**ASBESTOS ABATEMENT**

# GENERAL

DIVISIONS 00 7 01 ARE A PART OF THIS SECTION

## 1.01 SUMMARY OF SCOPE OF WORK

### General

### The contractor shall review the project design documents to determine the scope of work and to determine where assumed or presumed asbestos-containing materials (PACM’S) will be impacted based on the specified scope of demolition work as defined in the design documents.

### The contractor performing the work shall be aware that the asbestos survey as performed for the project did not include exterior below-grade building materials with the exception of roofing systems and window glazing. The contractor shall be aware of the potential presence of these materials at locations at the specified building as well as between buildings located at the site. Th contractor shall request additonal information and/or conduct additions testing as requried to determine the possible presence and location(s) of these materials.

### Asbestos Abatement Contractor shall supply all labor, materials, equipment, insurance, transport and disposal to remove all identified, assumed, or presumed asbestos-containing building (PACM) materials and ACCM’s) from specified interior and exterior locations at specified portions at subject site as required to complete the specified scope of work as defined in the project design documents. Asbestos Abatement Contractor shall provide documentation that it is:

#### Currently certified for Asbestos Work by California State Contractor’s Licensing Board.

#### Currently registered for Asbestos Work with the State of California, Division Occupational Safety and Health.

### At least one full-time employee on each workshift shall be currently accredited as an EPA Contractor/Supervisor and shall have successfully completed, in the preceding calender year, a course of instruction meeting the requirements for “Competent Person” (29 CFR 1926.1101(e)(ii) and (8 CCR 1529). Such person shall have knowledge and authority to act as “Competent Person” as defined by Title 8 CCR 1529 and CFR 1926.1101. The Supervisor shall be certified by the State of California as a Contractor/Supervisor and shall comply with 40 CFR 763 (AHERA) and TSCA and shall provide evidence of such training and certification.

### The Asbestos Abatement Contractor shall maintain documentation on file that all Asbestos Abatement Contractor’s employees meet the training requirements of Federal, State, and Local regulations. As a minimum, asbestos worker training shall comply with 40 CFR 763 (AHERA) and TSCA and shall demonstrate evidence of such training by maintaining current refresher training equivalent to the required level of training.

### All work shall be conducted in accordance with applicable regulations, including but not limited to 40 CFR 763 (AHERA), 29 CFR 1926.1101 (OSHA), 40 CFR Part 61 (NESHAPS) and Title 8 CCR 1529 (Cal/OSHA Asbestos In Construction Standard), including mandatory and non-mandatory appendices as applicable, and the requirements of the San Joaquin Valley Air Pollution Control District regulations.

### The contractor shall be aware that the previous asbestos survey prepared by TBA/P&P (dated 04/5/23) may not consider the presence of ACM at locations behind walls, above ceilings and below floors, as well as other locations not visually apparent at the time the field investigation was performed. Also, testing of below-grade piping and associated elements, building footings, operational boilers and related mechanical eqiuipment and other related elements was excluded from the site evaluation but may be present. The contractor should contact the building owner for information concerning the presence and locations of these materials.

## Scope of Work: Asbestos Abatement

### Contractor shall review Asbestos Survey Report (attached as an **Appendix** to this specification) prepared by T. Brooks & Associates, a division of Provost & Pritchard Consulting Group to determine locations of identified, “presumed” or “assumed” asbestos-containing building materials (ACBM’s) and Asbestos-Containing Construction Materials (as confirmed by Point Count) which will be impacted based on the proposed scope of work and project design documents.

### All work involving disturbance of asbestos-containing materials shall be conducted using work methods and controls herein identified and/or as required under local, state, and federal regulations. Abatement work shall be conducted in accordance with applicable regulations and these specifications in a manner which protects the health and safety of abatement workers, other trades, district employees, the general public, and others during the work. ACBM’s shall be wetted continuously during abatement operations to preclude generation of airborne dust and visible emissions.

### At no time shall non-asbestos trained and certified, unprotected workers or others enter any established “Regulated Area” or participate in work operations for which they are not specifically trained and licensed, and for which hazards exist for which they are not protected.

### Contractor shall thoroughly review all project design documents, including but not limited to: project design drawings, project specifications, project addendums, and previous asbestos survey report prepared by TBA/P&P to determine locations of ACBM’s (identified, presumed or assumed) and ACCM’s as specified and/or impacted in order to complete the specified scope of work as included in the design documents. Contractor shall not request additional compensation or extension of contract based upon their failure to accurately determine the scope of work based upon their review of all project design documents, previous asbestos survey, available data, and field verification of quantities, locations, and existing conditions affecting completion of the work. Contractor shall request additional information from Building Owner as relates to suspect ACM’s not considered as part of the previous asbestos survey.

### While the survey report includes identified, assumed or presumed ACM and ACCM on a building-by-building basis at the specified school site, for those portions of the site to be impacted by the work, the Contractor shall be responsible for accurate determination of material quantities, locations, and all conditions effecting their proper execution of the work under the Agreement.

### The contractor shall be aware that those buildings at the subject school site as referenced in the asbestos survey report are divided into two (2) distinct groups in the asbestos survey report. These include buildings labeled as “Comprehensive Building Surveys”, and those labeled as “Limited Building Surveys”. The scope of sampling varies based on these categories. Refer to the survey report for additional information.

### Scope of work may include disassembly of existing building systems, components, building elements, and equipment to access ACBM’s for purposes of abatement, or to complete the specified scope of work under the contract. Contractor shall perform all disassembly and reassembly of building elements as required to complete the specified scope of work as directed by the Building Owner (Owner).

### Perimeter air monitoring may be conducted by the Owner’s Asbestos Representative during abatement phase to ensure worker and site safety, and to ensure suitability and effectiveness of means utilized by Contractor in the performance of the work. This sampling shall not relieve Asbestos Abatement Contractor of responsibility of performing representative personal air sampling per Cal/OSHA requirements and these specifications. Personal air sampling shall be conducted in accordance with Title 8 CCR 1529 and the requirements of this specification. Failure of Contractor to perform personal air sampling operations to satisfaction of Owner’s Asbestos Representative, or failure to provide laboratory results within stipulated time period (48 hrs. of end of shift during which they were collected) shall allow Building Owner to have independent, personal air monitoring operations conducted on it’s behalf, and to deduct cost from monies owed to Contractor under the Agreement. Costs may include Owner’s Asbestos Consultant Representative’s costs, including but not limited to field time, use of equipment, laboratory supplies, shipping charges, and fees associated with laboratory analysis, including RUSH analysis of laboratory samples collected for the purposes of determining contractor’s compliance with the project design documents and these specifications.

### Owner shall approve in writing all additional, unforseen abatement work necessitating a change in contract price. Cost for such work shall be agreed upon by Contractor and Owner prior to initiating or altering work effecting such materials. Negotiated costs shall be all inclusive and shall reflect all costs including labor, materials, insurance, disposal, overhead and profit, etc.

