also called negative air units. A portable exhaust system equipped with HEPA filtration and capable of exhausting air out the asbestos work area to create a negative pressure work environment..

Regulated Area - means an area established by a Contractor to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit. Additionally "Regulated Area" means any measure used to restrict access to an area where personnel impacting asbestos-containing materials are required to wear respiratory protection and/or protective clothing by the project specifications regardless of airborne asbestos concentration levels.

Regulations - shall include but not be limited to:

- a. U.S. Environmental Protection Agency Regulations for Asbestos (Title 40, Code of Federal Regulations, Part 61, Subparts A & B)
- b. U.S. Environmental Protection Agency, Office of Toxic Substances, Asbestos-Containing Materials in School Buildings, A Guidance Document, Parts 1 & 2.
- c. Title 8, Chapter 4, Subchapters 1 through 21, California Administrative Code, General Industry Safety orders, Section 5208 "Asbestos" or the applicable sections of the Federal Asbestos Regulations. Cal/OSHA Construction Safety Orders, Section 1529.

- d. "Asbestos Hazard Emergency Response Act", U. S. Environmental Protection Agency, 40 CFR, Part 763. Final Rule and Notice.
- e. Applicable local county Air Pollution Control Owners and Air Quality Management Districts.

Removal - The stripping of any asbestos-containing materials from surface or components of a facility.

Renovation - Altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or taken out are excluded.

Shower Room - A room between the clean room and the equipment room in the decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination. The shower room must be equipped with an overflow pan to contain water splashed, leaked or spilled out of the shower unit.

Staging Area - Either the holding area or some area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

Structural Member - Any load-supporting member of a facility, such as beams and load-supporting walls or any non-load-supporting member, such as ceilings and non-load supporting walls.

Submittals - Pre, interim, and post job documents submitted by the contractor to Owner/Owner's Representative as indicated in General Requirements and Bidding Requirements.

Surfactant - A chemical agent added to water to improve wetting and penetration into asbestos materials.

TEM - Transmission Electron Microscopy according to AHERA specifications for Level II analysis.

Visible emissions - Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Waste Load-out/Transfer System - A decontamination system utilized for transferring containerized waste from inside to outside of the work area. A series of three connected rooms used for the load-out of asbestos-containing materials that have been properly containerized. The waste load out chamber system shall normally consist of three connected chambers adjacent to the work area. Each chamber shall be constructed with six-mil thick poly for the floors, walls, and ceiling

Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other utensils which have been dampened with water and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

Work 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 sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area which has not been plasticized nor equipped with a decontamination enclosure system.

Worker - Contractor employee who has completed course work and passed the exam for an EPA accredited, AHERA asbestos abatement worker. Certificate must be current.

SECTION 3. NOTIFICATIONS, SUBMISSIONS, POSTINGS

Part 3.1 - Notification

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Prior to commencement of work the Contractor shall send notices of work to be completed to the agencies listed below with a copy of each to be provided to the Owner or its representative at the pre-construction meeting.

For compliance with 40 CFR part 61.146 of Subpart M, send notice at least 10 working days prior to start of work to the following appropriate agencies if trigger quantities of RACM are met or for a demolition:

San Joaquin Valley Air Pollution Control District

U.S. EPA - Region IX
Asbestos NESHAP Notification (Air 5)
75 Hawthorne Street
San Francisco, California 94105
Tel (415) 947-4182

Send Copy or Fax To:

California Air Resources Board
Enforcement Division
Asbestos NESHAP Notification
Post Office Box 2815
Sacramento, California 95812
Tel (916) 322-6036
Fax: (916) 445-7986

For compliance with Title 8, California Administrative Code, Construction Safety Order 1529, Asbestos Regulations send written notice at least one day prior to start of work to:

State of California
Department of Occupational Safety and Health (Cal/OSHA)

These notices shall include, at a minimum, the name and address of the Contractor, the name and address of the work site, the type of work to be done including the percent asbestos content of the material, the methods used to prevent migration of the fibers, personal protective measures, the number of his workers involved, any union representation of the workers and the methods of disposal including the names and EPA numbers of both the certified hauler and the waste disposal site. The notices shall also include start and finish dates. Changes in start and completion dates shall be reported immediately to the proper agency. Use forms provided by agency whenever possible.

Part 3.2 - Pre-Construction Submittals

Submit copies of documents required to be included in the Bidding Requirements. At a minimum these documents will include:

1. Copy of State of California Contractor License Issued by CSLB
2. Copy of State of California CSLB Active License
3. Copy of State of California CSLB Asbestos Certification
4. Copy of Department of Industrial Relations; Division of Occupational Safety and Health; Certificate of Registration for Asbestos-related Work
5. Copy of signed statement from company officer listing citations and pending proceedings against the Contractor, or if there have been no citations, a copy of the statement that no

actions by regulatory agencies have occurred in the last three years signed by an officer of the company.

Submit copies of insurance certificates which meet requirements as outlined in Section 1, Part 1.2, of this Specification.

Submit copies of notifications to government agencies.

Submit proof satisfactory to the Owner that required permits have been acquired applicable to the project being performed and specific to the project site and location. If no city, county, or other permits for parking, waste container location, or variances for scheduled work hours are required this should be stated in writing and submitted to the Owner.

Submit Sub-contractors information or statement that Sub-contractors will not be required or used during this project. This statement should also include that if it becomes necessary to use a Sub-contractor during this project that Sub-contractor will not be allowed to perform work until all required documentation has been submitted for review by the Owner or Owner's CAC, and the Contractor receives written approval for use of the Sub-contractor on this project.

Submit a complete list of all rented equipment, or equipment expected to be rented from an outside contractor for use in "Regulated Areas", "Work Areas", or "Containments", where the equipment may be exposed to elevated levels of airborne asbestos. If no equipment is to be rented a statement should be submitted stating no equipment will be used on the project. The statement should also include that if it becomes necessary to use rented equipment that written statements from each rental company will be provided to the Owner prior to its use, indicating the rental companies acknowledgment that the equipment is provided for and may be used in areas where airborne levels of asbestos may be present.

Submit non-emergency telephone numbers, other than 911, for the appropriate Police, Sheriff, and Fire Departments. This list of numbers shall also include the Name, pager or cell phone numbers of the on-site supervisor and his immediate company supervisor.

Submit detailed written directions from the project site to the medical facility to be used in case of an emergency. Also include a map which sufficiently shows the route to be taken from the site to the designated medical facility.

Submit written emergency procedures pertinent to the work to be performed and which can be implemented by site personnel if the need arises.

Submit detailed information on preparation of work area, personal protective equipment, employee experience, training and assigned responsibilities during the project. Also list decontamination procedures for personnel, work area and equipment, abatement methods and procedures, required air monitoring program, procedures for handling and disposing of waste materials and procedures for final decontamination and cleanup.

Submit a detailed work schedule. The schedule shall have, as a minimum, the work area and the day/month for beginning and terminating work in each work area. During progress of work, it shall be the Contractor's responsibility to keep the schedule current and up to date.

Submit documentation satisfactory to the Owner that the Contractor's employees, including foremen, supervisor, and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of abatement activities, have received required US EPA AHERA training.

Submit documentation from physician that all employees or agents who may be exposed to airborne asbestos in excess of background levels have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring as required by Cal/OSHA regulations. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g., high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities.

Submit documentation of respirator fit-testing for all Contractor employees and agents who must enter any work area where asbestos-containing materials may or will be impacted. This fit-testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature. Documentation pertaining to NIOSH approvals for all respiratory protective devices utilized on site shall also be included.

Submit copy of waste transporters Department of Toxic Substances Control, Hazardous Waste Transporter Registration if hazardous asbestos-containing waste is to be removed during the project. If hazardous asbestos-containing waste will not be generated submit the name, address, and registration information for the waste hauler to be used for transporting the waste.

Submit documentation listing the name and site address of the waste facility designated to receive asbestos-containing waste generated during this project. This documentation shall also include the EPA Identification number, and a copy of the current permit authorizing the waste facility to accept and dispose of asbestos-containing waste.

Submit Safety data sheets (SDS) for any and all applicable, materials, supplies, etc. These documents must be legible and completely reveal information required to be communicated to the Contractor's employees, visitors, and Owner Representatives.

Submit manufacturers' certifications that high efficiency particulate air (HEPA) vacuums, pressure differential units and other local exhaust ventilation equipment conform to ANSI Z9.2-79.

Submit name of laboratory/person to be used for Phase Contrast Microscopy (PCM) analysis and copy of current NVLAP Certificate of Accreditation (if applicable), and most recent NIOSH Proficiency Analytical Testing Program results.

Submit a written statement that OSHA monitoring will be performed for all asbestos-related activities performed during this project. This statement must be on company letterhead, dated, include name of the site or project being worked on, and signed by an authorized agent of the company performing the asbestos-related work.

Submit manufactures documentation pertaining to the capability of waste water filters to filter particles of 1.0 micron in size.

Part 3.3 - Submittals During the Work Process

Submit weekly - copies of work site entry/exit logs as well as information on worker and visitor access.

Submit weekly - copies of results of air sampling data collected during the course of the abatement including OSHA compliance air monitoring results.

Submit weekly - copies of air-differential manometer graphs and HEPA filter change logs. (see Section 13)

Submit weekly - copies of all transport manifests, trip tickets, weights and disposal receipts as applicable for all asbestos waste materials removed from the site during the abatement process.

Submit as applicable - copies of current insurance certificates, notifications, worker documentation, etc. if these items expire during the course of the project.

During abatement the Owner will upon request submit to the Contractor results of bulk material analyses and air sampling data collected during the course of the abatement. These serve only to monitor Contractor performance during the project.

Submit upon request during or after completion of the project, documentation deemed by the Owner to be pertinent to the project.

Part 3.4 - On-Site/Clean-Room Area Postings and Documentation

The following items shall be posted at the entrance to "Regulated Areas", "Work Areas", and "Containments", or in the possession of the Contractor's on-site supervisor where respiratory protection or protective clothing is required by this Specification.

A Cal/OSHA Information poster and a Cal/OSHA Construction Site poster.

A copy of the CAL-OSHA and the local AQMD/APCD or EPA NESHAP Notification (if applicable).

Non-emergency telephone numbers, other than 911, for the appropriate Police, Sheriff, and Fire Departments. This list of numbers shall also include the Name, pager or cell phone numbers of the on-site supervisor and his immediate company supervisor. Detailed written directions from the project site to the medical facility to be used in case of an emergency. Also a map which sufficiently shows the route to be taken from the site to the designated medical facility.

Written emergency procedures pertinent to the work to be performed and which can be implemented by site personnel if the need arises.

Written entry/exit procedures shall be posted in the clean room and equipment room. (See Section 12)

List of persons authorized to be in restricted area. The list shall include, among others, the following names with addresses and phone numbers:

Contractor	Air-sampling Professional	Asbestos Project Manager
Testing Laboratory	Owner's representatives	Any other designated by the Owner

Entry/exit log for work performed in all "Regulated Areas", "Work Areas", and "Containments" where respiratory protection or protective clothing is required by this Specification. Contractor shall maintain copies of all entry/exit logs on the site during the performance of asbestos-related work.

All of the Contractor's personnel and area air sampling results shall be posted in the clean room area or in

the possession of the Contractor's site supervisor if no decontamination unit is required for the work being performed within 72 hours of collection, and submitted to Owner's CAC weekly unless otherwise noted.

Copies of Safety data sheets (SDS) for all materials on-site.

Part 3.5 - Job Site Documents

The following shall be in the possession of the Contractor's supervisor at each job site:

1. All contract specifications to include, change orders, etc. Contractor competent person must sign a document stating he has full knowledge of all Sections included in this specification.
2. Written Injury and Illness Prevention Program.
3. Written Respiratory Protection Program
4. An updated list of all contractor employees who have worked on this job.
5. List of all US EPA AHERA competent employees (supervisors).
6. Training records
7. Medical records
8. Respiratory fit test records

Part 3.6 - Project Close-out Documents

Contractor shall submit post-construction submittals to Owner/Owner's Representative within thirty (30) days of the completion of asbestos-related work. This documentation shall include at a minimum any and all applicable documents as outlined in Part 3.2 and Part 3.3 of this Section. In addition the Contractor should consult and submit as applicable documents identified in Section 24, Part 24.3 - Post Construction Submittal List

SECTION 4. SITE SECURITY

The work area is to be restricted to authorized, trained and protected personnel. A list of authorized personnel shall be established prior to job start and posted in the clean room of the work decontamination facility, or in the possession of the on-site supervisor for the Contractor.

Contractor shall report to the Owner immediately entry into the work area by unauthorized individuals.

A log book shall be maintained during the project. Anyone who enters the work areas must record name, affiliation, time in, and time out for each entry.

Access to all "Regulated Areas", "Work Areas", and "Containments" shall be through a designated entry point. All other means of access (doors, windows, hallways, etc.) shall be blocked or locked so as to prevent entry to or exit from these areas. The only exceptions for this rule are the waste pass out air-lock, and emergency exits in case of fire or accident.

Emergency exits shall NOT be locked, however, they shall be sealed with polyethylene sheeting and tape until needed. All emergency exits shall be clearly designated. They shall also have a razor knife permanently in place to facilitate emergency exit.

Contractor should have control of site security during abatement operations whenever possible, in order to protect work efforts and equipment. During off-hours access to the abatement area shall be restricted by a lockable entry.

Contractor will have Owner's assistance in the enforcement of restricted access by Owner's employees.

Storage of debris will be such that access to it is limited to the Contractor. Lockable bins shall be utilized and they shall be locked at all times except when loading occurs. No soft covers will be allowed for any storage containers. When a container with rolling tops is being used all access points to the interior of the container must be secured by the Contractor with locks of sufficient strength to require special effort to gain access to the interior of the waste container.

SECTION 5. EMERGENCY PLANNING

Emergency planning and procedures shall be developed by the Contractor and shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, and heat related injury and agreed to by Contractor and Owner prior to abatement initiation. These emergency procedures shall be established and presented to all employees and the Owner prior to the beginning of any work. A written emergency plan shall be posted or in the possession of the on-site supervisor for the Contractor regardless of the work being performed.

A copy of the Contractor's written Injury and Illness Prevention Program shall be posted or in the possession of the on-site supervisor for the Contractor regardless of the work being performed.

Employees shall be trained in evacuation procedures in the event of workplace emergencies. Telephone numbers of all emergency response personnel shall either be in the possession of the on-site supervisor, or be prominently posted in the clean change area and equipment room, along with the locations of the nearest telephone indicated on a map or diagram.

At least two fire extinguishers shall be present on site and in close proximity to the work being performed regardless of the type of work being conducted. At least one fire extinguisher shall be present outside of any containment. Additional extinguishers shall be distributed according to Cal/OSHA requirements or as identified in this Specification.

When open abatement is being performed, an emergency blast horn (canned air horn) shall be placed inside of containment for emergency evacuation in the event of a fire or other emergency.

If noted in any other section of this Specification, a means of communication shall be established between inside and outside of containment whenever a decontamination setup is required, particularly for all open abatement projects. This requirement may be met through walkie talkies or cell phones.

During hot working conditions, such as in an attic space during summer, or in containments where live steam or hot water lines are exposed, special attention must be given to the possibility of heat stress and burns. The Owner's site representative may make recommendations for work breaks for employees, but the supervisor is ultimately responsible for his workers.

SECTION 6. PRE-CONSTRUCTION MEETING

A pre-construction meeting will be held at a time and location to be determined by the Owner. The successful Bidder, his on-site supervisory personnel, and Air Sampling Professional (if applicable), representatives of the Owner, Owner's Representative, and other individuals as necessary shall be present at this meeting.

At this meeting the Contractor shall provide all required submittals, as indicated above in Section 3, Part 3.2. The Contractor should use the Pre-Construction Submittal List provided in Section 24, Part 24.1 to assure all required submittals are included in his submittal package.

SECTION 7. MATERIALS AND EQUIPMENT**Part 7.1 - Contractor Equipment and Supplies**

Deliver all consumable materials in the original packages, containers or bundles bearing the name of the manufacturer and brand name (where applicable). These must be approved by the Owner. Polyethylene (Poly) sheeting, of appropriate thicknesses for walls, floors, and ceilings, (4 mil's thick for walls, 10 mil's thick for lining of waste containers, 6 mil's thick for floors and all other uses), shall be provided in widths selected to minimize the frequency of joints.

All poly shall be flame-retardant (fire-rated) regardless of its designated use inside or outside any building.

Poly sheeting utilized for worker decontamination enclosure shall be opaque white or black in color and each layer shall be a minimum of 6 mil thick. Modesty barriers are to be erected whenever and wherever the Owner's CAC determines one is needed.

Disposal bags shall be constructed of 6 mil poly with labels required by OSHA, CDPH, Toxic Substance Control regulations. Disposal drums shall be metal or fiber board with locking ring tops to be used only if required and/or allowed by selected waste facility.

Stick-on labels as per DTSC, DOT and OSHA requirements for disposal drums shall be provided.

Warning signs as required by OSHA shall be provided and posted per regulations.

Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of one (1) fluid ounce to five (5) gallons of water or as specified by manufacturer. If amphibole asbestos is present in the materials being removed, the Contractor shall use a surfactant that is designed to wet the materials. This information shall be submitted to the Owner's CAC before the start of the project.

A sufficient quantity of pressure differential units equipped with HEPA filtration and operated in accordance with ANSI Z9.2-79 and EPA guidance document EPA 560/5-83-002 Guidance for Controlling Friable Asbestos-Containing Materials in Buildings, Appendix F: Recommended Specifications and Operating Procedures for the Use of Negative Pressure Systems for Asbestos Abatement, shall be utilized so as to meet the requirements of Section 12.