### a final visual inpection shall be conducted by the Owner’s Asbestos Representative upon notification of completion of abatement work per building at the specified site. Successful passage of final visual inspection will be required as a prerequisite of completion of abatement related work prior to proceeding with non-abatement portions of the work. Final Air Clearances will be performed by the Owner’s Asbestos Consultant Representative on its behalf unless the project requires air clearances to be included in the cost provided by the contractor and provided by a third-party consultant on its behalf. Refer to the enclosed Clearance Section for clearance requirements. All air clearances shall meet AHERA requirements under 40 CFR Part 763, Subpart E.

### Owner’s Asbestos Representative shall be notified when abatement work has been completed in order to schedule final visual inspections. Notification shall be a minimum of twenty-four (24) hours prior to requested final visual inspection. Final Visual Clearance Form shall be signed by Owner’s Designated Representative and Contractor Representative for each individual final visual inspection performed as part of the project.

### While efforts have been made to accurately list ACM quantities and locations, the Contractor has the responsibility to verify quantity and quality of conditions based upon review of all project design documents, review of previous asbestos survey report and thorough examination of each location where abatement work will be conducted based upon the project scope of work. Contractor shall be knowledgeable of limitations of survey report as stated in report and these specifications, and shall request additional information from Owner as required to provide a comprehensive bid for the work.

### All materials to be abated shall be maintained in wetted condition throughout the abatement process, and shall be wetted when placed in sealed bags prior to being sealed.

### All removed ACBM’s will be double-bagged in accordance with these specifications and regulatory requirements, labeled, and transported to an appropriate disposal site. Labeling of all waste bags or on-site storage containers which include ACBM shall be in accordance with Title 8 CCR 1529 requirements while on the jobsite.

### Personal air samples (collected by the Contractor of its employees) will be analyzed utilizing PCM (NIOSH 7400) methodology. Asbestos Abatement Contractor’s personal air monitoring results shall be provided to Owner’s Asbestos Representative within forty-eight (48) hours of shift during which the samples were collected. Should personal or excursion samples exceed any PEL, the Owner’s Asbestos Representative retains the right to require RUSH turn-around of future air samples until results are consistently below the OSHA PEL’s. Costs of RUSH analysis and associated costs shall be the responsibility of the Contractor. Contractor shall not request additional compensation for compliance with this provision.

### Upon successful passage of Final Visual Inspection and Final Air Clearance(s), (per containment area) affected areas shall be made accessible to non-abatement Contractors for completion of non-abatement related work. Results shall not pertain to areas outside of the areas reflected by the final visal inspection and/or Final Air Clearance.

### All work performed under the contract shall be conducted during hours as directed by the Building Owner. Owner shall mandate schedule based on its needs, and in a manner most conducive to complete all work associated with the project in a timely manner and in a sequence which suits the needs and preferences of the Owner and the Supervising Contractor. Asbestos Abatement Contractor agrees to sequence their work in a manner prescribed by the Owner and/or the Supervising Contractor and to cooperate with other Contractors in this regard.

### Potential asbestos hazard/General Contractor Supervision

#### Contractor shall educate all workers, supervisory personnel, other contractors, and others at the jobsite of the nature of the work hazards and of proper work procedures which must be followed to protect themselves from asbestos hazards.

#### In compliance with Title 8 CCR 1529, the Prime Contractor shall provide general supervisory authority over all work performed by the Asbestos Abatement Contractor and shall provide oversight of all work performed by them. Refer to 8 CCR 1529 for description of duties and responsibilities of prime contractors engaged in asbestos removal projects.

## LIMITATIONS - ASBESTOS ABATEMENT

## APPLICABLE TO ALL SECTIONS OF SPECIFICATIONS FOR ASBESTOS ABATEMENT

### SUMMARY

### This Specification is specifically intended for use on the project indicated.

### Where the term “Asbestos Abatement Contractor” is used throughout these specifications, it is meant to refer to the entity doing the asbestos related work whether it is the Prime Contractor or an abatement subcontractor.

### New legislation, regulations or case law may supersede portions of this Specification. Such superseding facts become, in effect, currently “applicable” laws, regulations and good practice within the intent of this Specification.

### In case of discrepancies in this Specification, the strictest law, regulation, standard or good practice shall apply.

### If new facts or discrepancies are evident to bidders prior to submission of the bid, they shall be brought to the attention of the Owner so that the necessary addenda making amendments or corrections can be issued to all bidders.

### Indications of quantity or quality of drawings are intended to be approximations of actual conditions. Bidder has the obligation to accurately assess quantities, quality, and accuracy of all such information prior to submitting a bid for the work. Such determination shall be made during initial or subsequent site visits (if permitted), review of all design documents, including all project construction drawings, all specification sections, addendums, and other relevant documents.

### Contractor shall not submit a claim or “change order” for their failure to accurately determine the scope of abatement work based on the examination of the project site, and review of all relevant project documents. Contractor shall consider time schedules, delays, and other issues based on thorough review of scope of abatement work.

### Abbreviations and Acronyms

### **ACBM:** Asbestos-Containing Building Material

### **ACM:** Asbestos-Containing Material

### **ACCM:** Asbestos-Containing Construction Material

### **APCD:** Air Pollution Control District

### **AQMD:** Air Quality Management District

### **AHERA:** Asbestos Hazard Emergency Response Act, 40 CFR 763 Part F

### **AIHA:** American Industrial Hygiene Association

### **ANSI:** American national Standards Institute

### **ASA:** American Standards Association

### **ASTM:** American Society for Testing & Materials

### **CFR:** Code of Federal Regulations

### **CERCLA:** Comprehensive Environmental Response, Compensation and Liability Act (42 USC 9601ff)

### **CIH:** Certified Industrial Hygienist

### **DOT:** U.S. Department of Transportation

### **EPA:** Environmental Protection Agency

### **F/CC:** Fibers per cubic centimeter (or air)

### **FR:** Federal Register

### **G(C)FI:** Ground (Circuit) Fault Interrupter

### **HEPA:** High Efficiency Particulate Air (filter with 99.99 efficiency to 3 microns).

### **HVAC:** Heating, ventilation and air conditioning system

### **IH:** Industrial Hygienist

### **MSDS:** Material Safety Data Sheet

### **OSHA:** Occupational Safety and Health Administration

### **NAM:** Negative Air (Filtration) Machine

### **NEC:** National Electrical Code

### **NESHAPS:** National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61

### **NFPA:** National Fire Protection Association

### **NIOSH:** National Institute of Occupational Safety and Health

### **OWNER:** Bakersfield City School District

### **OWNER’S ASBESTOS REPRESENTATIVE**: T. Brooks & Associates, a Division of Provost & Pritchard Consulting Group

### **PAPR:** Powered Air-Purifying Respirator

### **PCM:** Phase Contract Microscopy (Air Sample Analysis)

### **PLM:** Polarized Light Microscopy (Bulk Sample Analysis)

### **RCRA:** Resource Conservation and Recovery Act

### **SSN:** Social Security Number

### **BA/P&P:** T. Brooks & Associates, a division of Provost & Pritchard Consulting Group

### **TEM:** Transmission Electron Microscopy

### **USC:** United States Code - Abbreviations and Acronyms - California

### **CAC:** California Administrative Code

### **Cal/OSHA:** California Division of Occupational Safety and Health

### **CSC:** Construction Safety Orders

### **DOSH:** Division of Occupational Safety and Health

### **CDPH:** California Department of Public Health

### **GISO:** General Industry Safety Orders

## DEFINITIONS – GENERAL

### **Abatement:** Procedure to control fiber release from ACBM’s. Includes removal, encapsulation, enclosure, repair, demolition and renovation activities.

### **Aggressive Sampling:** Use of air moving equipment such as a leaf-blower and fans to re-entrain particulate prior to clearance sampling in a method substantially similar to that outlined in Appendix A of 40 CFR 763.90.

### **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 door- ways separated by a distance of a least 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 as mandated by Appendix E of 29 CFR 1926 and 40 CFR 763.

### **Air Clearance:** “Final Air Clearances” conducted in accordance with Appendix E of 40 CFR 763. TEM AHERA method will be utilzed unless indicated otherwise.

### **Air Sampling Professional:** The professional contracted or employed by Owner to supervise and/or conduct air monitoring and analysis schemes.

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

### **Applicable Laws:** Laws, regulations and government guidelines for the protection of the environment, workers and others as adopted by specific jurisdictions including, but not limited to, federal, state, county, city and special enforcement districts which include AQMD/APCD, DOT, EPA, OSHA and NIOSH.

### **Asbestos:** The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite - grunerite (amosite), anthophylite, actinolite and tremolite.

### **Asbestos-Containing Material (ACM):** Material composed of asbestos of any type and in an amount greater than 1% by weight analyzed using the method as described in Appendix “A” subpart “F” 40 CRF Part 763 Section 1, Polarized Light Microscopy.

### **Asbestos-Containing Building Material (ACBM):** Building material containing greater than 1.0% asbestos by weight found in or on interior structural members or other parts of a building.

### **Asbestos-Containing Construction Material (ACCM):** Material containing asbestos in an amount between 0.1% - 1.0% by weight.

### **Asbestos-Containing Waste Material:** Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.

### **Asbestos Debris:** Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

### **Asbestos Project Manager:** An individual qualified by virtue of experience and education, designated as Owner’s Asbestos Representative and responsible for overseeing the asbestos abatement project.

### **Authorized Visitor:** Building Owner or it’s Representatives, and any representative of a regulatory or other agency having jurisdiction over the project.

### **Barrier:** Any surface that seals off the work area to inhibit the movement of fibers.

### **Breathing Zone**: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

### **Category I**: NESHAPS 1990 Final rule, "non-friable ACM are resilient floor covering, roofing products, gaskets, and packings. If these materials are in poor condition and are friable or they are subject to sanding, grinding, cutting, or abrading they are to be treated as friable material.

### **Category II**: "Non-friable material ACM, excluding Category I, that meets the definition the same as Category I.

### **Ceiling Concentration**: The concentration of an airborne substance that shall not be exceeded.

### **Certified Industrial Hygienist (C.I.H.)**: 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 work decontamination enclosure system with provisions for storage of worker’s street clothes and clean protective equipment.

### **Competent Person/Contractor Supervisor:** The individual working on behalf of the Asbestos Abatement Contractor, normally the Project Foreman. Individuals must have training equivalent to AHERA Contractor/Supervisor. Training must be by EPA accredited training provider.

### **Contractor:** The individual and/or legal entity and its subcontractors and employees of the contractor and subcontractor awarded the contract. As used in this Specification, “Contractor” means, in addition to the actual license holder, any administrative or supervisory personnel having authority to act for the license holder on this project.

### **Curtained Doorway:** A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing the vertical edge of one sheet along one vertical side of the doorway and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

### **Decontamination Enclosure System:** A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of worker and equipment.

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

### **Disposal Bag**: A properly labeled 6 mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site as defined in OSHA appendix G to 29 CFR 1226.58 and NESHAPS 40 CFR part 61 subpart "M" 1990 Final Rule.

### **Encapsulant:** A liquid material applied to asbestos containing material whichcontrols the possible release of asbestos fibers from the material either by creating amembrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

#### **Bridging encapsulant**: an encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

#### **Penetrating encapsulant**: an encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

#### **Removal encapsulant**: a penetrating encapsulant specifically designed to minimize fiber release during removal of ACBM’s rather that for in situ encapsulation.

### **Encapsulation:** The application of an encapsulant to asbestos containing materials to control the release of asbestos fibers into the air.

### **Enclosure:** The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asebestos fibers into the air.

### **Equipment Decontamination Enclosure System:** That portion of a decontamination enclosure system designed for controlled transfer of materials and equipment into or out of the work area, typically consisting of a washroom and holding area.

### **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 of a facility.

### **Filter**: A media component used in respirators to remove solid or liquid particles from the inspired air.

### **Fixed Object:** A piece of equipment or furniture in the work area which cannot be removed from the work area.

### **Friable Asbestos Material:** Asbestos containing material which can be crumbled to dust, when dry, under hand pressure and contains >1% asbestos by weight.

### **Glovebag Technique:** A method with limited applications for removing small amounts of friable asbestos-containing material from ducts, short piping runs, valves, joints, elbows and other non-planar surfaces in a non-contaminated (plasticized) work area.

### **HEPA Filter**: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in diameter.

### **HEPA Filter Vacuum Collection Equipment (or vacuum cleaner)**: High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

### **High-efficiency particulate air filter**: (HEPA) refers to a filtering system capable of trapping and retaining 99.97 percent of all mono-dispersed particles 0.3 um in diameter or larger.

### **Negative Pressure Respirator**: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

### **Holding Area:** A chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area. The holding area comprises an airlock.

### **“Monitoring”:** Includes a) Visual inspection for the present of visible debris or emissions; b) Air sampling and analysis to determine f/cc inside and outside the work area; c) Bulk sample analysis of encapsulated materials; d) Performance evaluation of work methods, procedures and employees.

### **Movable Object:** A piece of equipment or furniture in the work area which can be removed from the work area.

### **Negative Pressure Ventilation System:** A portable exhaust system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas.

### **Outside Air:** The air outside buildings and structures.

### **Owner:** The owner of the facility or site. As used in this Specification, “Owner” is Bakersfield City School District.

### **Personnel Monitoring:** Air sampling taken in the operator breathing zone (OBZ) of an asbestos worker to comply with OSHA regulations.