An adequate number of respirators for the work force shall be on hand. These respirators will include, when specified:

- a. Type "C" air-supplied respirators in positive pressure or pressure demand mode with full face pieces and HEPA-filtered disconnects.
- b. Full-face powered-air respirators with HEPA-filters.
- c. Half-face or full face respirators with HEPA filters.

All respirators shall be NIOSH-approved and be equipped with supplies for immediate replacement of defective parts.

Full body disposable protective clothing, including head, body, and foot coverings consisting of material impenetrable by asbestos fibers shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.

Additional safety equipment such as hard hats, eye protection, safety shoes, disposable PVC gloves, etc., as necessary shall be provided to all workers and authorized visitors.

Non-skid footwear shall be provided to all abatement workers.

If launderable clothing is to be worn underneath disposable protective clothing, it shall be provided by the Contractor to all abatement workers. Laundering must occur in accordance with applicable OSHA requirements.

A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

Rubber dustpans and rubber squeegees shall be provided for cleanup.

A sufficient supply of HEPA-filtered vacuums and HEPA filtered negative air units shall be provided to meet the specifications.

All HEPA equipment to be used on the project must be delivered to the site empty of all debris, clean, free of dust, and in full operating condition. All HEPA equipment to be used shall be DOP tested onsite by a third party at the start of the project before being used on the project. This DOP certification must be verified by Owner's CAC prior to its use.

DOP certification testing shall be observed and witnessed by an Owner's CAC. Copies of DOP test results and certification must be submitted to Owner's CAC within 24 hours of the testing being performed.

No product or material will be used on the project unless the product data sheets and all SDS's have been submitted, reviewed, and approved by the Owner for use. Any product or material found on the project which has a product data sheet and/or SDS available and has not been approved will be removed from the site by the Contractor until review and approval has been completed by the Owner.

Part 7.2 - Rental Equipment and Supplies

Any equipment rented and delivered to the site for the purpose of conducting asbestos abatement work must be accompanied with documentation verifying that the rental agency has been notified, and acknowledges receipt of notification that the equipment being rented will be used for asbestos abatement work. This documentation must be submitted to the Owner's CAC prior to the equipment being delivered to the job site. Rental equipment, including scaffolding, will be held to the same standard of cleanliness as all other equipment on this project.

All rented equipment must be inspected and accepted by Owner's CAC as it arrives onsite. Any equipment covered with dust (no matter the source of dust), plaster debris, multiple layers of encapsulant and/or spray glue, or any other debris will not be accepted. Delays caused by a lack of clean equipment will not extend Contractor's schedule. Equipment rejected due to a lack of cleanliness must be removed from Owner's grounds in order to be cleaned. Dirty equipment wrapped in plastic will not be acceptable.

The Owners' agent/site representative must be informed 24 hours prior to the delivery of any rental equipment.

The decision of the Owner or its representative on all rental equipment and supplies shall be final.

SECTION 8. WORK SITE FACILITIES

The Owner shall provide sanitary facilities for abatement personnel outside of the enclosed work area. To use these facilities all workers shall wear street clothes, not bathing suits or disposable coveralls while using the facilities.

The Owner shall provide water for construction purposes. Contractor shall connect to existing Owner system.

The Owner shall provide the electrical source.

The Owner or its representative shall specify the waste water discharge location and location of waste containers.

The Owner shall specify on-site parking areas, if available, and access to the site.

SECTION 9. RESPIRATORY PROTECTION

All respiratory protection shall be provided to workers in accordance with the submitted written respiratory protection program, which includes all items as required by OSHA. This program shall be posted in the clean room of the worker decontamination enclosure system or adjacent to the clean room.

The Contractor shall ensure that all workers entering the regulated area wear appropriate respiratory protection. Respiratory protection provided workers shall be in accordance with 8 CCR 1529, and 8 CCR 5144 and the respiratory protection program submitted by the Contractor. This program shall be available at the project site.

The Owner or their representative may deny access to a regulated area to anyone who, in the final judgement of the Owner or their representative, is not properly wearing adequate respiratory protection for the project conditions. This includes but is not limited to those wearing unidentified respirators, those with improperly sealed respirators, those wearing respirators in an improper manner such as over their protective suit hood, or in any other fashion judged by the Owner or their representative to be improper or inadequate to protect the individual from the airborne asbestos at the project site.

The Contractor shall provide each worker needing respiratory protection with his or her own, individually identified, NIOSH-approved respirator. At a minimum, these respirators will be equipped with a P-100 series HEPA filter. The Contractor shall provide additional filter types if that becomes necessary for specific hazards discovered on the job site or if required in the contract documents.

The Contractor shall ensure that all workers use the respirator in compliance with the manufacturer's instructions for proper use and care of that product.

Workers must perform positive and negative respirator seal checks each time a respirator is put on, provided the respirator design so permits.

The Contractor shall ensure that those workers wearing powered air purifying respirators test the air flow rate according to the frequency and methods specified by the manufacturer.

Workers shall be given, at least, a qualitative fit test in accordance with procedures detailed in the Cal/OSHA requirements for all respirators to be used on this abatement project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.

The Contractor shall ensure and provide written records to the Owner's CAC that all workers wearing tight-fitting respirators have been appropriately fit tested in accordance with the requirements of 8 CCR 5144.

The Contractor shall ensure that nothing interferes with the seal of the respirator to the face of the worker. This includes but is not limited to facial hair, clothing, protective clothing, equipment or anything else that comes between the respirator and the face of the worker.

Use of any respirator must be in compliance with the manufacturer's instructions for proper use and care of that product.

The Contractor shall ensure that workers wear respirators underneath protective clothing.

Workers conducts any work that may create an airborne release of asbestos must wear appropriate respiratory protection. This includes, but is not limited to the pre-cleaning of asbestos contamination off of furniture, equipment and floors, and the set-up of contaminated work areas.

The judgement of the Owner's CAC shall be final if there is a disagreement between the Owner and the Contractor regarding the need for wearing or the type of personal protection required..

In no event will a negative exposure assessment be allowed to lower respiratory protection, from that listed in the Scope of Work or required by regulation in the absence of an NEA, prior to the start of a project. Air samples used for negative exposure assessments created after the project has started must be from work conducted under this contract.

Minimum Respiratory Protection for OSHA Class I Work

All Class I asbestos work will require tight-fitting, full-face powered-air purifying respirators pursuant to Title 8 1529.

Unless stated otherwise in the contract documents, for the purposes of respiratory protection, Class I work will include the removal of materials such as gypsum board surfaces that are covered with a texturing or skim coat material that contains >1% asbestos.

Minimum Respiratory Protection for Class II and III Work Practices

Unless specified differently in the contract documents, the Contractor's employees conducts Class II or III work will wear a minimum of half-face air-purifying respirators. Contract documents may require additional respiratory protection, such as the use of full face air-purifying respirators or powered air purifying respirators.

After work has begun, if a Contractor wishes to lower respiratory protection requirements, he or she must demonstrate to the Owner's CAC that personal air sampling results from that project prove that airborne fibers levels are below the limit of quantification for the phase contrast microscopy method. The Owner's CAC will normally require sampling results used for this purpose to include several days of sampling taken during the work expected to generate the highest expected airborne levels. The Owner's CAC will have final authority regarding whether or not the respiratory protection may be reduced or eliminated. For example, the Owner's CAC may require personal samples be analyzed by TEM before determining that asbestos does not pose an airborne health risk.

All Class I work shall require full-face powered air purifying respirators and are not subject to a reduced level of respiratory protection regardless of the air sample results.

The Owner's CAC has full authority to raise the level of respiratory protection required for access to the regulated area if in his or her judgement additional respiratory protection is required. For example, if personal air sample results collected by either the Contractor or Owner's CAC indicate higher than expected levels, the Owner's CAC is authorized to increase the level of required respiratory protection. The Owner's CAC will determine if the increased respiratory protection is due to new, unexpected developments such as the discovery of new materials, or if the increase is due to the Contractor failing to follow good work practices. The judgement on this matter by the Owner's CAC will be final.

The Owner is not responsible for increased costs or delays resulting from the need to increase respiratory protection should the reason for the increased respiratory protection be due to the Contractor's failure to adequately utilize good engineering controls and work practices and/or the prompt cleanup of debris.

The Contractor may only implement respiratory protection changes after receiving written approval for the change from the Owner's CAC.

Powered-air purifying respirators must be worn if waste containers spill, break, or in any other fashion require

a Class I work cleanup be performed.

The Contractor shall comply with the respiratory protection requirements in 8 CCR 5144 includes assigned protection factors for all respirators. The following list of respirators and their assigned "protection factors" shall be the criteria for the selection of respiratory protection.

<u>Respirator Selection</u>	<u>Protection Factor</u>
Half-face or full-face air purifying respirator equipped with HEPA filter.	10
Full-face air purifying respirator equipped with HEPA filter with quantitative fit test.	50
Full-face Type C continuous flow supplied air.	1000
Full-face, powered air purifying respirator equipped with HEPA filter.	1000
Full-face supplied air respirator operated in pressure demand mode.	1000
Full-face supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.	1000

Workers shall be provided respirators equipped with HEPA filters approved by NIOSH to be worn in the designated work area and/or whenever a potential exposure to asbestos exists. Owner or its representative may refuse entry to the work area to a worker with inappropriate respiratory protection.

Sufficient filters shall be provided for replacement as required by the workers or applicable regulations. Disposable respirators shall not be used.

Whenever type C respirator protection is used, compressed air systems shall be designed to provide air volumes and pressures to accommodate respirator manufacturer specifications. The compressed air system shall have a reservoir of adequate capacity to allow the escape of all respirator wearers from contaminated areas in the event of compressor failure.

Compressors must meet the requirements of 29 CFR 1910.134(d). Location of compressors must be approved by Owner for exhaust and noise considerations. Location of compressors must be approved by Owner for exhaust and noise considerations.

Compressors must have an in-line carbon monoxide monitor and periodic inspection of carbon monoxide monitors must be documented. Documentation of adequacy of compressed air systems/respiratory protection systems must be retained on site. This documentation will include a list of compatible components with the maximum number and type of respirators that may be used with the system. Periodic testing of compressed air shall insure that systems provide air of sufficient quality (Grade D breathing air). Documentation of this testing, including a description of the process used to perform the test and results of each test must be submitted to the Owner's CAC weekly.

Whenever powered air-purifying respirators are required, a sufficient supply of replacement batteries and HEPA filter cartridges shall be provided to the workers. Spare fully charged batteries must be available on-site for replacement. The flow rate delivered to the face piece shall be checked and recorded by the Contractor on the sheet provided by the Owner's CAC each time a worker dons the respirator. Written respiratory protection program must detail how this testing is to be performed by each employee or the onsite supervisor.

The Contractor shall ensure that the flow rate for PAPRs meets the requirements listed in 8 CCR 1544 regarding tight and loose fitting respirators as appropriate. The Contractors shall also ensure that PAPRs are worn, checked and maintained according to the directions of the manufacturer.

During encapsulation operations or usage of other organic base aerosols (e.g. spray glue, expanding foam, etc.) workers shall be provided with combination organic vapor/HEPA filter respirator cartridges.

SECTION 10. PERSONNEL PROTECTION REQUIREMENT AND TRAINING

Prior to commencement of abatement activities all personnel who will be required to enter the work area or handle containerized asbestos containing materials must have received adequate training in accordance with the OSHA, EPA AHERA, EPA NESHAP and DTSC regulations.

All personnel performing asbestos related work shall possess a current accreditation certificate as an asbestos worker or contractor/supervisor as described in 40 CFR Part 763, Appendix C to subpart E, Asbestos Model Accreditation Plan.

Special on-site training on equipment and procedures unique to this job site shall be performed by the Contractor as required or recommended by the equipment manufacturer.

The Contractor shall provide training in emergency response and evacuation procedures.

Disposable clothing, including head, foot and full body protection, shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors. Damaged coveralls shall be immediately repaired or replaced.

Hard hats, protective eye-wear, safety shoes, proper protective gloves, rubber boots and/or other footwear shall be provided by the Contractor as required for workers and authorized visitors.

Contractor personnel shall not wear street clothes or clothes of any type underneath the protective disposable clothing during any Class I work where showering is required. Upon exiting the work area, no items worn in the work area, such as clothing, personal protective gear, footwear, or hair coverings will be allowed to be worn past the shower of the decontamination unit. Contractor workers have the option of wearing disposable undergarments or a bathing suit underneath protective disposable clothing.

Each time the worker(s) enter the work area they will don new disposable clothing. Street clothes, including but not limited to, underwear and street shoes shall not be allowed inside the work area, except during visual clearance activities.

The Owner's CAC may use personal judgement to allow authorized personal to wear street clothes under protective clothing during the construction of final visual or other short-duration visits into the regulated area during times which asbestos is not being disturbed and gross debris is not present.

SECTION 11. WORKER DECONTAMINATION ENCLOSURE SYSTEMS

Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit the work area. Enclosure systems may be constructed out of metal, wood or plastic support as appropriate. Plans for construction, including materials and layout, shall be submitted as shop drawings and approved, in writing, by the Owner or its representative prior to work initiation. Detailed descriptions of portable, prefabricated units, if used, must be submitted for the Owner's approval. The worker decontamination enclosure system shall consist of at least a clean room, a shower room, and an equipment room and shall be constructed with at least 6 mil fire rated plastic sheeting.

All decontamination units and pressure differential units located outside the building shall be enclosed with a 2"x 4" wood studs and ½" plywood enclosure for security. Pressure differential units shall be secured as necessary to the building or ground. Exhaust openings shall have metal grates to prevent objects from being put into the exhaust openings. Pressure differential exhaust shall be exhausted to an area acceptable to the Owner or Owner's CAC.

Entry and exit from the worker decontamination enclosure system shall be through doorways designed to restrict air movement between chambers when not in use by either means of overlapping plastic or by means of zippers. In all hospital settings, only zippered doors are acceptable between all decontamination chambers or anterooms. The dirty side shall have an extra layer of 6 mil poly sheeting on the floor as a "boat layer" and it shall be replaced at least daily.

The clean room shall be designed and sized and equipped to adequately accommodate the size of the work crew for their change of clothes, cleaning supplies and respiratory protection equipment. Lighting, heat and electricity shall be provided as necessary for comfort. The clean room space shall not be used for storage of tools, equipment or materials or as office space.

A shower is required on any project that involves removal of greater than 25 linear feet of asbestos containing TSI or greater than 10 square feet of asbestos containing surfacing material. In addition, if the scope of works dictates a shower these provisions shall also apply. The shower room shall contain one or more showers as necessary to adequately accommodate workers. The shower enclosure shall be constructed to ensure against leakage of any kind. In addition, the shower shall be a separate unit from the decontamination unit walls. The shower unit cannot be made from poly. Metal or hard plastic is acceptable. An adequate supply of soap, shampoo and towels shall be supplied by the Contractor and available at all times for use by employees. Shower water shall be drained, collected and filtered through a system with at least 5.0 micron particle size collection capability.

The shower pan in the shower chamber shall be, at least, 3' x 3' in size. The shower chamber shall be constructed so that no water from the shower can spray out of the chamber, nor any water run down the sides of the poly and miss the pan. The shower chamber dimensions shall be determined by the size of the shower pan but are not to be smaller than 3' wide by 3' long by 6' tall.

Multiple showers are required if the number of asbestos workers exceeds ten per Title 8 3366 Washing Facilities. When there are less than five employees, the same shower may be used by both sexes if the shower room can be locked from the inside. A minimum of two showers will be required for more than 10 workers.

Each decontamination chamber shall have, at least, a 4" lip of poly from the floor up the wall to prevent possible transfer of water and debris between chambers. Excess poly at the corners of this floor is to be fitted to the sides of the chamber by folding poly and taping, as opposed to cutting away excess poly and taping seams. In addition to this 4" lip of poly, the shower chamber shall have an overflow pan, in which the shower unit sits inside, that is capable of holding sufficient water in the event of an overflow. The filter system and any hose connections transferring contaminated water shall be located in a secondary containment, such as a metal pan. Any water leakage shall be collected and either filtered or placed into waste bags with other asbestos waste debris.

Unless otherwise specified in the scope of work, the minimum size of the decontamination chambers shall be the following:

Clean Room	3' x 3'
Shower	3' x 3'
Dirty Room	3' x 3'

Abatement work will be stopped if decontamination unit is not kept in acceptable condition.

Storage or consumption of food and/or beverages shall not be permitted inside the containment or within any of the decontamination chambers. Food or drink consumption within containment will result in the dismissal of the worker from the site.

Whenever and wherever possible, the Contractor shall enclose multiple rooms within a building or wing into a single containment. Where rooms are joined by a common interior hallway or have a common exterior walkway, multiple spaces shall be joined together creating one containment using poly enclosures. When multiple rooms in a building do not have a common interior hallway, multiple rooms shall be joined using a common work chamber built by the Contractor. The common work chamber shall be constructed of wood studs and plywood sheeting for security purposes, and shall be part of the decontamination chamber. Decontamination units and joined "common areas" outside of a building shall have lockable doors or gates created with temporary fencing for security during off-hours.

SECTION 12. WORKPLACE ENTRY AND EXIT PROCEDURES

All workers and authorized personnel shall enter the work area through the worker decontamination enclosure system.

All personnel who enter the work area must sign the entry log, located in the clean room. This log shall have space for the workers name, time in, time out, and be identified with the project name, date, and containment location.

All personnel, before entering the work area, shall read and be familiar with all posted regulations, personal protection requirements, workplace entry and exit procedures, and emergency procedures.

For Class I work, the worker shall proceed first to the clean room and remove all street clothes and don appropriate respiratory protection and disposable coveralls, head covering and foot covering. Hard hats, eye protection and gloves shall also be worn, as appropriate. Clean respirators and protective clothing shall be provided and utilized by each person for each separate entry into the work area. There shall be a location for storage of the street clothes in the clean room.

Personnel wearing designated personal protective equipment shall proceed from the clean room through the shower room and equipment room to the main work area.

Before leaving the work area all personnel shall remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet-wiping procedures. HEPA vacuums with brush attachments may be utilized for this purpose.

The worker shall proceed into equipment room where they remove all protective equipment except respirators. Deposit disposable clothing into an appropriately labeled container for disposal.

Reusable, contaminated footwear such as rubber boots shall be stored in the equipment room when not in use in the work area. This footwear shall be cleaned prior to being removed from the work area. Placing footwear in two sealed 6 mil poly bags is sufficient for moving from one containment to another, but not for moving from one site to another.

Still wearing respirators, personnel shall proceed into the shower area, clean the outside of the respirators and the exposed face area under running water prior to removal of respirator, then shower and shampoo to remove residual asbestos contamination. Various types of respirators will require slight modification of these procedures.

After showering, proceed to the clean room to dry and put on the street clothes.

SECTION 13. DIFFERENTIAL AIR PRESSURE SYSTEMS

Part 13.1 - Negative Pressure Requirements

Negative pressure shall be maintained at 0.030" water differential at all times during abatement activities, including entry/exit and bag out procedures. Contractor shall assign crew members to determine cause of loss of pressure any time containment's negative pressure drops below 0.030" water differential. All work will be stopped in any containment for which the negative pressure drops below 0.025" water differential, until problem is resolved and pressure returns to 0.030" water differential or better.

In the event that containment cannot be brought up to 0.030" water differential, abatement contractor must increase number of negative pressure differential units until a calculated 10 air changes per hour is taking place. The Owner's CAC will assist and review possible remedies to the negative pressure requirement.

All negative pressure units that are installed to the containment system but are shut off or not working, shall be sealed at both the exhaust location and the intake of the machine to prevent back draft which could allow asbestos fiber contamination from the HEPA filter back into the work area.

Part 13.2 - DOP Testing

Contractor shall provide differential air pressure systems for each work area in accordance with Appendix J of EPA "Guidance for Controlling Asbestos-Containing Materials in Buildings," EPA 560/5-85-024.

All HEPA filtered systems used on this project shall be tested and certified by an independent third party company on-site prior to use. Contractors may not test their own equipment. All vacuums and pressure differential units shall meet ANSI Z9.2, using an appropriate testing agent. Written copies or electronic copies of documentation of these tests shall be provided to the Owner's CAC prior to the use of any HEPA system.

DOP, or equivalent, testing shall be conducted on-site, unless stated otherwise in the Scope of Work. All HEPA filtered units, including but not limited to, vacuums and air pressure differential units (negative air units) shall be tested onsite. Testing of air pressure differential units must include testing of the wheel attachments, control panel, seam, rivets of the housing, as well as, the HEPA filter itself.

All HEPA equipped equipment to be used on the project must be delivered to the site empty of all debris, clean and free of dust, and in full operating condition. Covering dirty units with poly, other than the HEPA filter surface, will not be acceptable.

DOP or equivalent testing is required when any HEPA filters are changed during the project

Any negative pressure unit turned upside down, or on its side, must be returned to an upright position and re-DOP tested. Negative pressure units shall not be used on this project while laid on their side or upside down.

In case of a power outage, Contractor must seal exhaust ducts against back draft into containment.

All negative air units shall will have the filter sealed with poly and tape before being shutdown to prevent back drafting before it is moved from the work area.

Part 13.3 - Differential Pressure Recording Requirements

Differential air pressure shall be continuously monitored by using a manometer that measures down to at least three digits to the right of the decimal point. For example, the manometer shall be able to read and display -0.035" wp, which shows three digits to the right of the decimal point. Other manometers not meeting this minimum criteria are not acceptable. The location of the pressure measurement shall be approved in advance by the Owner's CAC. The location where the air tubing of the manometer is inserted into the work area will be determined by both the contractor competent person and the Owner's CAC.

The pressure differential shall be checked a minimum of every hour during the work shift by the contractor's competent person.

On some projects, it may be specified for the manometer to maintain a printed copy of the negative pressure readings. The manometer readings will require the correct date and time. It will be the contractor's responsibility to write on the recording information the location of the reading, including project name and containment location.

Defective or non-operating manometers may require temporary stoppage of work until instrumentation is replaced.

For larger projects at least one manometer station shall be in place for each 25,000 square feet of containment space. Additional manometers may be required on large projects, where a second location is needed for the Owner and representatives.

Part 13.4 - Differential Pressure System

The location of the air filtration units (negative air units) exhaust out of the work area shall require careful consideration with regard to the work being performed and needs of the owner. All air exhaust from negative air units shall be directed out of the building when possible. This can be accomplished through use of flexible and semi-rigid exhaust ducts from the negative air units extending to windows, doors or other openings in the building. The first choice should always be to direct PDU air exhaust out of the building through the Contractor supplied ducts. Any alternative exhaust location of negative air that cannot exhaust out the building shall be determined by the Owner's CAC.

When directing exhaust to a buildings exterior through the use of temporary supplied duct, the Contractor shall select a path of travel for these ducts which does not impede building occupants or other trades, result in creation of a hazard to building occupants, or restrict the closing of entry and exit doors to the building. The exhaust opening must not be within 10' of any air intake vents, open windows or open doors, and must not be directed at paths of travel into or out of the building.

In some very limited cases, it might be possible to exhaust air from a negative air unit into an existing building's exhaust system. When utilizing a dedicated exhaust duct system present within the building the system must be investigated to determine its capability of handling the volume of exhaust air expected to be produced by the pressure differential system. Sufficient air volume of the existing dedicated exhaust duct system should have a minimum of 5X but preferably up to about 10X the total volume capacity of the exhaust of the pressure differential air system. For example, if a single 2,000 cfm negative air unit is to be used, the dedicated exhaust fan system which will exhaust the air produced by the negative air unit should be capable of handling about 10,000 cfm of total exhaust air capacity. Use of permanent dedicated exhaust duct systems may also require temporarily sealing of adjacent registers in the same exhaust system to make up the difference in exhaust volume.

The owner shall provide approval prior to the contractor utilizing any existing dedicated exhaust systems which might be considered, since the dedicated exhaust systems will be required to operate at all times the pressure differential air system is operable, and sealing any adjacent registers may not be acceptable. It is critical to note that a dedicated exhaust system is not the same as a return air duct system which re-circulates air from

a given building space back to the HVAC fan unit and ultimately is supplied back to the work space. Return air duct systems will not be allowed for exhaust from negative air units.

Directing exhaust air into an attic or above ceiling space may only be utilized in specific conditions and is limited to attic spaces with only exposed wood, metal or concrete undersides of roof or flooring systems. The space may not under any circumstances have any existing known or assumed asbestos containing materials present regardless of their condition.

Regardless of the exhaust system utilized, the system and its components shall be inspected daily by the Contractor to ensure compliance with the requirements of this specification, remains in good repair and is otherwise not compromised in any way which could negate its designed purpose. Any deficiencies found in the system being used shall be repaired immediately and if necessary all work will cease until those repairs can be accomplished.

The work area shall have a differential air pressure of at least -0.030 inches water whenever the work is being performed including removal, gross clean-up, encapsulation of surfaces, bag-out operations and worker entry and exit procedures. If pressure differential ever drops below -0.025 inches water differential, all work, other than cleanup of waste on the floor of containment, must be halted until reason for pressure differential drop has been determined and corrected.

Only unused pre-manufactured, reinforced flexible ducts shall be used within the containment area for exhausting of filtered air. Contractor may not construct ducts using poly or other materials that do not maintain the rigidity in the exhaust duct.

All interior of containment PDU's and flexible ducts must be wrapped in poly during all abatement activities. This poly wrap is to be removed after "finish detail" work has been completed, but prior to clearance visual.

Flexible ducts must be supported by solid surface at the point of exit from containment. This may require the Contractor to install plywood, or similar, structure at the exhaust point.

SECTION 14. EXECUTION, WORK SCHEDULE

Part 14.1 - Execution

Owner Responsibilities

The Owner shall provide the Contractor with access to the building during scheduled work hours through their representative. This representative is expected to be the General Contractor in charge of the site. The Owner shall also be responsible for arming and disarming alarm systems on buildings where work will be performed.

The Owner shall also provide the Contractor access to water and electrical hook-ups.

Contractor Responsibilities

The Contractor is responsible for all connections, electrical cords, GFCI's, water hoses, and hose bibs necessary for attachment. GFCI's are required to be used by the Contractor on all electrical circuits in use.

The Contractor and Owner's CAC shall investigate the work area and agree (in writing if necessary) on the pre-abatement condition of the work area.

The Contractor shall post danger signs meeting the OSHA specifications at locations and approaches to locations where airborne concentrations of asbestos may exceed ambient background levels including all doors sealed as a critical barrier and at all entries to asbestos work containments.

When electrical supply within area of abatement poses a hazard, the Contractor, in conjunction with the Owner, shall shut down and lock out electric power to all work areas. The Contractor shall provide temporary power and lighting sources, ensure safe installation, including ground fault circuit interrupters of temporary power sources and equipment by complying with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. The Contractor shall have a licensed electrician shut down and lock out electric power, and setup temporary power and lighting sources. All cost of electricity shall be paid for by the Owner unless specified differently in the Scope of Work. The cost for set-up of temporary power is the responsibility of the abatement contractor unless specified differently in the scope of work.

When plumbing is required to be altered or becomes damaged, the Contractor shall have a licensed plumber disconnect and cap all water as necessary within the work area. Water shall be provided by the Owner from a location near the work area, but not necessarily within the work area.

Shut down and lock out all heating, ventilating and air-conditioning-system (HVAC) components that are in, supply, or pass through the work area. Seal all intake and exhaust vents in the work area with tape and 6-mil polyethylene within the work area at both the interior and on the exterior of the building. Seal any seams in system components that pass through the work area.

Pre-clean all fixed objects in all work areas using HEPA-filtered vacuums and/or wet-cleaning techniques as appropriate and deemed necessary by the Owner's CAC. Careful attention must be paid to machinery behind grills or gratings where access may be difficult but contamination significant. After pre-cleaning, enclose fixed objects in 6-mil polyethylene sheeting and seal securely in place with tape.

Pre-clean all surfaces in all work areas using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not disturb asbestos-containing materials during the pre-cleaning phase.

Unless otherwise stated in the scope of work or by agreement with the Owner's CAC all non-asbestos-containing materials left in the work area shall be covered by with 6-mil polyethylene sheeting. If any non-asbestos containing materials become contaminated with asbestos during removal activities these materials shall be disposed of as asbestos-containing materials by the Contractor. The Owner's CAC shall determine the friability of these materials prior to disposal.

Contractor shall seal all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights and other openings between the work area and uncontaminated areas outside of the work area. These openings must be sealed with 6-mil polyethylene sheeting and tape. These protective layers shall be in addition to the two polyethylene layers on floors, ceilings and walls. These openings are referred to as critical barriers. Seal all cracks in critical barrier areas with tape, caulk, or foam prior to sealing critical barriers.

Prior to the Contractor covering critical barriers with additional layers of wall, floor, or ceiling poly, the installation and integrity of critical barrier seals must be approved by the Owner's CAC.

All items attached to asbestos-containing materials and items which cannot be removed without disturbing asbestos-containing materials shall be removed by the Contractor after establishment of containment and negative pressure. If these items are to be "saved and returned" or "reused" by the Owner, the Contractor must remove and clean them without damage. These items must be cataloged using the attached "Return Item Inventory Sheet" provided by the Owner.

Contractor shall cover floors in the work area with polyethylene sheeting. Floors shall be covered with a minimum of two layers of 6-mil polyethylene sheeting. Plastic shall be sized to minimize seams. A distance of at least six (6) feet between seams is sufficient. DO NOT locate any seams at wall/floor joints. Floor sheeting shall extend at least twelve inches (12") up the sidewalls of the work area. Sheeting shall be installed in a fashion so as to prevent slippage between successive layers of material. A layer of 10-mil polyethylene sheeting and/or plywood may be required by the Owner's CAC to protect certain flooring materials -- carpets, hardwood floors, tiles, etc. and will be specified in the scope of work if required. At no time will wall or ceiling materials be permitted to be dropped onto unprotected floors. This includes areas where the floor surfaces

contain asbestos.

Contractor shall cover walls in the work area with polyethylene sheeting. Walls shall be covered with a minimum of two layers of 4-mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six feet (6'). DO NOT locate any seams at wall/floor joints. Wall sheeting shall overlap floor sheeting by at least twelve inches (12") beyond the wall/floor joint to provide a better seal against water damage and for pressure differential maintenance. Wall sheeting shall be secured adequately to prevent it from falling away from the walls. This may require additional support/attachment when pressure differential systems are utilized.

In some projects when specified in the scope of work, the Contractor shall cover ceilings in the work area with polyethylene sheeting. Ceilings shall be covered with a minimum of one layer of 4 mil polyethylene sheeting. Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least six feet (6'). DO NOT locate seams at wall/ceiling joints. Ceiling sheeting shall overlap wall sheeting by at least twelve inches (12") beyond the ceiling/wall joint to provide a better seal against water damage and for pressure differential maintenance. Ceiling sheeting shall be secured adequately to prevent it from falling away from the walls such as wires attached between walls to provide additional support. Additional support/attachment might be required when pressure differential systems are utilized.

The Contractor shall add clear viewing windows in the containment walls at least 1' x 2' in size. The Owner's CAC will approve quantity and placement of these inspection windows. The Owner's CAC has the right to require more clear viewing windows or require placement of windows to be altered.

The equipment room shall be used for storage of equipment and tools at the end of a shift after they have been decontaminated using a HEPA-filtered vacuum and/or wet-cleaning techniques as appropriate. A six-mil. disposal bag or a drum lined with a labeled 6-mil polyethylene bag for collection of disposable clothing and contaminated supplies shall be located in this room.

The Contractor shall be responsible for all clean-up and costs associated with the decontamination of occupied spaces adjacent to any containment where removal of asbestos-containing material is conducted.

The Contractor shall also be responsible for damage to building finishes and costs associated with removal of tape glue, staining of wall finishes, or destruction of wall surface integrity from spray glue application, staples, nails, hooks, etc. installed to support containment. It is the responsibility of the Contractor to identify with the General Contractor all aspects of the project requirements pertaining to these types of damages.

There shall be a sufficient number of negative air units in the work area to maintain a minimum -0.030 " water pressure in the regulated area. A sufficient number of negative air units shall be installed to maintain a minimum of four air changes per hour. All negative air units shall have pre-filters at the intake of the system which must be changeable from inside the containment area. Openings made in the enclosure system to accommodate these units shall be made airtight with tape and/or caulking as needed. They shall NOT be exhausted into occupied areas of the building. Twelve inch (12") extension ducts shall be used to reach from the work area to the outside when required. Careful installation, air monitoring and daily inspections shall be done to ensure that the ducts does not release fibers into uncontaminated building areas.

Once the containment has been constructed and reinforced as necessary with pressure differential units in operation as required, the Contractor shall test the enclosure for leakage utilizing smoke tubes. The containment shall be repaired or reconstructed as needed.

Contractor shall clearly identify and maintain emergency and fire exits from the work area.

Work shall not begin each day until:

- a. Enclosure systems, or modifications thereof, have been designed and built by the Contractor and each step approved by the CAC. If design of containment is to be altered in any way,

- after it is approved by the CAC, a written explanation of how and why the containment is to be altered must be submitted to the Owner's CAC for approval.
- b. Pressure-differential systems are functioning according to an acceptable design.
 - c. All pre-abatement submissions, notifications, postings and permits have been provided and are satisfactory to the Owner or its representative.
 - d. All equipment for abatement, clean-up and disposal is on hand.
 - e. All current worker training documents are present.
 - f. The Contractor has installed all required clear transparent viewing windows made of plastic or equivalent, in the containment so that activities can be visually monitored by the Owner's CAC from outside the containment. This window shall measure approximately 1' wide by 2' high. It shall be installed at a location approved by the Owner's CAC.
 - g. All negative air units and vacuums have received and passed onsite DOP testing.
 - h. Contractor has at least one competent person at each site in which work is taking place.
 - i. All necessary documents and information have been posted or are on the work site.
See Section 2.

Part 14.2 - Power Outage Procedures

The following procedures shall be followed in the event of a power outage (no matter the source of the outage):

1. Immediately stop abatement activities.
2. Wet all debris and/or friable materials within the containment.
3. Depart containment area as soon as reasonable. Shower out or use Hudson type water sprayers to decontaminate worker if shower is inoperable due to power outage.
4. Seal containment area including:
 - A. Decontamination units
 - B. Makeup air ports
 - C. Bag out chambers

If a generator is required by the project conditions, made necessary due to extended power outages, or chosen to be used by the abatement contractor the following issues must be addressed:

1. Generator must not violate any local noise ordinances nor disturb adjacent building occupants.
2. Generator exhaust must not be allowed to contaminate the makeup air being pulled into the containment. It must, also, not be allowed to mix with HVAC air supplied to adjacent occupied buildings.