### **Plasticize:** To cover floors and walls with plastic sheeting as herein specified.

### **Pressure Differential and Ventilation System**: A local exhaust system, utilizing HEPA filtration capable of maintaining a pressure differential with the inside of the Work Area at a lower pressure than any adjacent area, and which cleans re-circulated air or generates a constant air flow from adjacent areas into the Work Area.

### **Protection Factor**: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by respirator to the wearer.

### **RACM**: Regulated Asbestos- Containing Material means: a) Friable asbestos Material, b) Category I nonfriable ACM that has become friable, c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or d) or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by 40 CFR part 60 subpart "M" 1990 Final Rule.

### **Prior Experience:** Experience required of the Asbestos Abatement Contractor on asbestos projects of similar nature and scope to insure capability of performing the asbestos abatement in a satisfactory manner. Similarities shall be in areas related to material composition, project size, abatement methods required, number of employees and the engineering, work practice and personal protection controls required.

### **Regulated Areas:** Area established to demarcate areas where airborne concentrations of asbestos may exceed the permissible exposure limit (29 CFR 1926.1101).

### **Removal:** The stripping of any asbestos containing materials from surfaces of 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.

### **Respirator**: A device designed to protect the wearer from the inhalation of harmful atmospheres.

### **Shower Room:** A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination.

### **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.

### **Strip:** To take off friable asbestos materials from any part of a facility.

### **Structural Member:** Any load-bearing 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.

### **Surfactant:** A chemical wetting agent added to water to improve penetration.

### **Time Weighted Average (TWA)**: The average concentration of a contaminant in air during a specific time period.

### **Visible Emissions:** Any Emissions containing particulate asbestos materials that are visually detectable without the aid of instruments.

### **Waste Transfer Airlock:** A decontamination system utilized for transferring containerized waste from inside to outside of the work area.

### **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 surfactant.

### **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 or which are used by the Asbestos Abatement Contractor for ancillary operations such as offices, storage, mobilization or channelization. The work area is generally the portion of the facility which is under control of the Asbestos Abatement Contractor during the project.

### **Worker Decontamination Enclosure:** A decontamination system consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area airlocks and contained doorways. This system is used for all worker entries to and exits from the work area and for equipment and waste pass out for small jobs.

## REFERENCE STANDARDS - ASBESTOS ABATEMENT

### Summary

### This sub-section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification.

### This sub-section also sets forth those notices and permits which are known to Owner, and which either must be applied for and received, or which must be given to governmental agencies before start of work.

### Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.

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

### CODES AND REGULATIONS

### General Applicability of Codes and Regulation and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

### Asbestos Abatement Contractor Responsibility: The Asbestos Abatement Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, building occupants, visitors to the site, and persons occupying areas adjacent to the site.

### The Asbestos Abatement Contractor is responsible for providing medial examinations and maintaining medical records of personnel as required by the applicable Federal, Sate and local regulations.

### The Asbestos Abatement Contractor shall hold Owner, or its Representatives harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

### Applicable Publications

### The publications listed below forms a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

### Code of Federal Regulations (CFR)

### U.S. Department of Labor

#### 29 CFR 1910.20: Access to Employee Exposure and Medical Records

#### 29 CFR 1910.134: Respiratory Protection

#### 29 CFR 1910.145: Specification for Accident Prevention Signs and Tags

#### 29 CFR 1910.1001: Occupational Exposure to Asbestos

#### 29 CFR 1910.1200: Hazard Communication

#### 29 CFR 1926.1101: Asbestos Tremolite, Anthophyllite and Actinolite

### U.S. Environmental Protection Agency

#### 40 CFR 61: General Provisions Subpart A

#### 40 CFR 61: National Emission Standard for Asbestos, Subpart M

#### 40 CFR 61.152: Standard for Waste disposal for Manufacturing Demolition, Renovation, Spraying and Fabricating Operations

#### 40 CFR 241: Guidelines for the Land Disposal of Solid Waste

#### 40 CFR 257: Criteria for Classification of Solid Waste Disposal Facilities

#### 40 CFR 763: Subpart E, Asbestos Containing Materials in Schools

#### 40 CFR 763: Appendix C to Subpart E Asbestos Model Accreditation Plan

#### EPA-560-OPTS-86-00: A Guide to Respiratory Protection for the AsbestosAbatement Industry

#### EPA-560/5-85-024: Guidance for Controlling ACBM’s in 1985)

### U.S. Department of Transportation

#### 49 CFR 173.1090: Shippers - General Requirements for Shipments and Packaging

#### 49 CFR 177.844: Carriage by Public Highway

### American National Standards Institute (ANSI)

#### Z9.2-79: Fundamentals Governing the Design and Operation of Local Exhaust Systems

#### Z88.2-80: Practices for Respiratory Protection

### American Society for Testing Materials (ASTM)

#### E-849-82: Safety and Health Requirements Relating to Occupational Exposure to Asbestos

#### P-189: Specification for Encapsulants for Friable ACBM

### National Fire Protection Association (NFPA)

#### Standard 90A Installation of Air Conditioning and Ventilation Systems

### National Institute of Occupational Safety and Health (NIOSH)

#### Manual of Analytical Physical and Chemical Analysis Method (P&CAM) Methods, 2nd Edition, Vol. I,

#### Method 7400: Fibers (N1, 3rd Edition, Vol. I)

### Underwriters Laboratories, Inc. (UL)

#### 586-77 (R-1982): Test Performance of High Efficiency, Particulate, Air Filter Units

## SUBMITTALS - ASBESTOS ABATEMENT

### **Contractor Submittals (Following Award)**

### Copy of current State of California, Contractor License

### Copy of current Contractor License to perform asbestos related work in California

### Copies of current AHERA accreditation for all Asbestos Abatement Contractor, Abatement Contractor/Supervisor(s) and Asbestos Workers

### Copy of current registration with DOSH/Cal/OSHA for Asbestos Work in California

### Current copies of Employee Medical Clearances (within last 12 months)

### Company Illness and Injury Prevention Plan

### Company Respiratory Protection Plan

### Copy of Standard Forms – Section 02 82 14

### **Representative and Warranties**

### By submitting bid, Asbestos Abatement Contractor/bidder represents and warrants to Owner that:

### Asbestos Abatement Contractor is completely familiar with all applicable laws, regulations and guidelines of the varying jurisdictions in which the work is to be done.

### Asbestos Abatement Contractor and the Contractor shall protect and keep Owner and T. Brooks & Associates, a division of Provost & Pritchard Consulting Group, and their agents and employees, harmless and free from all liability, penalties, fines, losses, damages, costs, expenses, causes of action, claims or judgement resulting from injury, harm or exposure in any manner to asbestos, asbestos-containing materials, fibrous asbestos and airborne asbestos fibers, to any persons or property arising out of or in any way connected with the performance of work under this Contract, and shall indemnify said parties from any claims, suits or actions therefrom, including attorney’s fees.

### The Contractor shall further hold harmless Owner and T. Brooks & Associates, a division of Provost & Pritchard Consulting Group free from liability or claims for any injuries to a death of Contractor’s or subcontractor’s employees resulting from any cause whatsoever, and shall indemnify same from any costs, expenses or judgements (including attorney’s fees) paid or incurred on that behalf.

### The Contractor shall dispose of asbestos-containing materials in a landfill which is licensed to accept abestos waste. Each landfill shall indemnify, defend and hold harmless Owner against all liabilities arising as a result of the landfill becoming subject to removal or remedial actions under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 USC § 9600 et seq., or comparable state law.

### Asbestos Abatement Contractor is experienced in performing the asbestos abatement work associated with project. At the request of Owner, the Contractor shall provide documentation of relevant experience and references.

### Asbestos Abatement Contractor shall demonstrate that they have sufficient personnel resources to successfully complete the work under this project. Asbestos Abatement Contractor and Contractor shall use only qualified subcontractors and that all subcontractors will be under bidder’s control at all times in regards to quantity and quality of employees, methods and materials and that the Asbestos Abatement Contractor and Contractor shall retain responsibility for all work of subcontractors within the limits required by law.

### **Submittals Prior to Start of Work**

### Proof of Notification in the form of copies of documents submitted to:

#### California Division of Occupational Safety and Health (Asbestos Notification)

#### California Division of Occupational Safety and Health (Lead Notification)

#### EPA, Region IX, NESHAP (if required)

#### San Joaquin Valley Air Pollution Control District (Central Region Office)

### Asbestos Contractor Information Detail Section 02 82 14

#### Emergency Information (On Contractor Letterhead)

#### Authorized Project Personnel Section 02 82 14

#### Medical Testing Certification Section 02 82 14

#### Respirator Fit Test Certification Section 02 82 14

#### Certificate of Worker’s Acknowledgment Section 02 82 14

#### Asbestos Waste Disposal Site Section 02 82 14

### Contractor shall provide all required completed Standard Forms in submittal binders and equivalent to number of required submittals as required by primary design professional.

### Provide Project Schedule for all abatement related work as required in Project General Conditions. Schedule shall indicate Set-up, Abatement, and Clearance Phases).

### List of all abatement personnel, including full name, date of birth, and SSN assigned to this project.

#### “Competent Person” as required by 8 CCR 1529

##### Asbestos-Specific Training

##### Experience

##### Medical Testing

##### Respirator Fit-Testing

##### AHERA accreditation

##### Employee Release Form

### For each employee who will work or enter any “Regulated Area”:

#### Asbestos-Specific Training

#### Experience

#### Medical Testing

#### Respirator Fit-Testing

#### AHERA accreditation

#### Employee Release Form

### Emergency Information (on Asbestos Abatement Contractor Letterhead)

### Name, location and EPA designation of Waste Disposal Site

### Name, address and EPA registration of Hazardous Waste Hauler

### Subcontractor(s) License(s) if required

### MSDS sheets for any materials which require them.

### Description or drawings of:

#### Abatement area

#### Negative Air system, including number, placement of units and location of exhaust ports to outside the work area

#### Decontamination area

#### Waste pass-out area

#### Emergency Exit(s)

#### Location of dumpsters or containers

### Manufacturers’ Data or Technical Data Sheets, including any required testing for:

#### Respirators

#### Negative Air System Components

#### HEPA Vacuums

#### Waste Water Filtration System

#### Compressed Air System (if applicable)

#### Encapsulant(s)

#### Refinish materials (if applicable)

### Submittals - Products

#### Contractor shall provide required submittals in electronic format.

#### Required submittals: Contractor shall provide a complete list of all products proposedfor use on the project in the form of a project submittal. Prepare a complete list indicating each product listed. Include the manufacturer's name and proprietary product names for each item listed. Include product data sheetson each product.

#### Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:

##### Related Specification Section number.

##### Generic name used in Contract Documents.

##### Proprietary name, model number and similar designations.

##### Manufacturer’s name and address.

##### Suppliers name and address.

##### Installer’s name and address.

##### Projected delivery date, or time span of delivery period.

### Negative Exposure Assessment/Exposure Assessment

#### Asbestos Abatement Contractor shall submit a copy of any proposed “Negative Exposure Assessment” or “Exposure Assessment” for consideration by Owner’s Asbestos Representative in the selection of the appropriate respiratory protection as required by 8 CCR 1529. Failure to submit data, or incomlete data shall mandate use of level of respiratory protection as required by applicable regulations, until such time as appropriate data is generated any approved by the APM.

### **Submittals During Project**

### Daily Entry/Exit Log

### Abatement Contractor Daily Logs

### Analytical results of air samples taken to comply with 8 CCR 1529. Provide within 48 hours of shift during which samples were collected.

### Notification of any changes in personnel, resources or schedule.

### Notification of any injury or accident to employees or others when due work in progress.

### Hazardous Waste Manifests

### **Submittals At Conclusion of Project**

### Copies of remaining entry/exit logs

### Notes or logs kept by job foreman/supervisor

### Hazardous Waste Manifests

## ASBESTOS ABATEMENT - CONTRACTOR PERSONNEL

### General

### Asbestos Abatement Contractor’s employees assigned to this project shall be adequately trained and experienced to perform the work in a manner commensurate with all applicable codes, these specifications, and good standards of industry practice.

### The Contractor and the Asbestos Abatement Contractor shall be responsible to Owner for the acts and omissions of Asbestos Abatement Contractor’s employees, subcontractors and their agents and employees and other persons performing any of the work under the supervision or direction of the Asbestos Abatement Contractor.

### Asbestos Abatement Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the work any unfit person or anyone not skilled in the task assigned.

### Asbestos Abatement Contractor shall employ a competent superintendent who oversees all work in conjunction with this project. The superintendent shall represent Asbestos Abatement Contractor and all communications given to the superintendent shall be considered binding as if given to the Asbestos Abatement Contractor. Superintendent shall be present at all scheduled job progress meetings, or unscheduled meetings when reasonable notice is given.

### **Training**

### Asbestos Abatement Contractor shall ensure that all of its employees who will contact or disturb asbestos-containing or asbestos contaminated materials for abatement and auxiliary purposes, and all supervisory personnel who may be involved in planning, execution or inspection of abatement projects have the required training and appropriate certification. Training shall comply with EPA (TSCA) and 8 CCR 1529 OSHA requirements. Training shall be by a State of California approved training provider.

### Training shall provide, at a minimum, information on the following topics:

#### The health hazards of asbestos including the nature of various asbestos related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency periods for disease and health basis for standards.

#### The physical characteristics of asbestos including fiber size, aerodynamic properties, physical appearance, and uses.

#### Employee personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the face-piece-to-face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g. facial hair), selection and use of disposable clothing, use and handling of launderable clothing, non-skid shoes, gloves, eye protection and hardhats.

#### Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.

#### Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.

#### Work practices for asbestos abatement including purpose, proper construction and maintenance of air-tight plastic barriers, job set-up of airlocks, worker decontamination systems and waste transfer airlocks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste clean-up and storage and disposal procedures.

#### Personal hygiene including entry and exit procedures for the work area, use of showers, and prohibition of eating, drinking, smoking and chewing in the work area.

#### Special safety hazards that may be encountered including electrical hazards, air contaminants, encapsulants, materials from Owner operation, fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress and noise. Contractor shall take all steps necessary to protect employees from potential hazards.

#### Supervisory personnel shall, in addition, receive training in contract specifications, liability insurance and bonding, legal considerations related to abatement, establishing respiratory protection medical surveillance programs, EPA, OSHA and State record keeping requirements, and specific instructions pertaining to the performance of this project.

#### All other requried training topics and material.

#### Required asbestos training must be current (within the last twelve months) for the duration of the project. Any employee whose training expires shall not work on the jobsite until such time as a current certificate is provided.

### **Medical Monitoring**

### Medical Monitoring must be provided in accordance with Title 8 CCR 1529, including mandatory appendices.

### Asbestos Abatement Contractor shall document that all abatement workers have successfully passed medical examinations as required by OSHA regulations.

## TEMPORARY FACILITIES AND CONTROLS - ASBESTOS ABATEMENT

### **Temporary Facilities**

### Contractor to provide a temporary office for use by its personnel. Contractor shall be responsible for connection of electricity, plumbing, or telephone service it requires.

### Provide “lockable” containers at the site for the storage of tools and materials used in asbestos abatement. Contractor shall be responsible for security of container and any equipment maintained on project site.

### Contractor will provide portable restroom facilities for use by its workers and site personnel at the project location. Contractor shall maintain facilities in clean condition.

### **Water for Construction**

### The Asbestos Abatement Contractor may utilize water available on the subject property as long as it is from a source legally belonging to or accessible to the Owner. If water is not available at the site, or water needs go beyond what is available at the subject property, Contractor shall supply water from outside source and shall include cost for water, including delivery and storage in their bid for the work.

### **Electricity**

### Asbestos Abatement Contractor shall provide portable electrical generator as required for all aspects of the work to operate power tools and equipment necessary or required to complete the work under the Agreement if needs exceed electrical power available at the site. Contractor shall include cost to provide temporary electrical power in their bid for the work if power is not available at site, or portions of the site, or is inadquate based on project needs.

### All circuits within containment areas shall be locked out to prevent possible electrical shock during wet operations. Electrical power sources shall be located outside of work areas.

### **Handling Material**

### The Asbestos Abatement Contractor shall properly care for and protect materials and equipment at the site. Placement of building materials and equipment at the site shall be subject to the approval of Owner.

### The Asbestos Abatement Contractor shall keep the work area clean to the satisfaction of the Owner and its Representative, and prevent disturbance or debris from the work at all times and prevent release of asbestos from the work area adjacent to areas or portions of the building or building exterior.

### Upon completion of the work per work area and at completion of all work, leave grounds in a neat and clean condition and asbestos free.

### **Cleaning**

### The Asbestos Abatement Contractor shall keep the work areas clean to the satisfaction of the Owner, and shall prevent disturbance of occupants in adjacent rooms, and shall remove accumulated debris from the work at all times and prevent release of asbestos from the work area into adjacent areas or portions of the building or building exterior.

### Upon completion of the work area per day and at completion of all work, leave grounds in a neat and clean condition.

### **Hoist and Temporary Elevators (Where Applicable)**

### The Asbestos Abatement Contractor shall install and operate hoist and elevators as required for proper execution of the work and obtain permits, in compliance with all Applicable Laws.

### **Barricades and Walkways**

### Maintain at all times adequate barricades or enclosed walkways to satisfaction of the Owner, to protect the workmen, and the public from injury and prevent access to the work areas to the satisfaction of Owner.

### **Advertisement Signs**

### Advertisement signs may not be displayed on the property unless approved by the Owner.

### **Inspection and Testing**

### Inspection Agency: An independent testing laboratory selected by Owner shall perform any specified testing and laboratory analysis.

### Payment of Testing: Testing laboratory charges for work performed by Owner’s Asbestos Representative will be paid by Owner, except as otherwise identified in this specification, and shall not be included as part of the contract.

### Payment of Re-Testing: Should the results of the laboratory test indicate that the material or workmanship fails to comply with requirements of the specifications, the work shall be redone at the Asbestos Abatement Contractor’s expense until it does satisfy the requirements. The final results shall be verified as acceptable by laboratory tests which shall be paid by the Asbestos Abatement Contractor, at his expense.

### **Employee Conduct**

### The Asbestos Abatement Contractor shall be responsible for ensuring that it’s employees comply with all Applicable Laws and perform work in a safe manner. Any employees entering the work area under the influence of alcohol or drugs shall be immediately removed by the Asbestos Abatement Contractor from the job site. In the event there is any question whether said employee is under the influence of alcohol or drugs, the Asbestos Abatement Contractor shall temporarily remove said employee from the job site until the question is resolved by the Asbestos Abatement Contractor and Owner.

# PRODUCTS

## PRODUCT OPTIONS AND SUBSTITUTIONS - ASBESTOS ABATEMENT

### **General**

### The Contract is based on the materials, equipment and methods described in the Contract Documents.

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

### Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Replacement materials shall be stored outside of the work area until abatement is completed.

### Damaged, deteriorating or previously used materials shall not be used and shall be removed from the work-site and disposed of properly.

### **Unavailability of Materials**

### Verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the work.

### In the event that specified items will not be so available, Contractor may submit, in writing, substitute materials of equal quality for approval by Owner’s Asbestos Representative. Substitute materials are not to be considered equal until approved in writing by Owner’s Asbestos Representative.

### Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Asbestos Abatement Contractor, will be back-charged as necessary and shall not be borne by Owner.

### **Owner’s Asbestos Representative for Asbestos Related Work:**

### Owner’s Asbestos Representative will respond in writing to the Asbestos Abatement Contractor within seven (7) calendar days of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. Owner’s Asbestos Representative will include a list of unacceptable product selections, containing a brief explanation for this action.

### **Quality Assurance**

### Compatibility of Options: When the Asbestos Abatement Contractor is given the option of selecting between two or more products for use on the project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

### **Product, Deliver, Storage, and Handling**

### Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

### Schedule delivery to minimize long-term storage at the site and overcrowding of construction spaces.

### Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

### Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protection and installing.

### Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

### Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

### Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

### Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation.

### Maintain temperature and humidity within range required by manufacturer's instructions.

## PRODUCT SELECTION

### Standard Products: Where available, provide standard products of types that have been used successfully in similar situations on other projects.

### Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous project experience. Procedures governing product selection include the following:

### Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Asbestos Abatement Contractor to use of these products only, the Asbestos Abatement Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions governing "substitutions" to obtain approval for the use of an unnamed product.

### Descriptive specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

### Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall Performance of a product is implied where the product is specified for a specific application.

### Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

### Compliance with Standards, Codes, and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

### Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division-1 for allowances that control product selections, and for procedures required for processing such selections.

### **Materials**

### Material Safety Data Sheet (MSDS) will be submitted for each product or material to be used in conjunction with the work.

### Wetting Agent: The wetting agent shall be BWE 5000 manufactured by Better Working Environments, Inc. of San Diego, CA, or approved equivalent.

### Surfactant: (wetting agent shall be a 50/50 mixture of polyoxethylene ether and polyoxethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to .5 gallons of water or as specified by manufacturer.

#### Reference Materials: Aqua-Gro or equal.

#### As an alternate to these surfactants, specialized removal materials may also be used:

### Reference Materials: BWE500 (Better Working Environments, Las Vegas, Nevada) or EPA-55 (American Coatings Corporation, Niles IL).

### Encapsulant(s): Encapsulant used to reseal surfaces from which asbestos has been removed and to “lock-down” all remaining microscopic asbestos-containing particulate. Material shall be compatible with intended use, operating characteristics and environmental condition.

#### Encapsulants should not be solvent-based or utilize a vehicle consisting of hydrocarbons.

#### Reference Materials: Foster’s 22-P or Cable Coat 2-B (American Coatings Corporation, Niles, Il) or BWE 3000 (Better Working Environments, Las Vegas, Nevada) or equivelant.

#### Encapsulants shall be of the bridging or penetrating variety.

#### Factory mutual approval for Class A construction

#### Underwriter Laboratory approval for Class A

#### Flame Spread Class A - 0 to 2

#### Encapsulating Material: Encapsulation material shall provide penetrating or bridging characteristics adequate to protect against fiber release and shall have been tested by methods compatible with those used by Battelle Laboratories Protocol.

##### Foster’s as manufactured by H.B. Fuller Co. of Houston, Penetrating Encapsulant: No. 207 Special Sealer No. 33775-2-7A, Makus-Cincinnatus Inc.; or approved equal.

##### Bridging Encapsulant: Pentagon Plastics Inc., or approved equal.

##### Fibercote manufactured by Northwest Coating, Inc., Edmonds, WA, or approved equal.

### Sealants: Select from the following or their equivalent if approved for use on the project. All materials should be field tested and used according to the manufacturers’ specifications.

### No. 207 Special Sealer No. 33775-27A as manufactured by Makus-Cincinnatus, Inc., distributed by Northwest Coatings, Inc., P.O. Box 635, Edmonds, WA 98020, Telephone (206) 778-5644. (Application rate as recommended by manufacturer, or approved equal.)

### “Asbestos 2000," Arpin Products, Inc., P.O. Box 262, Oak Hurst, MJ 07755, Telephone (202) 531-0674. (Application rate as recommended by manufacturer, or approved equal.)

### “Wedbestos Sealer,” Webco Products, Stinnes Western Chemical, 3270 East Washington Blvd., Los Angeles, CA 90023, Telephone (213) 269-0191. (Application rate as recommended by manufacturer, or approved equal.)

### “Dust-Set,” Mateson Chemical Corp., 1025 E. Montgomery Ave., Philadelphia, PA 19125, Telephone (215) 423-3200. (Application rate as recommended by manufacturer, or approved equal.)

### “Fibersele,” penetrating sealant manufactured by Northwest Coatings, Inc., Edmonds, WA 98020, Telephone (206) 778-5644. (Application rate as recommended by manufacturer, or approved equal.)

### Tape or Spray Adhesive: Tape or Spray Adhesive shall be capable of sealing joints of adjacent plastic sheets and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials and of adhering under dry and wet conditions, including use of amended water.

### Plastic Sheet: All plastic sheeting must be minimum six mil. and fire retardant and shall be polyethylene material sized in lengths and widths to minimize the frequency of joints. All critical barriers shall consist of min. six ( 6) mil. polyethylene film.

### Lumber/Wood: All wood used in the construction of the enclosure/decontamination system must be a treated fire retardant type.

### Plastic Bags: Plastic bags shall be a minimum six mil. clear polyethylene printed with warning labels per OSHA and EPA regulations.

### Glove Bags: Glove bags shall be a minimum of six mil. PVC and specially designed for removal of asbestos-bearing insulation.

### All unused products shall remain the property of the Asbestos Abatement Contractor and shall be removed from the project site before completion of the project.

### **Execution**

### Installation of Products

#### Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located, and aligned with other work.

#### Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion

## WORK AREA CLEARANCE - ASBESTOS ABATEMENT (DEMOLITION)

### **General Related Documents**

### Project construction drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to work of this section.

### **Visual Inspections**: Required as a prerequisite of individual containment areas. Requires “Certificate of Visual Inspection” to be signed by representative of Asbestos Abatement Contractor and Owner’s Asbestos Consultant.

### **Final Air Clearances:** Project requires performance of Final Air Clearances for each containment area where disturbance of ACM occurs. Final Air Clearances will comply with AHERA requirements.

### Final Air Clearances will be conducted as a condition of successfully meeting project requirements prior to re-occupancy by non-abatement construction personnel and/or students and staff.

### **Owner’s Asbestos Representative and These Specifications**

### Owner’s Asbestos Representative may conduct air monitoring on behalf of Owner at it’s discretion.

### Owner’s Asbestos Representative will conduct a final visual inspection within each containment area following completion of abatement operations as a condition of acceptance of work.

### Contractor shall not request an extension of the Contract based on delays associated with their failure to determine the scope of work involving abatement operations, additional abatement work, or additional Final Air Clearances necessitated by failure of Contractors to successfully pass the initial Final Air Clearance.

### Asbestos Abatement Contractor shall be responsible to pay all costs associated with supplemental clearance rounds including field time, laboratory costs, consulting fees, shipping, and all associated costs based on failure to comply with specified clearance criteria and EPA clearance requirements.

### Building Owner shall be responsible to pay costs associated with the initial Final Air Clearance per containment area. At its discretion, the Owner may hold the Contractor responsible for costs associated with all follow-up air clearances necessitated by Contractor’s failure to meet AHERA clearance criteria (per containment) and may deduct costs for each repeat final air clearance from monies owed the contractor under the Agreement.

### **Testing Costs**

### Asbestos Abatement Contractor’s air sampling operations, including labor, equipment, material, and laboratory analysis shall be paid by the Asbestos Abatement Contractor and shall be included in their bid for the work.

### Owner shall pay for all inspections and sampling done at its request unless such costs are otherwise provided for in the contract, including perimeter air sampling and initial (1) final air clearance per containment area.

### Contractor shall not request an extension of the Contract based on delays associated with their failure to determine the scope of work involving abatement operations, additional abatement work necessitated by failure of Contractors to successfully pass any Final Visual Inspection and/or any Final Air Clearance.