Part 14.3 - Work Schedule

Contractor shall schedule work as required to meet the needs of the project. During progress of work, it shall be the Contractor's responsibility to inform the Owner's CAC 48 hours or earlier of any and all work shifts to be performed. If at least 48 hours notice is not given, the proposed work shift may be canceled by the Owner's CAC.

Contractor shall be responsible for informing the Owner's CAC in writing at least 48 hours or earlier prior to the proposed addition of any off hours work, work expected to include more than one shift per day, or extend beyond 10 hours in a shift. If 48 hours notice is not given, work shift may be canceled by the Owner's CAC. The Owner's CAC reserves the right to deny any changes in the work schedule.

If the Contractor wishes to work on a Federal or State holiday, more than five days a week, or more than 9 hours a day, Contractor becomes responsible for cost of project management fees to cover extended hours.

If the Contractor fails to appear on-site without notifying Owner's CAC at least 24 hours in advance of a scheduled work shift, the Contractor becomes responsible for all Owner's CAC travel fees, on-site time fees, and other associated project management fees for that day.

At no time shall a work shift extend beyond 12 hours in a day.

SECTION 15. REMOVAL PROCEDURES

Wet all asbestos-containing material with an amended water solution using equipment capable of providing a fine spray mist, in order to reduce airborne-fiber concentrations when the material is disturbed. Saturate the material to the substrate; however, do not allow excessive water to accumulate in the work area. Keep all removed material wet enough to prevent fiber release until it can be containerized for disposal. Maintain high humidity in the work area by misting or spraying to assist in fiber settling and reduce airborne concentrations. Wetting procedures are not equally effective on all types of asbestos-containing materials but shall be used in all cases.

Saturated asbestos-containing material shall be removed in manageable sections. Removed material should be containerized immediately. Surrounding areas shall be periodically sprayed and maintained in a wet condition until visible material is cleaned up. Gross debris shall be cleaned up and bagged prior to end of each shift.

Material removed from building structures or components shall not be dropped or thrown to the floor. Material should be removed as intact sections or components whenever possible and carefully lowered to the floor.

Waste containers shall be sealed when full. Double bagging of waste material into 6 mil plastic is required. Bags shall not be overfilled. They should be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot or by taping in gooseneck fashion. Do not seal bags with wire or cord.

Asbestos-containing waste with sharp-edged components (e.g., nails, screws, metal lath, tin sheeting) will tear the polyethylene bags and sheeting and shall be placed into drums or burlap bags and then into leak tight containers for disposal.

After completion of all stripping work, surfaces from which asbestos-containing materials have been removed shall be wet-brushed and sponged or cleaned by some equivalent method to remove all visible residue.

After the work area has been rendered free of visible residues and verified clean by the CAC, a thin coat of a satisfactory encapsulating agent shall be applied to lock-down non-visible fibers on all surfaces in the work area including structural members, building components and plastic sheeting on walls, floors and covering non-removable items.

SECTION 16. WASTE CONTAINER PASS-OUT PROCEDURES

Asbestos-contaminated waste that has been containerized shall be transported out of the work area through the waste transfer airlock or through an approved pass-out arrangement.

Waste pass-out procedures shall utilize two teams of workers, an "inside" team and an "outside" team. The inside team, wearing appropriate protective clothing and respirators for inside the work area, shall clean the outside, including bottoms, of properly labeled containers (bags, drums, or wrapped components) using HEPA vacuums and wet-wiping techniques and transport them into the waste container pass-out airlock. Provisions for spray cleaning exterior of bags, equipment, and removable items shall be present in the waste pass-out. Waste water from this operation shall be collected and filtered as required through a 5.0 micron filter.

The three-chamber system is utilized in the following manner. Workers inside the work area place the waste

in the leak tight waste container, which is usually a 6 mil bag. They then rinse the bag and seal it. They hand it to a worker in the dirty chamber room who inspects the bag and, if it is clean, places it in the second leak tight waste container. The second leak tight waste container is either another bag or a lined rigid-wall container such as a barrel or box. The worker then seals the second container and may attach the proper labeling. The worker places the container in the middle chamber (shower containment). The worker in the clean chamber then reaches in and lifts the container into the clean chamber. The worker inspects it and if not already labeled, attaches the proper labels. The worker then passes the container to the outside worker who transports the container either to the waste transport vehicle or to a holding area. At no time shall z-flaps of transfer system chambers be taped, held or otherwise blocked open. The Contractor must not allow more than one poly airlock doorway to be open at any one time. This prevents a tunnel system and a breakdown in the isolation of the work area. Negative pressure must be maintained during all waste load-out activities.

The contract documents or the Owner's CAC may in allow a one or two chamber system for waste pass out to be used for some projects, as long as the Owner's CAC agrees to the work practice. As with a three-chamber system, in a one or two chamber system, the Contractor may never allow more than one poly air flap doorway to be open at any one time. For example, a one chamber system would function in the following manner. Workers in the work area rinse and seal the initial waste container. They hand the initial container to a worker in the load-out chamber. That worker verifies that the container is clean and then places it into the second container which will be either another bag or lined ridged-wall container depending on the specifications. The load-out worker then seals the container and applies the appropriate labels. The sealed, labeled container is then passed to the outside workers who transport it to the waste transport container or holding area.

The exit from this airlock shall be secured to prevent unauthorized entry.

SECTION 17. CLEAN-UP PROCEDURE

Part 17.1 - Clean-up Procedure

Remove and containerize all visible accumulations of asbestos-containing material and asbestos-contaminated debris utilizing rubber dust pans and rubber squeegees to move material around. DO NOT use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

Wet-clean all surfaces in the work area using rags, mops and sponges as appropriate. Note: Some HEPA vacuums might not be wet-dry vacuums. To pick up excess water and gross wet debris, a wet-dry shop vacuum with HEPA filter may be used.

Airless sprayers and water hoses shall not be used in a "power washing" fashion on any surfaces unless approval is provided by the CAC.

The Contractor shall remove each cleaned layer of polyethylene sheeting from walls and floors. Windows, doors, HVAC system vents and all other critical barriers shall remain sealed. The pressure differential units shall remain in continuous operation. Decontamination enclosure systems shall remain in place and be utilized.

Remove all containerized waste from the work area. Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.

Contractor shall clean work area and conduct a pre-clearance visual. Once pre-visual has been passed by the Contractor, the containment shall allow time for the airborne dust to settle within containment for 24 hours, then return and re-clean by HEPA-vacuuming and/or wet-cleaning all objects and surfaces in the work area again. At this point Owner's CAC will conduct the final visual. If the final visual inspection fails, the Contractor must re-clean area the work area until a final visual inspection is found acceptable to the CAC. Once the final

visual inspection is passed by the CAC, Contractor will be allowed to encapsulate the containment area, unless encapsulation of containment has been disallowed in the scope of work or material specific specification.

The Contractor may request a reduction in the 24 hour waiting period, if personal samples collected during the abatement work and detail clean-up work have shown fiber levels below the PEL. Reduction of waiting period must be made in writing, accompanied by personal sample results from this project. The Contractor must acknowledge that reduction in waiting period may result in failed clearance air samples and that retaking and re-analyzing these air samples will be at the Contractor's expense. Any reduction in waiting time will be at the discretion of the Owner's CAC and client.

Part 17.2 - Visual Clearance Criteria

The **Contractor** shall perform a pre-final visual inspection of the regulated work area and adjacent surfaces prior to requesting that the Owner's representative conduct a final visual inspection. The pre-final visual performed by the Contractor shall verify that all materials have been completely removed from the work area, and that the work area meets the requirements specified in Section 17.

In addition, the level of cleanliness in all work areas where asbestos has been removed shall meet the final clearance criteria established in the ASTM E1368-90 Standard Practice for Visual Inspection of Asbestos Abatement Projects.

Upon completion of the pre-final visual inspection by the Contractor a final visual of the containment area will be performed by the Owner's representative. The CAC will determine the clearance criteria for the project. At a minimum, no three dimensional debris shall be left within the work area; all poly shall be wet wiped so that no visible dust or debris is left; the decontamination chambers shall be clean of all debris; the waste transfer area shall be clean of all debris; all equipment and supplies shall be clean of all debris. The Contractor shall not be released to encapsulate the containment until receiving acceptance by the CAC stating the removal area and the containment have met the criteria of the CAC for completeness of removal and cleanliness of the containment barriers and surfaces.

The Owner's CAC will conduct the final visual inspection of the work area for visible residue. If any accumulation of residue is observed, it will be assumed to be asbestos and the 24 hour settling period/cleaning cycle will be repeated.

Additional cleaning cycles shall be provided by the Contractor, as necessary, at no cost to the Owner until the specified clean criteria have been met.

Owner's CAC has final say on whether or not an area meets these requirements.

Following the satisfactory completion of clearance-air monitoring, remaining barriers may be removed and properly discarded as non-asbestos containing waste. If contamination exists behind these critical barriers, additional cleaning will be required.

The Owner, Contractor and Owner's CAC shall jointly review the work area and make a damage assessment, after clearance air samples have passed and containment has been torn down.

SECTION 18. CLEARANCE AIR MONITORING

When required, clearance air sampling shall be performed following the requirements specified in Section 18 after encapsulation of the containment has taken place and a sufficient amount of time has passed to allow the encapsulant to dry. The Owner's CAC shall determine the method of analysis to be used based on the amount and type of material removed within a containment. If at a K through 12 site and the quantity of Asbestos-Containing Material (ACM) exceeds 160 square feet or 260 linear feet, analysis of air samples must

be by transmission electron microscopy (TEM) per US EPA AHERA regulations.

Clearance-air monitoring shall proceed 24 hours after lock-down or when the area is dry, whichever is later.

Contractor may request a reduction in the 24 hour waiting period, if personal samples collected during the abatement work and detail clean-up work have shown fiber levels below the PEL. Reduction of waiting period must be made by the Contractor accompanied by personal sample results from this project. The Contractor must acknowledge that reduction in waiting period may result in failed, or overloaded (with encapsulant) clearance air samples and that retaking and re-analyzing these air samples will be at the Contractor's expense. Reduction in waiting time will be at the discretion of the Owner's CAC and the Owner.

Air samples will be taken using the "aggressive" air sampling techniques described in the AHERA regulations unless noted differently in the scope of work for non-AHERA sites. In the case aggressive samples cannot be collected (e.g. in a dirt floor area) this will be noted in the Owner's CAC's notes.

If PCM analysis is used for clearance air samples, all clearance samples at all locations shall indicate a fiber concentration of less than or equal to 0.01 f/cc for release of the work area.

If TEM analysis is to be used for clearance air samples, then the clearance criteria shall be the same as AHERA, unless otherwise specified in the scope of work.

Areas exceeding these levels shall be re-cleaned and, if appropriate, re-encapsulated at no additional cost to the owner. All areas where clearance air samples fail will be re-tested.

The Contractor shall be responsible for all subsequent air sampling costs if air samples fail to meet clearance criteria levels. This cost includes four hours of time for Owner's CAC personnel to collect the air samples and the cost of laboratory analysis.

SECTION 19. MONITORING

Owner reserves the right to perform air and performance monitoring at any time.

Contractor shall provide personal air monitoring in accordance with Cal/OSHA regulations. Results shall be made available to the Owner's CAC within 72 hours of collection. Hard copies or electronic copies of these results shall be supplied to the Owner's CAC within 7 days of collection. Failure to supply these sample results in specified time may cause work to be stopped until all delinquent results have been submitted. Loss of Contractor work time because of non compliance with the provisions of this paragraph will not extend the date for work completion.

Owner's CAC may take air samples prior to, during, and after the project. Work shall not be considered complete until all air sampling has been completed and satisfactory levels have been obtained. Satisfactory levels shall be those established by AHERA, unless more stringent requirements have been identified in any other section of this Specification.

In areas where soil contamination may be present, soil samples must meet specified criteria in any other section of this specification prior to clearance air samples collection.

Owner, or Owner's CAC, shall be authorized to issue a STOP WORK order whenever the Contractor's work or protective measures are not in accord with published regulations or contract specifications.

SECTION 20. DISPOSAL PROCEDURES**Part 20.1 - Disposal Procedures**

Disposal bags shall be of 6 mil poly, pre-printed with labels as required by DOT, Cal/OSHA and the Department of Toxic Substance Control (DTSC) regulations.

Disposal drums shall be metal or fiber board with locking ring tops to be used only if required and/or allowed by selected dump site.

Stick-on labels as per OSHA and DTSC requirements for disposal containers shall be provided. All containers shall be labeled in accordance with DOT, Cal/OSHA and the DTSC regulations that require a "Caution" label and a "Hazardous Waste" label with the generator's name, address, and Manifest Document number.

As the work progresses, to prevent exceeding available storage capacity on site, sealed and labeled containers of asbestos-containing waste shall be removed and transported to the prearranged disposal location.

Disposal shall be at permitted waste facilities for the type of waste. Transport vehicles shall be marked with the sign prescribed by OSHA during loading and unloading to warn people of the presence of asbestos.

All dump receipts, trip tickets, waste manifests, Waste Shipment Record (WSR) and other documentation of disposal shall be delivered to the Owner, for its records. The manifest shall be signed by the Owner, the waste transporter, and the Disposal Site Operator as the responsibility for the material changes hands. If a second waste transporter is employed, his name, address, telephone number and signature should also appear on the form. The WSR, if used, shall be signed by the Owner or its agent and the disposal site operator.

All manifests shall have asbestos waste identified as: "RQ, Asbestos, 9 NA2212, III". This requirement may be changed as new regulations are issued. See "Waste Disposal" requirements at end of "General Requirements".

All manifests shall be accompanied by a "Notice and Certification". A signed copy of this must be provided to the Owner or its agent.

Part 20.2 - Transportation to the Landfill

Once drums, bags and wrapped components have been removed from the work area, they shall be loaded into a fully enclosed truck or waste container, which has been lined with 6 mil poly sheeting on the walls and floor. The exception to a fully enclosed waste truck is for roofing projects and when waste loads are generated and placed into open top lined waste trucks that will be "burrito wrapped".

When moving containers, utilize hand trucks, carts and proper lifting techniques to avoid back injuries. Trucks with lift gates are helpful for raising drums during truck loading.

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

No waste containers shall be on site which contain other hazardous waste, or hazardous waste from any other source or job site. Waste from multiple sites of the Owner within the same waste container is acceptable; however, it must be manifested separately.

If Contractor is storing waste from various sites of one owner, all transportation vehicles shall be covered by the same regulations as the waste container or truck being used to haul the waste to the dump. If equipment or supplies are to be left in vehicles during hauling of waste to waste container or truck, waste and

equipment/supplies must be separated by a solid (wood or metal) barrier which has been sealed as a critical barrier. A poly wall barrier is not sufficient.

Waste container, truck, or storage bin must be locked at all times except when being filled.

It is the Contractor's responsibility to see that all waste containers, trucks, and storage bins arrive on site completely free from debris.

The contractor shall provide a weight receipt that identifies the net weight of the material being discarded.

Part 20.3 - Disposal at the Landfill

Upon reaching the landfill, trucks are to approach the dump location as closely as possible for unloading of the asbestos-containing waste.

Bags, drums and components shall be inspected as they are off-loaded at the disposal site. Material in damaged containers shall be re-packed in empty drums or bags as necessary. Local requirements may not allow the disposal of asbestos waste in drums. Check with appropriate agency and institute appropriate alternative procedures.

Waste containers shall be placed on the ground at the disposal site, not pushed or thrown out of the trucks.

Personnel off-loading containers at the disposal site shall wear protective equipment consisting of disposable head, body and foot protection and, at a minimum, half-face, air-purifying, dual cartridge respirators equipped with high-efficiency filters.

Following the removal of all containerized waste, the truck cargo area shall be decontaminated using HEPA vacuums and/or wet methods to meet the no visible residue criteria. Poly sheeting shall be removed and discarded, along with contaminated cleaning materials and protective clothing, in bags or drums at the disposal site.

SECTION 21. PATENTS AND PREVAILING WAGES

Part 21.1 - Patents

Contractor shall pay all royalties and license fees required for the performance of the work. Contractor shall defend suits or claims resulting from Contractor's or any Sub-contractor's infringement of patent rights and shall indemnify Owner and Owner's representative from losses on account thereof.

Part 21.2 - Prevailing Wage Requirements

The asbestos abatement contractor is fully and totally responsible at all times for compliance with payment of prevailing wage rates pursuant to provisions of the California Labor Code, for compliance with Division 2, Part 7, Chapter 1, California Labor Code, including but not limited to Section 1776; and for compliance with California Labor Code, Section 1777.5 for all apprentice able occupations.

SECTION 22. PERMITS AND FEES

If any permits are required to be issued for any of the Work to be performed by Contractor, Sub-contractor(s) or Sub-subcontractor(s) as part of the Project, it shall be the sole responsibility of the Contractor to expeditiously obtain all such permits and any costs incurred by the Contractor in obtaining such Permits shall be included within the Contract Price.

SECTION 23. SPECIFIC PROCEDURES AND REQUIREMENTS

NOTE: All Specific Procedures and Requirements listed in Section 23 shall be reviewed by the Contractor along with the Scope of Work issued for the project. If any perceived conflicts are present between the Scope of Work and these specifications or within the General Requirements specification itself, the Contractor shall ask for a written interpretation from the Owner's CAC prior to submission of his bid. If conflicts in the "Scope of Work" and this specification or with the General Requirements specification itself are discovered after the start of abatement, the more stringent specification and/or requirements will be enforced. The Owner's CAC shall make the determination as to what which requirements and/or specifications are more stringent.

Part 23.1 - General Repair of Damaged Thermal System Insulation (TSI)

Where TSI has been damaged, and it is feasible to repair the small nicks, cuts, and exposed ends, the following procedures shall be performed:

1. Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.
2. Place 4-6 mil poly sheeting directly under the area to be worked to collect any fallen debris or repair compound.
3. Half-face respirators and disposable coveralls shall be used during this work.
4. The area shall be restricted to those personnel involved in the work, so posting of the accesses is required. In some cases, poly shall be used to cover the access points.
5. A HEPA vacuum must be in the immediate area to pre-clean any debris observed surrounding the damaged section, or in the event of a mishap.
6. If work is performed indoors, the ventilation system shall be off in the areas worked in to prevent fiber distribution. The ventilation supply, return and exhaust ducts shall be sealed with 6 mil plastic sheeting and duct tape.
7. It may be necessary to remove small sections of other insulation material, such as fiberglass, if debris from the damaged pipe covering has contaminated it.
8. In some cases HEPA vacuuming the damaged section will collect all loose, hanging, friable insulation material prior to any further repair work.
9. Very small cracks, holes, nicks, and cuts can be repaired with only a joint compound or with a single layer of wettable cloth and appropriate bridging encapsulant. Larger sections of damaged pipe covering, particularly where pipe hangers or metal channel have damaged the insulation, will require at least two layers of wettable cloth such as HardCast by Carlisle Industries.
10. Where the pipe covering cannot be removed completely from penetrations in the walls, floors, or ceilings, the pipe covering shall be removed at least 1" into the opening and sealed with a bridging encapsulant to grade. The Contractor may choose to fill large gaps with fiberglass insulation, prior to sealing with the encapsulant.
11. All of the Contractor's materials, including poly sheeting, tape, joint compound, etc. shall be removed at the completion of the work performed.

Part 23.2 - Thermal System Insulation (TSI) Removal and Glove Bag Technique Requirements

Where glove bag technique is specified for removal of Thermal System Insulation (TSI), or in those areas where the Contractor opts to use glove bags, all of the following conditions must be met:

1. Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.
2. The Contractor shall follow the procedures recommended by the manufacturer of the glove bags, and the specifications required by Federal OSHA and Cal/OSHA regulations.
3. All critical openings shall be sealed prior to set up of the containment.
4. At least one layer of 6 mil poly must be used to fully enclose/contain the abatement area.
5. Stationary objects in the immediate area of the room which cannot be removed from the work area must be covered with at least one layer of 4 mil poly sheeting after being pre-cleaned.
6. A minimum three stage decontamination unit with a shower shall be contiguous with the containment for areas requiring removal of more than 6 linear feet of TSI.
7. Negative pressure shall be established and a recording manometer shall be attached to the containment per Section 13.
8. A HEPA filtered vacuum shall be in the immediate area for use in conjunction with the bags or in case of a spill.
9. Glove bags may not be used on surfaces where temperatures exceed 150 degrees Fahrenheit.
10. Glove bags may be used only once, and may not be moved or slid for removal of a second section of TSI.
11. At least two persons shall perform Class I glove bag removal as defined by Federal and Cal/OSHA.
12. Before beginning the operation, loose and friable material adjacent to the glove bag operation shall be wrapped and sealed in two layers of 6 mil poly sheeting or otherwise rendered intact.
13. The Contractor shall apply a sufficient volume of amended water to all pipe covering scheduled for removal while it is enclosed in the glove bag.
14. Prior to placement in the disposal bag, glove bags shall be collapsed by removing air within them using a HEPA filtered vacuum.
15. Upon detachment, the glove bag must be immediately placed into at least two 6 mil thick disposal bags. The disposal bags must be sealed using the "gooseneck" sealing technique.
16. Where pipes enter walls, floors, or ceilings which are not within the scope of the project, the pipe covering shall be removed at least 1" into the structure and the pipe covering end must be sealed with bridging encapsulant and/or wettable cloth.
17. Where powered lifts are required to access ceiling level pipes or pipe fittings, and no more than one linear foot of pipe insulation material will be removed in any one glove bag operation, a negative pressure containment will not be required. All other glove bag removal requirements remain in effect.
18. If the Contractor chooses to use a Negative Pressure Glove Bag System, Negative Pressure Glove

Box System, or Water Spray Process System in lieu of the traditional Glove Bag System, the Contractor shall submit to Owner's CAC detailed written procedures on those systems which will be used. In addition, air sampling data, generated by the Contractor, must be provided to Owner's CAC. Owner's CAC must provide prior approval to alternate techniques and approaches to those specifications detailed here.

- 19. The Contractor is responsible for salvage and decontamination of all pipe system supports, hangers, brackets, saddles, etc. These items shall be inventoried by the Contractor, and verified by the Owner's CAC before and after abatement. The Contractor will be responsible for replacement of any items lost or damaged.
- 20. The Contractor shall be responsible for ensuring the piping system remains adequately supported at all times. This may be achieved by readjusting existing hanger brackets as insulation is removed, or by other approved methods, such as inserting wood blocks to replace the thickness of the removed insulation.

Part 23.3 - Mini-Cube Enclosure Requirements

- 1. Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.
- 2. For the purposes of these specifications, "mini-cube enclosure", "enclosure", "mini-enclosure", and "mini-cube" are all used interchangeably and mean the same. The mini-cube enclosure is required to be constructed whenever small sections of walls, ceilings, or pipe insulation are to be removed for electrical, plumbing, mechanical, etc., work. The purpose is to create an enclosed and controlled work environment while removing asbestos or accessing an attic space which is contaminated.
- 3. Enclosure walls and floors must be constructed of at least one layer of fire-rated 6 mil poly sheeting. No visible holes, cracks, penetrations, etc. shall be within this enclosure. The upright frame shall be adjustable in order to butt the top of the enclosure to the wall or ceiling area. A single drop layer of 6 mil poly sheeting shall be put down and removed daily at the end of the work shift.
- 4. Since the top of the enclosure must be open in the chamber where ceiling access will take place, special care must be taken prior to moving the enclosure. If the mini-enclosure is designed to be portable, the enclosure must be sealed at the top prior to being moved to the next location. This may be achieved by temporarily sealing the top with poly and tape from the inside.
- 5. For access to an attic space, position the enclosure at the location to be worked. The enclosure must be butted up to the ceiling surface to form a semi-seal between the top of the enclosure and the ceiling. The enclosure can then be completely sealed to the ceiling, using tape. After a seal has been established, access into the ceiling can then proceed.
- 6. A HEPA vacuum shall be used to establish "negative pressure" or airflow into the enclosure. This shall be verified by using ventilation smoke tubes.
- 7. The following equipment and materials, at a minimum, must be present inside the mini-enclosure "dirty" chamber:
 - 6 mil poly bag for waste.
 - Flashlights or drop light as appropriate.
 - Daily change of 6 mil poly sheeting drop layer.
 - Other tools needed to perform task.

Clean potable water in a Hudson-like sprayer.

HEPA Filtered Vacuum

8. The outside of the poly-flapped entry to the mini-cube must be posted with the CAL/OSHA required warning signs.
9. Clean disposable coveralls must be worn entering the mini-enclosure, and must be removed prior to leaving the mini-enclosure. Depending upon the work being performed, the Contractor may choose to "double suit" in disposable coveralls.
10. For work involving removal of greater than 25 linear feet of TSI, or greater than 10 square feet of asbestos containing surfacing material, regardless of method to be used, a shower must be attached to the mini-cube enclosure and be contiguous with the work environment, and comply with all other requirements in related sections of this Specification.
11. If there is removal of greater than 3 linear feet of TSI, or greater than 3 square feet of surfacing material, regardless of the method used, the enclosure must remain in place until a final visual is passed. Clearance air samples may be required and if so will be collected by the Owner's CAC. Where work involves less than these quantities, only a final visual inspection by Owner's CAC will be required prior to removal of the mini-enclosure.

Part 23.4 - Roofing Abatement Requirements

General Requirements

1. If interior ceiling materials will be removed during this project, removal of ceiling materials must be done prior to removal of exterior roofing materials. No ceiling material should be replaced until all roofing material has been removed. This will allow any debris to be removed from the rooftop area.
2. Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.
3. The work shall be coordinated and scheduled when there are favorable weather conditions, such as, performing the abatement work when the forecast is for "clear skies" and no rain for three or more consecutive days. The Contractor shall remove only that amount of roofing material which can be re-roofed or covered, and secured from the weather.

Work may be halted at the discretion of the Owner's CAC if wind conditions occur which can or does cause removed roofing materials to be blown off the roof area, or beyond the designated removal area perimeter. All roofing work shall be coordinated to allow other trades to work at the same time as long as their work is located in areas where contamination cannot occur. No cutting, sanding, grinding, or removal of any type will take place until all preparations for removal have been completed and inspected by the Owner's CAC. This section may be amended in other sections of this Specification for this project.

The words "clear skies" are used as a means of indicating favorable weather conditions. These two words do not mean, nor are they intended to require skies be clear and free of clouds, fog, or other meteorological conditions which are not expected or forecast to produce measurable rain. The follow up requirement of no rain for three or more consecutive days is to help clarify the favorable weather condition requirement. The Contractor should not to be over optimistic and create more open roof areas than can be re-roofed, secured, or properly protected from weather in case the forecast changes unexpectedly or without warning.

4. All work hours at the site shall be determined by the Owner or as defined in other sections of this Specification.
5. All work shall be coordinated with the other trades involved on this project, with central coordination being primary between the abatement Contractor and the General Contractor for the project. However, Owner's CAC must be notified of projects in advance as stated in other sections of this Specification.
6. The Contractor shall provide all necessary equipment, tools, materials, lighting, labor, etc. to perform the work. Sufficient lighting shall be provided to illuminate the entire removal and transit areas for removal of roofing material, and for the final visual inspection by the Owner's CAC if the work is to be performed at night.
7. All HEPA equipment to be used on the project must be delivered to the site empty of all debris, clean, free of dust, and in full operating condition. HEPA equipment to be used inside any building must have been DOP tested within the last 90 days. This DOP certification must be verified by Owner's CAC prior to its use.
8. The Contractor shall provide worker safety according to all OSHA regulations (Title 8), including use of tie-offs, harnesses, and lanyards. Particular attention shall be given to the placement and securing of accesses (ladders, etc.) to the roof.
9. All ladders used shall conform to Cal/OSHA requirements. The ladders shall extend at least three feet above the roof line, and shall be tied off to the building to prevent them from sliding.

Contractor Responsibilities

1. The Contractor shall be responsible for securing all exposed roof surfaces, including any roof penetrations against weather after roofing materials have been removed. Protection of the roof must be made with an impermeable barrier to prevent water from entering the building structure.
2. The Contractor will be responsible for all clean-up and costs associated with the decontamination of occupied spaces in the event of contamination of an occupied space.
3. The Contractor is responsible for any contamination of the attic space above the existing ceilings inside the buildings caused by their work, except as noted specifically in Section 24, Asbestos Specification/Procedures.
4. The Contractor is responsible for damage to the roofing substrate, and will be responsible for repair or replacement if damaged.
5. The Contractor is responsible for removal of all roofing layers and associated materials such as roofing nails, insulation, fiberboard, etc. down to the wood or metal substrate regardless of asbestos content, unless otherwise noted in Section 24, Asbestos Specification/ Procedures. When it is unknown how many layers of roofing materials exist, it must be assumed that there are multiple roofing layers present. The Contractor may, upon request and approval by the Owner, collect core samples of any roof to be removed for the purpose of determining its depth and structure. If coring is conducted, it is the responsibility of the Contractor to repair to industry standards using non-asbestos materials the areas affected.
6. The Contractor is responsible for removing all roofing nails, and driving in all nails used for securing the roofing substrate after roof material has been removed. The Contractor will not be required to remove silver painted or tar coating on conduit, roof jacks, heating, ventilation, and air conditioning (HVAC) equipment, flashing, etc. which will be reused by the Owner. Where flashing is to be reused, the Contractor shall carefully remove and save the flashing in an undamaged condition, unless

otherwise required by the Owner. This section may be amended in Section 24, Asbestos Specification/Procedures for this project.

7. The Contractor is responsible for removal and replacement of wood block or metal supports which may be present under conduit, gas lines, piping, HVAC units, ducts, etc. in order to perform the work. The Contractor is also responsible for temporarily installing wood blocks for any existing roof structures during the roofing removal, when it is necessary to remove existing support members to accomplish the work.
8. The Contractor is responsible for damage to all equipment and existing cables which are present on the roof. The Contractor is responsible for damage to electrical wiring, telephone lines, antenna wires, and other conduits which are present. An inspection for pre-existing conditions is the responsibility of the Contractor, but may also be conducted by Owner's CAC.
9. The Contractor is responsible for obtaining all necessary permits to perform this work, including any local permits for work in the evening/night hours.
10. Standards of cleanliness for fluted metal decks located underneath asbestos-containing roofing materials. It is possible for the abatement crew to remove the asbestos-containing roofing materials without breaking through or removing the underlying non-asbestos insulation material. If removal of top layer of asbestos roofing materials and leaving the non-asbestos materials in place is performed as described above, and the insulation material remains intact, Owner's CAC can conduct a final visual for asbestos-containing debris. Once this inspection has been completed, and the requirement for no remaining asbestos-containing debris on the roof is met, the insulation layer can be removed.

At this point, asbestos is no longer an issue, and Owner's CAC will allow minor amounts of the non-asbestos debris to remain in the fluted areas of the deck. General cleaning of the flutes is conducted to a point where the amount of debris remaining is reduced to a minimal amount without having to completely clean or vacuum the flute channel.

The Owner is unaware of any potential hazard which could be caused by leaving some non-asbestos debris, and does not consider it necessary to have the flute channels detailed beyond generally clean conditions. However, if the fiberboard layer is extensively damaged during removal of the asbestos-containing materials, and asbestos-containing roofing debris cannot be distinguished from non-asbestos containing roofing materials, all flutes shall be vacuumed and cleaned as set forth in the project specifications.

Owner Responsibilities

1. The Owner is responsible for closing all windows in the building where the asbestos roofing material will be removed. This must be done prior to the asbestos abatement contractor arriving onsite for the work shift, in order to prevent delays.
2. The Owner shall also be responsible for cutting or trimming back all trees, limbs and other vegetation which may impact the removal of the existing roofing materials.
3. It is assumed that the buildings associated with this project have roof decking which may include any number of construction methods which allow for roofing debris to sift into joist spaces, or attics located beneath areas where roofing may have previously been removed. Therefore, it must be assumed that all inaccessible and accessible attic spaces, joist spaces, and even flutes of metal decks involved with this project will become, or have already been contaminated with asbestos, and shall be noted.
4. The Owner acknowledges that the removal of any roofing materials during this project will result in contamination of the attic spaces, and assumes any associated responsibilities unless specified

differently in the scope of work.

General Roof Removal Instructions and Requirements

1. Removal of non-friable asbestos-containing roofing is designated as Class II work. Half-face respirators and disposable coveralls shall be used at a minimum by all workers, at all times, when within the regulated area.
2. No personnel will be allowed into the regulated area during actual removal work without proper respiratory and personal protective equipment. Work boots with hard soles are required to be worn by all abatement personnel. No athletic, street, or dress shoes are to be worn during work activities.
3. All roofing material shall be removed in an intact state to the extent feasible.
4. All roofing is to be removed wet by an amended water solution or encapsulant as necessary.
5. The abated roof area shall be HEPA vacuumed after roofing materials have been removed. Particular attention shall be directed at the flute channels of metal decks.

Additional Requirements for Removal of Nicolite (Nicolet) Roofing Felts

1. Set up of perimeter barriers shall be extended to 30 feet from roof edge at ground level. Contractor shall be required to use barrier tape stamped with, "DANGER ASBESTOS HAZARD" in black letters on a solid red background or equivalent.
2. Pre-wetting of materials utilizing amended water must attain complete and thorough penetration of the felts prior to their removal, and additional application of amended water shall be performed as necessary throughout the removal and bagging process.

Pre-Abatement Preparation Requirements

1. The Contractor shall seal all air intakes associated with the HVAC units which are on or near the roof under abatement, and at adjacent HVAC units, particularly downwind from roofing removal activity. In addition, all louvers, window mounted fan systems, attic openings, etc., shall be sealed as critical barriers. The Contractor is responsible for sealing all HVAC openings as critical barriers using one layer of 6 mil poly. These critical barriers shall be installed at the beginning of each shift, and removed at the end of each shift prior to reuse by the Owner. If the building will not be reoccupied daily, the barriers may stay in place.

The perimeter of the roof where removal is to be conducted, shall be posted with barrier tape at a distance of at least 20 feet from the edge of the removal area. This barrier tape will provide a buffer zone, and assist in the restriction of non-abatement personnel.

Poly sheeting shall be placed on the ground directly below the work area or on the adjacent roof surfaces at least 10 feet. The Contractor shall secure the poly to the ground using tape, weights, or other means to secure the poly from being picked up by wind or becoming a trip hazard. The Contractor shall secure the poly to the adjacent building surfaces with tape, etc.

Waste containers and Waste container Preparations

1. The Contractor is responsible for inspecting all waste containers delivered to the job site for load worthiness. The Owner's CAC reserves the right to refuse any waste container without any additional cost to the client, which upon examination, and in the opinion of the site representative, has a high probability of failure of doors, skids, walls, floors, or which contains other debris.

2. The Contractor shall be required to place footing materials of sufficient thickness, strength, and size under the casters, footings, and/or runners of waste container(s) to prevent damage of property surfaces. The Contractor is responsible for all damages to Owner's property caused by the delivery, placement, or removal of a waste container. Damaged property shall be repaired to equal or better condition than was present prior to the activity causing the damage. This section may be amended in Section 24, Asbestos Specification/Procedures for this project.
3. Unless the roofing material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane, or hoist. All waste shall be sufficiently wetted with amended water to prevent fiber release. If fiber release cannot be prevented, then the chute and bin must be within a negative pressure enclosure. In no case shall roofing materials be dropped or thrown into bins or waste containers from the roof.

Posting and Label Requirements for:

Regulated Area Entry Points and Waste container Perimeters

Access to regulated areas shall be posted as outlined by Cal/OSHA Title 8, 1529 (k)(7)(B) 1 and 2 with warning signs. Perimeters of waste container(s) shall also be posted as outlined by Cal/OSHA Title 8, 1529 (k)(7)(B) 1 and 2 with barrier tape bearing the following information:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

These postings are required to warn non-abatement personnel of the restricted access, and potential hazard which exists in the vicinity of the regulated areas and waste container(s).

Building Perimeter at Ground Level

Building perimeters shall be posted with barrier tape bearing one of the following descriptions:

- CAUTION** in black letters on a solid yellow background.
- DANGER** in black letters on a solid red background.
- DANGER ASBESTOS HAZARD** in black letters on a solid red background.

Waste Material Containers

Waste material containers, including the "burrito wrapped" material, shall have warning labels affixed in accordance with Cal/OSHA Title 8, 1529 (k)(8)(A-D).

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

Waste Disposal and Documentation Requirements

1. Roofing waste may be disposed as non-hazardous asbestos waste, in a landfill permitted to accept non-friable, non-hazardous asbestos roofing material. If the asbestos roofing material is currently

friable, or becomes friable during its removal, it shall be disposed of in a landfill permitted to accept friable asbestos waste.

It is acceptable to dispose of bagged or sealed roofing waste into open topped waste containers lined with a single layer of 10 mil poly sheeting. The Contractor shall completely enclose all roofing waste material commonly known as "burrito wrap" in the waste container using 10 mil poly sheeting. Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such a manner as to preclude the dispersion of dust. In addition to the 10 mil poly sheeting, the top of the waste container shall be completely enclosed with a tarp which is secured to the vehicle for transport or storage on-site if left overnight. The type of material for the tarp shall meet all requirements for transport of hazardous materials.

2. The Contractor is required to provide to Owner's CAC a copy of the "trip tickets" indicating the actual weight of waste material.

Visual Inspection Forms-Interior and Exterior (Roof Removal Shifts Only)

The Owner's CAC shall conduct visual inspections inside each building space prior to each work shift to determine existing conditions, including loose or dislodged acoustical ceiling tiles.

In addition, all interior spaces directly below the area of work shall be visually inspected by the Owner's CAC, at the end of the work shift, to inspect for roofing debris and for loose or dislodged ceiling tiles, etc.

The Contractor is responsible for all costs associated with clean-up of any debris which falls in the occupied spaces of the building.

The Contractor is responsible for providing adequate lighting during all phases of work. This includes final visual inspection by the Owner's CAC, of the removal area and adjacent surfaces impacted during the work.

The Contractor shall perform a pre-final visual of the removal area and adjacent surfaces prior to requesting that the Owner's CAC conduct a final visual inspection. The pre-final visual performed by the Contractor shall verify that all materials have been completely removed from the work area as specified, and all poly sheeting or tape placed over any vents or equipment which has been removed. The Contractor will also verify that all perimeter poly sheeting on adjacent surfaces has been picked up, and all debris generated by the roofing work such as gutters, flashing, roofing products, paper, nails, screw, etc. have been placed into the waste container.

Protection of Accessible Attic Areas

Any plumbers plenums which may be located below areas where roof removal will take place and the roof deck is not constructed of plywood or solid sheet metal, shall be protected with poly barriers prior to work being performed. Any and all debris which may get into a plumbers plenum will be the responsibility of the Contractor and must be cleaned up by the abatement contractor. A final visual inspection by Owner's CAC will be required prior to allowing the abatement contractor to move to the next designated removal location.

Caulking and Poly Barrier Requirements

Roof removal may cause dust and debris to enter attic areas through gaps between roof deck boards. This dust and debris could enter the interior building areas through gaps and penetrations in the ceilings. The Contractor shall caulk all identifiable gaps in the ceilings, excluding areas specified to be protected with poly barriers. Typically this will require caulking along curtain tracks, lowering lighting trim to caulk around junction boxes, and caulking gaps around the ceiling edges. The Contractor is responsible for all costs of decontamination and clearance sampling of interior areas if dust and debris fallout occurs.

All caulking work shall be performed using an Owner approved, paintable material which matches the existing color of the surface, and shall be applied to industry standards with a smooth finish. Caulking must be

performed at least five days prior to roof removal work to allow Owner's CAC time to inspect the work completed.

Exterior corridor areas shall not require caulking, however, all grooves shall be thoroughly cleaned of debris by HEPA vacuuming immediately following roof removal. When construction of an overhang or covered walkway is such that prolonged fallout of roofing debris can be expected to occur, the Contractor shall install and maintain a poly barrier below the roof substrate until debris fallout has ceased.

Where exposed tongue and groove wood or roofing substrates are visible, which do not provide a solid barrier between the roof deck and the interior of a building exist, the Contractor may choose to install poly barriers in lieu of caulking. These poly barriers must be air tight and secured to the building surfaces. Spray glue shall not be used to attach any materials to any building surfaces unless approved by the Owner. These poly barriers shall remain in place for the duration of the roof removal and roof replacement activities. During the removal of the poly barriers, the Contractor shall carefully process all asbestos debris captured, either by wetting, HEPA vacuuming, or both, to prevent loss of debris and contamination of interior spaces. The Contractor is responsible for any damages to interior surfaces, and shall repair all finishes to the Owner's satisfaction.

Part 23.5 - Vinyl Floor Tile (VFT), Sheet Vinyl & Associated Adhesive Abatement Requirements

General Requirements

Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.

For the purposes of this project any direction to remove asbestos-containing or assumed asbestos-containing VFT shall include the removal of the base cove, as well as, the adhesive/mastic used to secure the VFT and/base cove regardless of its asbestos content. Any mastic which has not been tested for asbestos content must be assumed to contain asbestos and removed by the abatement contractor prior to the performance of a final visual by the Owner's CAC, and final air testing of the containment.

Removal of asbestos-containing VFT shall require a negative pressure enclosure/containment be constructed prior to removal, including installation of critical barriers, a splash guard of plastic at the lower 3' of wall from floor level, a sufficient number of DOP tested negative air units to attain a level of at least -0.030" of negative air pressure within the containment, a manometer, and at a minimum, a three-stage decontamination unit with an operational shower and water filtration system. Smaller areas of floor tile and mastic removal may only required a single stage decontamination area without the shower and will be described in the scope of work.

Whenever and wherever possible, the Contractor shall enclose multiple rooms within a building or wing into a single containment. Where rooms are joined by a common interior hallway or have a common exterior walkway, multiple spaces shall be joined together creating one containment using poly enclosures. Where multiple rooms in a building do not have a common interior hallway, multiple rooms shall be joined using a common work chamber built by the Contractor. The common work chamber shall be constructed of wood studs and plywood sheeting for security purposes, and shall be part of the decontamination chamber. Decontamination units and joined "common areas" outside of a building shall have lockable doors or gates created with temporary fencing for security during off-hours.

Bead blasting of materials will only be allowed with approval of Owner. Contractor must declare use of bead blasting to Owner/Owner's Representative prior to use of this method, since this is a mechanical method. If a solvent is used, the negative air unit exhaust shall be directed down wind of make-up air vents a sufficient distance to preclude the re-entrainment of vapors back into the building. Any solvents used for removing adhesive/mastic shall be non-toxic, low odor, non-flammable, and compatible with the new flooring adhesive/mastic.

A safety data sheet for the solvent(s) proposed for use shall be provided in the pre-construction submittal

package, all solvent(s) must be approved by the Owner's CAC prior to their use.

Except as amended here and in the "Scope of Work" Section, all other Sections of these specifications shall be followed.

Contractor Responsibilities

1. The Contractor shall provide all necessary notifications, equipment, tools, materials, lighting, labor, etc. to perform the work. Notification as appropriate to OSHA, EPA, or the delegated Air Quality Management District is the responsibility of the Contractor.
2. All HEPA equipment to be used on the project must be delivered to the site empty of any debris, clean, free of dust, and in full operating condition. HEPA equipment shall be DOP tested at the beginning of the set-up phase and prior to installation into the containment or use on the project. Any equipment removed from the site for more than 10 working days must be DOP tested again prior to re-use on the project.
3. DOP certification testing shall be observed and witnessed by an Owner's CAC. Copies of DOP test results and certification must be submitted to Owner's CAC within 24 hours of the testing being performed.
4. All poly sheeting to be used for the construction of full enclosures/containments must be fire retardant. SDS information reflecting this requirement must be submitted prior to use.
5. The Contractor shall be responsible for all clean-up and costs associated with the decontamination of occupied spaces adjacent to any containment where removal of asbestos-containing material is conducted. The Contractor shall also be responsible for damage to building finishes and costs associated with removal of tape glue, staining of wall finishes, or destruction of wall surface integrity. It is the responsibility of the Contractor to identify with the General Contractor all aspects of the project requirements pertaining to these types of damages.

General VFT & Adhesive/Mastic Removal Instructions and Requirements

1. For the purposes of this project, removal of VFT and associated adhesive/mastic by any method shall be performed by personnel who are properly trained and accredited to perform Class II work.
2. No personnel are allowed into the containment area during actual removal work without proper respiratory and personal protective equipment. At a minimum, this shall include half-face negative pressure respirators, full body coveralls, rubber boots, and gloves. During removal of adhesive/mastic with solvent or other organic based liquid, combination respiratory cartridges (organic vapor/HEPA) shall be worn, by workers to protect against asbestos and the solvent. Rubber gloves shall also be worn to protect workers skin from the solvent material. No street clothes or shoes shall be worn inside containment during the removal process.
3. All doors, windows, and penetrations into the room(s) shall be sealed with poly sheeting. All ventilation systems shall be locked-out and sealed with critical barriers of either poly sheeting or plywood sheeting. No spray glue may be used on any Owner property or building surface.
4. The splash guard shall be a minimum of 3 feet in height from the base of the wall upward.
5. Based on the size of the enclosure/containment, a three stage decontamination unit shall be put into place and be fully operable.
6. Sufficient negative air units shall be installed which will provide a minimum of four air changes per hour and -0.030" air pressure differential. A manometer with an recording chart shall be installed and

operational. The manometer chart shall reflect the location, times, and dates of all measurements recorded. Once these requirements have been met and the negative pressure has been established, the Contractor shall request a pre-start visual inspection from Owner's CAC.

7. When the Contractor has passed the pre-start visual inspection, removal of base cove/boards may be conducted. Base cove adhesive shall be removed completely on hard surfaced walls where damage to the substrate will not occur, or only to a point of smoothing out high spots on walls which will become damaged due to the work to be performed. Full removal is not expected unless the Contractor is notified in writing on these types of soft substrate surfaces and if required in the scope of work.
8. Sufficiently wet VFT with amended water prior to and during the removal phase of work, and place into waste containers for disposal. Acceptable methods of containing VFT waste materials include placing VFT into clear properly labeled 6 mil poly bag and deposit this bag into a lined fiberboard drum. The drum shall be sealed when filled and placed into a waste container for disposal.
9. Method of removal pertaining to asbestos-containing adhesive/mastic shall be at the discretion of the Contractor, except methods which are noted in this Exhibit that are prohibited. Hand scraping, solvents, and wet buffing with solvents are acceptable methods. If the Contractor chooses to use solvents, exhaust of negative air units shall be directed downwind as much as possible, or a sufficient length of exhaust hose will be required to prevent re-entrainment of the vapors.
10. To minimize damage to the existing paint above the base cove, the contractor shall use a utility knife to cut score the paint at the intersection of the base cove. This will allow removal of the base cove with minimal damage to the paint layer.
11. Any solvents used for removing adhesive/mastic shall be non-toxic, low odor, and non-flammable. A SDS for the solvent shall be provided and subject to approval by the Owner's CAC prior to use.
12. Upon completing the removal of all floor tiles and adhesive/mastic, the Contractor shall remove the splash guard from the containment walls, and conduct wet wiping on all surfaces within the containment/enclosure.
13. If a solvent was used to remove any VFT adhesive/mastic, the Contractor shall wash the floors thoroughly using a solution of trisodium phosphate (TSP), or equivalent, and water. Sufficient water shall be used for final rinsing of the floor for a clean finish.
14. It is the sole responsibility of the Contractor to reduce concentrations of any solvents used to a level which will allow new adhesive/mastic to be applied, if new flooring is to be installed. Owner's CAC will not test the floor for PH levels, and will not attest that the solvents used have been reduced in any way.

Final Visual Inspection

1. Upon the completion of all activities listed above, the asbestos contractor shall provide their own visual inspection prior to Owner's CAC, and shall be present during the inspection by Owner's CAC to remove/clean additional surfaces as needed, prior to encapsulation.
2. The final visual inspection will include an evaluation of all surfaces within the containment area, with emphasis placed on the completeness of materials removed from the floor area. Any three dimensional debris identified by the Owner's CAC, which can be seen using a flashlight placed on the floor and directed across the floor, shall be removed as directed with the use of a HEPA vacuum and other tools as necessary to remove the material. The Contractor shall thoroughly clean all equipment inside the containment, including all parts of the negative air units, and new pre-filters shall be installed into all negative air units.

Disposal Requirements

1. Asbestos containing floor tile and mastic waste may be disposed as a non-friable non-hazardous waste stream if they are removed by manual methods. If the materials are removed by mechanical means, the waste stream shall be disposed as friable hazardous asbestos waste and will require a Uniform Hazardous Waste Manifest. Package all solvent/mastic waste created during the project in sufficient absorbent to eliminate all free liquids, and place in a D.O.T. 7A Type A approved steel drum (49 CFR 178.350). Label the drum as required, and transport to an approved Class 1 landfill with a separate Uniform Hazardous Waste Manifest and Waste Profile Documentation.
2. The Contractor SHALL NOT sign any Hazardous Waste Manifests for the Owner. It shall be the responsibility of the Contractor to notify the Owner's CAC and coordinate having any manifest properly signed by a Owner representative.

Part 23.6 - Carpet Removal over Vinyl Floor Tile (VFT)/Tile Adhesive Requirements

Not Applicable

Part 23.7 - Boiler Unit Removal Requirements

Not Applicable

Part 23.8 - Sheetrock and Joint Compound Abatement Requirements

General Requirements

Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.

Removal of sheetrock and joint compound wall and ceiling system materials known to contain <1% asbestos as a composite material verified by the 400 Point Count method shall include the removal of all nails, screws, or other fastening units which have visible sheetrock and/or joint compound remaining, as well as, all dust, debris, and waste generated by the removal work.

Removal shall require a full enclosure/containment under negative pressure following all of the requirements in these specifications including a three stage worker decontamination unit.

Removal of less than 100 square feet of asbestos containing sheetrock and joint compound wall and/or ceiling system materials shall require a negative pressure enclosure, however, the use of a one stage decontamination unit without a shower will be permitted. All other containment requirements apply.

General Sheetrock and Joint Compound Wall and Ceiling Systems Removal Instructions and Requirements

1. No personnel are allowed into the containment area during actual removal work without proper respiratory and personal protective equipment. At a minimum this shall include half-face negative pressure respirators, full body coveralls, rubber boots, and gloves. No street clothes or shoes shall be worn inside containment during the removal process.
2. All doors, windows, and penetrations into the room(s) shall be sealed with poly sheeting. All ventilation systems shall be locked-out and sealed with critical barriers of either poly sheeting or plywood sheeting.
3. Full enclosure of the walls and ceiling with poly sheeting (as applicable) will be required, no matter

what method of removal is used. Support of ceiling poly will be at the discretion of the Contractor. Ceiling may be constructed of one layer of 4 mil poly sheeting. Walls shall be constructed of one layer of 4 mil poly.

4. Based on the size of the enclosure/containment, a three stage decontamination unit shall be put into place and be fully operable.
5. A sufficient number of negative air units shall be installed which will provide a negative air pressure of at least -0.030" wp measured with a manometer.
6. Sufficiently wet sheetrock and joint compound wall and ceiling systems to be removed with amended water prior to and during the removal phase of work, and place into waste containers for disposal.
7. Upon completing the removal of all sheetrock and joint compound wall and ceiling systems, the Contractor shall conduct wet wiping on all remaining surfaces within the containment/enclosure.

Disposal Requirements

1. All sheetrock and joint compound wall and ceiling system waste that has been tested and found to contain <1% asbestos by the 400 Point Count method may be disposed as non-hazardous asbestos waste, in a landfill permitted to accept non-friable, non-hazardous asbestos containing material.
2. Waste material containers, including "burrito wrapped" material, shall have warning labels affixed. Contractor may either use the Cal/OSHA Title 8, 1529 (k)(8)(A-D) warning:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

3. All non-hazardous asbestos containing waste shall be tracked utilizing some form of system which at a minimum includes: date, document number, generator name and mailing address, description of the waste, waste generating site address, contractor company name and address, special handling instructions, transporter company name, as well as name and address of facility accepting the waste
4. Any drywall systems with skim coat or texture coat that contains >1% asbestos shall be handled, packaged and disposed as a friable hazardous asbestos waste..

Part 23.9 - Impact to and Removal of Transite Pipe, Shingle, or Sheeting Materials

Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.

Where transite pipe, shingles, or sheeting is to be impacted or removed the following procedures shall be performed:

1. All requirements of Cal/OSHA Section 1529 and US EPA AHERA regulations apply, and shall be followed, as well as, other applicable Federal, State, and local regulations as they pertain to training, work practices, air monitoring, waste disposal, etc.
2. Personal air monitoring shall be performed in accordance with Cal/OSHA Section 1529

3. Establishment of a work area restricting access to those personnel involved in the work, and posting of the work area is required.
4. An appropriately sized drop cloth of 6-10 mil poly sheeting sufficient in size to contain any debris generated during the removal shall be placed directly under the area to be worked to collect any fallen debris generated during the work.
5. Half-face and disposable coveralls shall be used during this work.
6. A HEPA vacuum must be in the immediate area ready for use.
7. Where the pipe must be cut the contractor may use any method applicable to performing the work. Any use of hand or mechanical saws, or other method which will produce dust and will require the use of the HEPA vacuum and engineering controls which will collect any and all dust generated during the sawing process.
8. The Contractor shall apply a sufficient amount of amended water to all pipe surfaces to be impacted during the work to keep them adequately wet.
9. All of the Contractor's materials, including poly sheeting, tools, etc. shall be properly decontaminated of visible dust and pipe debris utilizing wet cleaning methods and HEPA vacuuming prior to being removed at the completion of the work performed. Disposable materials must be properly disposed.
10. Intact transite waste generated may be disposed as non-friable non-hazardous asbestos waste, in a landfill permitted to accept non-friable, non-hazardous asbestos material. If the transite material is currently friable, or becomes friable during its removal, it shall be disposed of in a landfill permitted to accept friable hazardous asbestos waste.

It is acceptable to dispose of non-friable transite waste after placing it into two 6 mil thick polyethylene bags properly sealed and marked to meet current OSHA requirements.
11. The Contractor is required to provide to Owner's Agent a copy of the "trip ticket" indicating the actual weight of waste material and the landfill accepting the waste.

Part 23.10- Demolition with Selected Asbestos Containing Materials Left in Place

Not Applicable

Part 23.11 - Contaminated Attic Space Procedures

Not Applicable

Part 23.12 - Non-Friable, Non-Hazardous, Glazing Abatement Requirements

General Requirements

1. Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.
2. Removal of non-friable, non-hazardous, asbestos-containing glazing materials shall be coordinated and scheduled to be performed when there are favorable weather conditions, such as, low winds and no rain. If possible the work should be conducted when the interior space adjacent to the removal area is unoccupied.
3. Work should be halted if wind conditions occur which can or does cause removed glazing materials

to be blown off the perimeter poly sheeting, or beyond the designated removal area perimeter.

4. No cutting, sanding, grinding, or removal by any other method which will result in the glazing being crumbled, crushed, or turned in to powder is to be used without review and approval by the Owner and the Owner's Representative.

General Glazing Removal Instructions and Requirements

1. Removal of non-friable, asbestos-containing, glazing materials, is designated as Class II work. Half-face, negative pressure respirators and disposable coveralls shall be used at a minimum by all workers, at all times, when within the regulated area.
2. All glazing materials shall be removed in an intact state to the extent feasible utilizing hand tools such as a hammer and chisel, or other implement or tool suitable for this type of work. At no time may power tools be used while following these removal requirements.
3. All glazing materials are to be pre-wet with an amended water solution or liquid encapsulant prior to removal, and as needed during removal.
4. All associated surfaces where removal of glazing has taken place shall be wet wiped and HEPA vacuumed prior to removal of the regulated area or any interior poly sheeting/critical barrier. Particular attention shall be directed at assuring all loose debris has been cleaned from the removal surfaces.
5. Upon completion of all activities worker shall clean exposed skin with hot soap and water, and check clothing for any glazing chips. Remove chips by hand or utilize a HEPA filter equipped vacuum.

Pre-Abatement Preparation Requirements

1. The worker may either seal the interior window surface with poly sheeting to create a critical barrier, or place one layer of 6 mill poly sheeting on the floor beneath the window incase a window pane is broken during removal. These critical barriers or floor coverings shall be installed prior to the initiation of the removal work, and removed upon completion of the removal work as appropriate.
2. If the interior space must remain occupied a critical barrier must be installed on the interior surface of the window or opening where removal must occur. This may be waived and a layer of sheeting may be placed on the floor or adjacent surfaces if the interior space is going to remain unoccupied during the entire removal operation.
3. The perimeter of the work area where glazing removal is to be conducted, shall be posted with barrier tape at a distance of at least 20 feet from the edge of the removal area. This barrier tape will provide a buffer zone, and assist in the restriction of non-removal personnel.
4. Poly sheeting shall be placed on the ground directly below the work area or on adjacent surfaces for a distance sufficient to contain all debris which may be generated during the work. The poly sheeting should be secured to the ground using tape, weights, or other means to assure the poly will remain in place and not be picked up by wind or become a trip hazard.

Posting and Label Requirements for:

Regulated Area

Access to regulated areas shall be posted as outlined by Cal/OSHA Title 8, 1529 (k)(7)(B) 1 and 2 with warning signs and barrier tape bearing the following information:

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

These postings are required to warn non-abatement personnel of the restricted access, and potential hazard which exists in the vicinity of the regulated area.

Work Area Perimeter

Work area perimeters shall be posted with barrier tape bearing one of the following descriptions:

- CAUTION** in black letters on a solid yellow background.
- DANGER** in black letters on a solid red background.
- DANGER ASBESTOS HAZARD** in black letters on a solid red background.

Waste Material Containers

Waste material containers, shall have warning labels affixed in accordance with Cal/OSHA Title 8, 1529 (k)(8)(A-D).

**DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST**

Waste Disposal

1. Glazing waste may be disposed as non-hazardous asbestos waste, in a landfill permitted to accept non-friable, non-hazardous asbestos-containing material as long as the removal work was performed by hand utilizing hand tools, and the materials were not crushed, pulverized, or turned into powder during the removal process. If this does occur the waste must be reclassified as friable. If the asbestos-containing glazing material is currently friable, or becomes friable during its removal, it shall be disposed of in a landfill permitted to accept friable hazardous asbestos waste.

Part 23.13 - Subfloor Crawl Space Dirt Removal Requirements

Not Applicable

Part 23.14 - Subfloor Enclosure Requirements

Not Applicable

Part 23.15 - Removal of Mastic Pucks, Firestop Caulking, and Wall Coating Material**General Requirements**

1. Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.
2. No cutting, sanding, grinding, or removal by any other method which will result in these materials being crumbled, crushed, or turned in to powder is to be used without review and approval by the Owner and the Owner's Representative.
3. Removal of non-friable, asbestos-containing mastic material is designated as Class II work. Half-face, negative pressure respirators and disposable coveralls shall be used at a minimum by all workers, at all times, when within the regulated area. All Class II work requirements are in effect.
4. All mastic materials shall be removed in an intact state to the extent feasible utilizing hand tools such as a hammer and chisel, or other implement or tool suitable for this type of work. At no time may power tools be used while following these removal requirements without the use of a HEPA shroud and negative pressure containment.
5. Establishment of a work area restricting access to those personnel involved in the work, and posting of the work area is required.
6. An appropriately sized drop cloth of 6-10 mil poly sheeting sufficient in size to contain any debris generated during the removal shall be placed directly under the area to be worked to collect any fallen debris generated during the work.
7. Powered removal of these components shall require the use of a full negative pressure containment as described in Section 13.

Part 23.16 - Stucco/Texture Removal and Containment Requirements**General Requirements**

Except as amended here and in Section 24, Asbestos Specification/ Procedures, in all other Sections of this Exhibit shall be followed.

If stucco/texture surfacing materials shall be removed from exterior building components by hand, then the work may be performed inside a regulated area. If mechanical means of removal are employed, removal shall be performed within a negative pressure enclosure with a manometer and following all requirements in these specifications including a three stage worker decontamination unit.

1. Removal of stucco/texture regardless of asbestos content over a surface area greater than 25 square feet via mechanical means will require the construction and use of a three stage decontamination unit. This decontamination unit must be directly attached to the entrance of the containment and fully operable with working shower and hot water heater, as well as properly stocked with towels, soap, and shampoo.
2. Sufficient negative air units shall be installed which will provide a minimum of 4 air changes per hour and -0.030" air pressure differential measured with an attached manometer.
3. Upon completing removal of all stucco/texture, the Contractor shall conduct wet wiping of all remaining wall surfaces, poly barriers, scaffolding, etc. to remove settled dust from those surfaces.
4. Hole drilling may be performed inside a regulated area with the use of HEPA vacuum shrouded tools

or other means of dust control approved by the owner.

5. Regardless of asbestos content, all other Class II work procedures should be followed.

Final Lockdown-Encapsulation

1. Lock down-encapsulation of the containment shall be performed using one of two methods based on the needs of the project.
 - A. **Hand Wipe Method:** The needs of the project may require the remaining building component surfaces have no new film materials applied to them. If this is required the asbestos abatement contractor shall use clean wet cloths/towels to wipe existing surface dust off of remaining building components. These cloths/towels will be wetted with clean water and no chemicals or treatments will be added. All poly sheeting scaffolding and other components used to create the containment will be hand wiped with wetted cloths/towels which are treated with lock down-encapsulation chemicals to remove possible surface dust and lock down-encapsulate the surfaces of these items. This method can be used prior to the final visual to complete the final cleaning process.
 - B. **Air-less Spray Method:** The asbestos contractor shall lock down-encapsulate the entire containment area upon completion of the final visual inspection by the Owner's CAC, and acceptance of the work as complete.

Disposal Requirements

1. All waste containing less than 1% asbestos shall be properly disposed as a non-hazardous asbestos containing waste at an appropriate landfill. All waste containing greater than 1% asbestos shall be properly disposed as hazardous asbestos waste, in a landfill permitted to accept friable, hazardous ACM.
2. All waste containers shall have labeling in accordance with OSHA, DOT, EPA and DTSC requirements. All "Hazardous Waste" shall also include a Waste manifest with the generator's name, address, and Manifest Document number.

Part 23.17 - Fireproofing Abatement Requirements

Not Applicable

SECTION 24. ASBESTOS SPECIFICATIONS/PROCEDURES

Part 24.1 - Contacts

Blake Howes - Entek Consulting Group (916) 632-6800

Part 24.2 - Removal Locations

Refer to architectural drawings for this site identifying the buildings and work included in the project and scope of work outline. The General Contractor and his Sub-contractor are responsible for estimating the amount of asbestos-containing materials to be disturbed or removed as revealed on the mandatory bid walk, and provided in the project specifications and architectural drawings. The drawings will also provide the Contractor with locations where work is to be performed to allow computation of the quantities of materials to be impacted or removed.

The asbestos contractor shall provide a complete copy of this specification to their onsite competent person

for reference while conducts work on the project. A copy of these specifications shall remain onsite by the asbestos contractor for the duration of the project.

Part 24.3 - Materials to be Abated

Refer to the architectural drawings and project specifications for designations and instructions pertaining to what materials are to be removed or impacted during this project. Directions pertaining to materials to be impacted or removed during this project are **NOT** included in this Exhibit. This exhibit includes work practices and procedures for those materials that are impacted by the planned renovation/demolition.

Areas of roofs, walls, floors, and/or ceilings may require penetrations be made during the project which may involve asbestos containing materials (ACM) depending upon the location of penetrations. Prior to impacting any building materials which are listed as "suspect" for containing asbestos by the US EPA the Contractor should refer to Section 25, Asbestos Results List for information pertaining to specific Asbestos Containing Materials (ACM) or products known to exist on the site. Materials suspected of containing asbestos but which have not been tested are "assumed" to contain asbestos.

A hazardous materials inspection was conducted by Entek Consulting Group, Inc. for all portable buildings and areas of the main building expected to be impacted, in preparation of this project. The contractor shall refer to the Hazardous Materials Survey reports prepared on September 21, 2020 and May 13, 2021, which includes all suspect building materials that were sampled and analyzed for asbestos and included an assessment for lead in paint. The report also includes discussion on Freon, PCB in ballasts, fluorescent light tubes, mercury switches, radioactive tritium containing exit signs, crystalline silica and mold.

Materials commonly excluded from being suspected for containing asbestos include but are not limited to: unwrapped pink and yellow fiberglass insulating materials or products, foam insulation, wood, metal, plastic, or glass. All other types of building materials or coatings on the materials listed above are commonly listed as "suspect" and must be tested prior to impact by a Contractor.

Attic spaces at this site are contaminated with asbestos roofing debris from prior roofing replacement projects. If ceiling systems are removed and it is discovered that suspect roofing debris is present, the contractor shall stop work and bring it to the attention of the project manager to assess the potential for asbestos.

Part 24.4 - Containment and Abatement Requirements

The general guidelines in these specifications shall be followed by the asbestos abatement contractor for all work on this project. All requirements of Cal/OSHA Section 1529 and US EPA AHERA regulations apply, and shall be followed, as well as, other applicable regulations.

The Contractor shall follow all requirements set forth in Section 23, Specific Procedures and Requirements when disturbing or removing specific asbestos containing materials.

All asbestos related work shall be performed within negative pressure work enclosures for any class of asbestos work. The term "containment" or "enclosure" shall be construed to mean a containment which is constructed to enclose a work area (as defined in Section 2), and meet all applicable requirements set forth in Sections 2 through 22 of this Specification and all governing regulatory agency requirements. Each containment shall be tailored to meet the needs of the "work area" to be enclosed and include all requirements as set forth in the above related sections and government regulations applicable to asbestos related work.

Sufficient negative air units shall be installed which will provide a minimum of 4 air changes per hour and a minimum of -0.030" air pressure differential, while the zippered doors are opened for bag-out of waste. A digital manometer recording shall be made of all days when in use. The digital recording manometer shall have at a minimum the ability of displaying three digits after the zero (0.000). The manometer tapes shall reflect the correct location, times, and dates of all measurements recorded. Once these requirements have been met and the negative pressure has been established, the Contractor shall request a pre-start visual

inspection from Owner's asbestos consultant.

A three stage decontamination unit is required and shall be comprised of zippered doors between the chambers. Flapped doors will not be acceptable. The decontamination unit shall be cleaned daily of all debris, bags, tape, towels, etc. and shall remain clean during the day. The clean room of any three stage decontamination unit shall be at least 5' in width, 5' in length, and 7' in height. Multiple showers are required if the number of asbestos workers exceeds ten per Title 8 3366 Washing Facilities. When there are less than five employees, the same shower may be used by both sexes if the shower room can be locked from the inside.

Part 24.5 - Contractor Assist Requirements

The asbestos contractor shall provide "contractor assist" services for electrical, plumbing, mechanical, and other trades as necessary and agreed to with the General Contractor, for work to be conducted in spaces such as attics, wall cavities, and mechanical rooms where asbestos contamination is present, or where ACM are to be disturbed in order to perform the work.

Contractor assist work shall require the asbestos contractor to construct a mini-cube enclosure, create access to the contaminated area, and wet wipe or HEPA vacuum all dust and debris from the immediate work area as needed to create a "clean" environment for the trade workers to work. All procedures specified in Section 23 shall be followed.

Part 24.6 - Worker Protection

At a minimum half-face respirators with P-100 (HEPA) cartridges, disposable coveralls, and hard sole shoes shall be used during the removal and disposal of all asbestos containing material. Full-face powered air purifying respirators (PAPR) with P-100 cartridges are required for all Class I work. Workers wearing tennis shoes, sandals, or soft sole type shoes will not be allowed to work on roofs or inside containments regardless of the activity being performed. Worker protection for all other work areas shall be in compliance with Cal/OSHA requirements and shall follow the respirator selection as specified in Title 8 section 5144.

Part 24.7 - Electrical and Water Hook-Ups

The Owner shall provide access for electrical and water hook-ups. The Contractor shall install a temporary electrical spider box to an existing electrical panel using a licensed qualified electrical contractor. The Contractor is responsible for all hook-ups, electrical cords, water hoses, and hose bibs necessary for attachment.

Part 24.8 - Visual and Air Clearance Criteria

The Contractor shall perform a pre-final visual of the removal area and adjacent surfaces prior to requesting that Owner's asbestos consultant (CAC) conduct a final visual inspection. The pre-final visual performed by the Contractor shall verify that all materials have been completely removed from the work area, and that the work area meets the requirements specified in Section 17.

Upon completion of the pre-final visual inspection by the Contractor, a final visual of the containment area will be performed by Owner's asbestos consultant. The Contractor shall not be allowed to encapsulate the containment until receiving acceptance by Owner's asbestos consultant confirming the removal area and the containment have met the criteria of Owner's asbestos consultant for completeness of removal of asbestos materials and cleanliness of the containment barriers and surfaces.

Clearance air sampling will be performed following passing the visual inspection, encapsulation of the containment has taken place and a sufficient amount of time has passed to allow the encapsulant to dry. All clearance air samples will be analyzed by transmission electron microscopy (TEM), and performed by a NIST/NVLAP accredited laboratory. The clearance criteria for releasing the Contractor is the AHERA

Standard, with the average of all air samples less than 70 asbestos structures per square millimeter. Aggressive air sampling will be used, which includes using a leaf blower in conjunction with fans to dislodge any remaining dust within the containment.

Part 24.9 - Owner's Responsibility

Not Used

Part 24.10 - Disposal Requirements

Disposal of all friable hazardous asbestos containing waste must be tracked utilizing a current copy of a Uniform Hazardous Waste form. These forms are to be properly filled out by the Contractor and signed by an authorized Owner's representative. All non-friable non-hazardous asbestos waste shall be tracked using a Bill of Lading or equivalent and signed by an authorized Owner's representative. No individual or representative other than the Owner's designated representative is permitted to sign Uniform Hazardous Waste forms or bill of Lading or equivalent for the Owner.

It shall be the responsibility of the Contractor to notify Owner's CAC and coordinate having a hazardous waste manifest properly signed by a Owner representative.

Part 24.11 - Work Periods

Work periods shall be scheduled with Owner's CAC at least 48 hours prior to the start of any shift. If weekend work is to be conducted, shift times are to be established and approved by Owner's CAC. All shifts are to consist of 8 hours and will begin at the time specified and agreed to by Owner's CAC and the abatement contractor.

PREPARED BY:

Blake Howes
Senior Project Manager
Entek Consulting Group, Inc.
CAC#13-5015
June 24, 2022

Part 24.12 - Pre-Construction Submittal List

- 1. _____ Copy of State of California - Contractor's State License
- 2. _____ Copy of State of California CSLB Active License
- 3. _____ Copy of State of California CSLB Asbestos Certification
- 4. _____ Copy of Department of Industrial Relations; Division of Occupational Safety and Health; Certificate of Registration for Asbestos-related Work
- 5. _____ Copy of signed statement from company officer listing citations and pending proceedings against the Contractor, or if there have been no citations, a copy of the statement that no actions by regulatory agencies have occurred in the last three years signed by an officer of the company.
- 6. _____ General Liability Insurance Certificate
 - a) ___ Occurrence
 - b) ___ Asbestos/Lead Activities or Abatement Certificate
 - c) ___ Owner Named as Additional Insured
 - d) ___ Consultant Named as Additional Insured
- 7. _____ Auto Insurance
- 8. _____ Workers' Compensation Insurance
- 9. _____ Statement of Non-use of Sub-contractors or
 - a) ___ Name of Each Sub-contractor
 - b) ___ License Number for Each Sub-contractor
 - c) ___ General Liability Insurance Certificate for Each Sub-contractor
 - 1) ___ Minimum Coverage of \$1,000,000.00
 - 2) ___ Owner Named as Additional Insured
 - 3) ___ Consultant Named as Additional Insured
 - d) ___ Auto Insurance Certificate for Each Sub-contractor
 - e) ___ Workers' Compensation Insurance Certificate for Each Sub-contractor
 - 1) ___ Owner Named as Additional Insured
 - 2) ___ Consultant Named as Additional Insured
- 10. _____ Written Notification to CAL/OSHA
- 11. _____ Written Notification to local SJAPCD, EPA NESHAP Region IX
- 12. _____ Copies of City Permits (e.g. Parking or Waste container) or Statement That no Permits are Required
- 13. _____ Statement That no Equipment Will be Rented for use With Asbestos or a Statement From Each Rental Company Acknowledging Their Equipment Will be Exposed to Asbestos

- 14. _____ Non-Emergency Telephone Numbers
 - a) ___ Local Police Department
 - b) ___ Sheriff Department
 - c) ___ Fire Department
 - d) ___ Emergency Medical Facility and Directions to That Facility From the Site
- 15. _____ Written Emergency Plans
- 16. _____ Written Work Plan
- 17. _____ Written Schedule
- 18. _____ Worker Documentation (Must Include at Least One Supervisor)
 - a) ___ Training Records for Asbestos - AHERA (Supervisor and Worker)*
 - b) ___ Medical Examination Written Opinion Final Report for Each Employee*
 - c) ___ Respiratory Fit Tests for Each Employee*
- 19. _____ Equipment list, SDS for all materials to be used on the project, including but not limited to, spray glue, encapsulants, wetting agents, mastic remover, etc.
- 20. _____ Name of laboratory/person used for PCM analysis and copy of current NVLAP Certificate of Accreditation (if applicable), and most recent AIHA Proficiency Analytical Testing (PAT) Program results.
- 21. _____ Written Statement That OSHA Monitoring Will be Performed During the Project
- 22. _____ Manufacturers documentation of 5.0 micron filter capability required for waste water
- 23. _____ Name of Transporter
- 24. _____ Hazardous Waste Transporter Registration (if applicable) **Is required only if work to be conducted involves the removal and disposal of “hazardous” asbestos waste as determined either by definition or designated within the Asbestos Abatement Specifications/Procedures and associated attached Exhibits.**
- 25. _____ Waste Facility Documentation
 - a) ___ Name and Site Address
 - b) ___ EPA Identification Number (if applicable)
 - c) ___ Copy of Current Permit Authorizing Asbestos Waste Receipt and Disposal
- 26. _____ Signed Copy of Competent Person Form Acknowledging Reading and Understanding the Specifications (Last Page of Forms Sections of Document) This must be signed by the asbestos Contractor/Supervisor who will onsite, not in the contractor’s office.

Note: Items 9, 12, 13, and 21 may be addressed in a single letter as applicable.

* No Contractor’s worker will be allowed to conduct asbestos related work, enter a containment, or regulated area prior to verification of AHERA, respirator, and medical documentation. This verification must either be onsite or faxed to Owner’s CAC prior to

entry.

Part 24.13 - Interim Construction Submittals

Upon request by the Owner or Owner’s Representative, the Contractor shall provide copies of documentation identified to be pertinent to the project.

Part 24.14 - Post Construction Submittal List

Contractor shall provide the following post-construction submittals to Owner’s Representative within thirty (30) days of the completion of asbestos abatement work.

1. _____ Copies of revised notifications to regulatory agencies.
2. _____ Information on all new workers not covered by the pre-construction submittals and not submitted during the project.
3. _____ A copy of worker exposure monitoring results collected in compliance with DOSH regulations (Title 8 CCR, Section 1529) including daily/representative/full-shift/breathing-zone air samples, and 30-minute excursion samples.
4. _____ A copy of the worker/visitor log showing the following for all persons entering the work area: date, name, social security number, entering, and leaving times, company or agency represented, and reason for entry. The Contractor's time records will not be accepted in lieu of a worker/visitor log.
5. _____ Copies of all accident reports submitted during the course of work. **If no accidents occur during the project this should be stated in writing by the Contractor.**
6. _____ Receipts from the landfill operator acknowledging the Contractor's delivery of wastes, including dates, container types and quantities, tare weights or material delivered, and all appropriate signatures.
7. _____ A complete record of the air filtration devices used certifying DOP testing (if performed) and a circular chart recording, indicating continuous operation and documenting differential air pressure.
8. _____ Copies of DOP Testing Performed on HEPA Equipment not Previously Submitted
9. _____ Manometer graphs identifying project name, date, and location.
10. _____ A copy of the asbestos waste record showing dates, times, manifest numbers, quantities of wastes, types of containers removed from the work area, the hauler, and the signature of the recorder.
11. _____ A Land Disposal Restrictions Notification and Certification
12. _____ Completed Uniform Hazardous Waste forms
13. _____ Other Documents as Requested

SECTION 25. ASBESTOS RESULTS LIST

Any material not specified on the following list which the Contractor encounters at this site must be considered as “suspect” and “assumed” to contain asbestos per US EPA. The only items excluded from this statement are; bare wood, glass, and metal.

Suspect Materials Found or Assumed TO Contain Asbestos Gym Building					
Sample ID#’s	Suspect Material	Asbestos Content/Type (%) by PLM/PC	Location	NESHAP/Cal OSHA Classification	Total Estimated Quantity
07A	Mastic Puck Associated with HVAC Fiberglass Insulation Sheets	1-2% CHRYSOTILE	Gym Air Handling Spaces on HVAC Ducts	CAT-II	20 Sq.
08A	Black Firestop Caulking	2-7% CHRYSOTILE	Gym Air Handling Spaces	CAT-II	10 Sq.
10A-B	6" OD Hard Pack Pipe Fitting & Elbow Insulation	2-7% CHRYSOTILE	Gym Building, Wrestling Gym at Ceiling Pipes	RACM	40 Ln.
11A-D	Black Coating on Concrete Wall	1-2% CHRYSOTILE	Gym Building, Beneath Interior Plywood Wall Panels	CAT-II	10,000 Sq.
13A	8" OD Hard Pack Pipe Elbow Insulation	2-7% CHRYSOTILE	Gym Building, Main Gym at Ceiling Pipes & Storage Room	RACM	40 Ln.
15A	6" OD Hard Pack Pipe Elbow Insulation	2-7% CHRYSOTILE	Gym Building, Main Gym at Ceiling Pipes & Storage Room	RACM	40 Ln.
18A-C	Drywall and Joint Compound	<1% CHRYSOTILE	Gym Building, Drywall Walls & Ceilings	ACCM <i>(Confirmed by Point Count)</i>	30,000 Sq.
23A-D, 23F, 23G	Stucco	<1% CHRYSOTILE	Exterior of Gym Building	ACCM <i>(Confirmed by Point Count)</i>	40,000 Sq.
23E, 29A	Concrete Wall Panel Seam Caulking	2-7% CHRYSOTILE	Exterior of Gym Building	CAT-II	400 Sq.
N/A	6" OD Hard Pack Pipe Insulation	ASSUMED TO CONTAIN ASBESTOS	Above HVAC Duct, Gym Air Handling Spaces, Central Room	RACM	60 Ln.

Suspect Materials Found or Assumed TO Contain Asbestos Gym Building					
Sample ID#'s	Suspect Material	Asbestos Content/Type (%) by PLM/PC	Location	NESHAP/Cal OSHA Classification	Total Estimated Quantity
N/A	Window Glazing Putty	ASSUMED TO CONTAIN ASBESTOS	Gym Exterior Windows	CAT-II	20 Sq.

Note 1.: **Category I Non-friable ACM** is asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos by area.

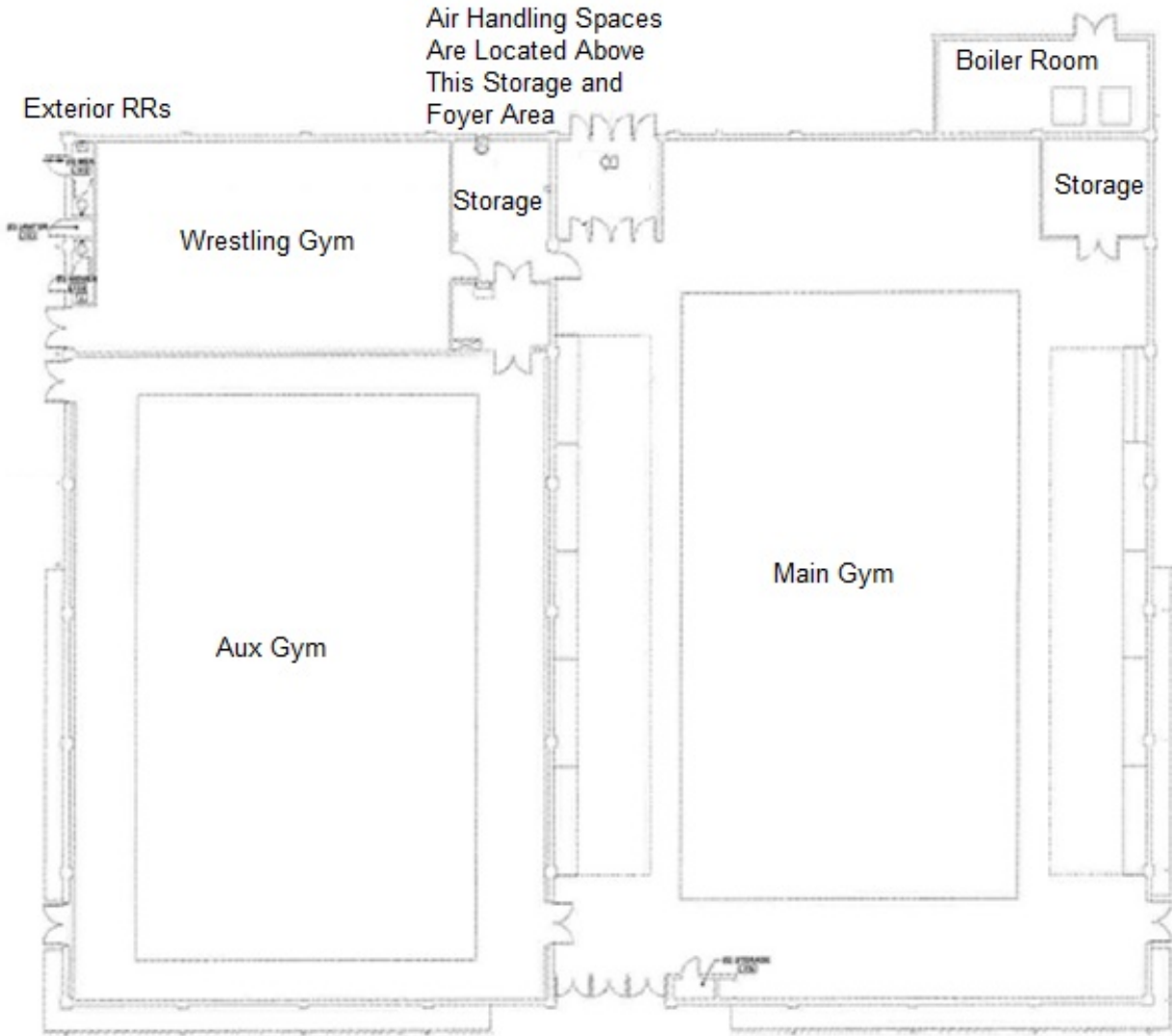
Note 2.: **Category II Non-friable ACM** is any material, excluding Category I non-friable ACM, containing more than one percent asbestos, which is non-friable such as transite and other concrete based products.

Note 3.: **Regulated Asbestos-Containing Material (RACM)** is any friable material, any Category I non-friable ACM which has become friable, any Category I non-friable ACM which will be or has been subjected to sanding, grinding, cutting, or abrading, any Class II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to a powder by the forces expected to act on the material in the course of demolition or renovation operations.

Note 4.: **Asbestos Containing Construction Materials (ACCM)** is a manufactured construction material containing greater than 0.1% asbestos by weight by the PLM method.

Note 5.: The terms “assume” and “presume” mean the named material is considered positive for containing asbestos and must be treated accordingly, until properly sampled in compliance with 40 CFR, Part 763 Asbestos-Containing Materials in Schools; Final Rule and Notice.

SECTION 26. SITE MAP



SECTION 27. FORMS

DOCUMENTATION OF PROPER AIR FLOW RATE FOR PAPR'S

PROJECT: _____

JOB FOREMAN: _____

DATE: _____

WORKER'S NAME AND PAPR'S MODEL & SERIAL NUMBER	MEETS MANUFACTURERS REQUIREMENTS FOR AIR FLOW		MEETS MANUFACTURERS REQUIREMENTS FOR AIR FLOW	
	MORNING SHIFT MEASURED FLOW PASS / FAIL		AFTERNOON SHIFT MEASURED FLOW PASS / FAIL	

The air flow rate of every PAPR must be checked by the Job Foreman each shift, prior to any worker entering containment.

Manufacturers Recommended Air Flow: _____

Respirator Type(s): _____

**ASBESTOS ABATEMENT
PRE-START VISUAL INSPECTION REPORT**

CLIENT: _____ **PROJECT #:** _____

SITE: _____

CONTRACTOR: _____

REMOVAL LOCATION (Building and Containment): _____

WORK TO BE CONDUCTED: _____

PRE-START VISUAL INSPECTION RESULT

DATE: _____

FINDINGS: _____

COMMENTS: _____

Signature of Owner's Representative

FINAL VISUAL CLEARANCE REPORT

CLIENT: _____ **PROJECT #:** _____

SITE: _____

CONTRACTOR: _____

REMOVAL LOCATION (Building and Containment): _____

WORK CONDUCTED: _____

FINAL VISUAL INSPECTION RESULT

DATE: _____ **FINDINGS:** _____

COMMENTS: _____

Contractor Supervisor Requesting Inspection (Date and Time)

Signature of Owner's Representative

Competent Person Acknowledgment

The Cal/OSHA standard for asbestos related construction work, found in 8 CCR, 1529, outlines specific duties and qualifications of the “Competent Person.” Find below a overview of these qualifications and responsibilities. The competent person must be authorized by their employer to take prompt corrective measures to eliminate hazards on the job and protect their workers safety. The competent person must be the Supervisor onsite who is capable of:

- Identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees.
- Identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure.

The duties of the competent persons include, but are not limited to:

- Frequent and regular inspections of the job site, materials, and equipment.
- Supervise or perform the set-up of the regulated area and/or containment.
- Ensure the integrity of the regulated area and/or containment.
- Set up procedures to control entry to and exit from the regulated area and/or containment.
- Supervise all employee exposure monitoring and assure it is conducted according to regulatory requirements.
- Ensure that employees working within the regulated area(s) wear respirators and protective clothing as required by regulation.
- Ensure that employees working set up, use, and remove engineering controls, use work practices and personal protective equipment in compliance with the regulations.
- Ensure that employees use hygiene facilities and observe the decontamination procedures specified in the regulation.
- Ensure through continuing onsite surveillance that engineering controls are functioning properly and employees are using proper work practices.
- Ensure that notification requirements of the regulation are met.

Additionally, the EPA requires the competent person to be trained in the Federal NESHAP regulations, the means to comply with them, and be on site during all removal operations.

I _____ have the authority to take prompt corrective measures to eliminate hazards on the job and protect workers safety. Furthermore, I have read and understand my duties as outlined above and under the applicable regulations, and will exercise them to best of my ability.

 Signature of Competent Person Who Will Be Onsite Date: _____ Employer: _____

 Printed Name of Competent Person Who Will Be Onsite