### **Release Criteria: Abatement related work is complete if the following conditions are met:**

### The Owner’s Asbestos Representative shall upon notice that specified abatement operations are complete (per containment area) conduct an on-site visual inspection to ensure that the abatement work has been completed in accordance with these specifications.

### The Asbestos Abatement Work Area is considered to have met clearance criteria and to be safe to occupy when airborne asbestos structure concentrations have been determined to be below applicable regulatory airborne levels as herein defined per the AHERA regulation (40 CFR Part 763 subpart E) within each Work Area.

### Upon satisfactorily passing the visual inspection and final air clearance and acceptance of work by Owner, Contractor proceed with reconstruction work on a building by building basis.

### If the visual inspection and/or final air clearance does not successfully pass as determined by the Owner’s Representative, the Contractor shall conduct additional abatement, decontamination, and/or cleaning to satisfaction of Owner’s Representative. Upon completion of additional work, visual inspection and final air clearance shall be repeated until Owner and it’s Representative are satisfied that work has been completed satisfactorily and completely. Contractor shall be responsible for all costs associated with additional visual clearance related events based on failure to successfully meet visual inspection and final air clearance criteria for containments and may deduct cost of additional air clearances from monies owed the Contractor under the Agreement.

# EXECUTION

## ASBESTOS ABATEMENT: GENERAL

### **General**

### Asbestos Abatement Contractor shall supply all labor, materials, equipment, insurance and disposal to remove identified ACBM’s as well as assumed and presumed (PACM) ACMs’, and ACCM’s indicated in this Specification and as listed in the previous asbestos survey report for the specified school site. Contractor shall refer to project construction drawings, previous asbestos survey, specification sections and all design documents to determine work that may involve disturbance of asbestos-containing materials.

### Asbestos Abatement Contractor shall be Certified for Asbestos Work by the California State Contractor’s Licensing Board.

### Each employee of Asbestos Abatement Contractor assigned to this work shall be trained in accordance with the requirements of the EPA (TSCA) and Title 8 CCR 1529 and shall be a State of California Certified Asbestos Superviser or Worker. At least one employee on each shift shall have successfully completed current refresher training meeting the requirements for “Competent Person” (Title 8 CCR 1529).

### All work shall be done in accordance with applicable regulations, including, but not limited to: 29 CFR 1926.1101(Federal OSHA), Title 8 CCR 1529 (Cal-OSHA), 40 CFR Part 61 (NESHAPS), including mandatory and non-mandatory appendices as applicable.

### Asbestos Abatement Contractor shall make all necessary notifications according to the form, content and schedule required by applicable laws and regulations.

### **General Parameters**

### Asbestos Abatement Contractor shall remove all asbestos-containing material as required to complete scope of work, and authorized change orders based on review of all project design documents.

### Asbestos Abatement Contractor shall review all project construction drawings , previous asbestos survey report, and specifications regarding scope of work to determine locations where ACBM’s are present which are to be removed in order to complete the scope of demolition or renovation as determined by the Owner. Contractor shall not request or be awarded additional compensation for work due to their failure to adequately determine the scope of abatement work based upon review of all pertinent design documents and field verification of existing condition effecting completion of the work.

### Asbestos Abatement Contractor shall protect employees of Owner, and others from inhaling asbestos fibers in excess of Cal/OSHA regulations. Asbestos Abatement Contractor shall take measures to maintain airborne levels below required levels in accordance with Cal/OSHA requirementsas and these specifications. Airborne levels may be verified by perimeter air sampling operations conducted by Owner’s Asbestos Representative.

### Asbestos Abatement Contractor shall, during the abatement of ACM, prevent asbestos fiber contamination of any area outside any regulated area as herein defined. Asbestos Abatement Contractor shall erect and maintain negative pressure enclosure(s), and critical barriers to preclude migration of airborne fibers outside the containment area. Compliance with this requirement shall be verified by perimeter air monitoring , visual determination, and recording manometer.

### Asbestos Abatement Contractor shall, during work, limit entry into the work area only to authorized employees and visitors wearing appropriate respiratory protection. Employees may be required to obtain and display a temporary identification badge authorizing entry into the facility. Authorized employees and visitors shall include:

#### Asbestos Abatement Contractor’s employees listed in job submittals

#### Asbestos Abatement Contractor’s authorized supervisory personnel

#### Owner’s Asbestos Representatives

#### Employees of agencies having jurisdiction over the work

#### Authorized employees of Owner

### Asbestos Abatement Contractor shall ensure and document that all asbestos-containing waste has been disposed of in accordance with applicable federal, state and local laws.

### Asbestos Abatement Contractor shall document that all activities are/were in accord with the Project Specifications, the Project Contract Documents and all applicable laws and regulations governing abatement of ACCM/ACBM’s.

### In addition to special precautions required during asbestos abatement, Asbestos Abatement Contractor shall provide a safe working environment and personal protective devices for Asbestos Abatement Contractor’s employees and any authorized visitors.

### Asbestos Abatement Contractor shall pursue work with all due diligence.

### Asbestos Abatement Contractor shall not cease working on this project except at times specified in the project calendar or without prior notification and approval of Owner and its Representative.

### Asbestos Abatement Contractor shall not change or substitute the Asbestos Abatement Contractor Supervisor (Project Foreman) without prior notification and approval of Owner’s Asbestos Representative.

### **Extra Work**

### The Asbestos Abatement Contractor warrants that he/she has become fully familiar with the work including but not limited to the quantities, locations, and types of asbestos containing materials to be abated.

### “Extra Work” may only be authorized by Owner, in writing. Any additional work performed which Owner has not approved in writing shall not be the responsibility of the Owner and the Contractor shall not request compensation.

### Owner’s Asbestos Representative shall approve in writing all additional, unforseen abatement work necessitating a change in contract price. Costs for such work shall be agreed upon by Contractor and Owner prior to initiating work effecting such materials. Negotiated costs shall be all inclusive and shall reflect all costs including labor, materials, insurance, disposal, overhead and profit, etc. and shall be in accordance with project provisions for “change orders”.

### **Stop Work Orders**

### Owner or its Representative may issue a STOP WORK order and suspend work in whole or in part, when in the opinion of Owner, the suspension is necessary or in its best interest.

### Owner’s Asbestos Representative may issue a STOP WORK order whenever the Asbestos Abatement Contractor’s work or protective measures are not in accordance with the Specifications or applicable rules and regulations.

### Any breach in isolation between the regulated area and adjacent areas shall be sufficient reason to issue a STOP WORK order.

### Air sampling inside the work area which results in fiber counts in excess of 0.1 f/cc or 1% of the rated protection limit of other respiratory protection in use at the time of sampling shall be sufficient reason to issue a STOP WORK order.

### Excess ACM debris, visible emissions, or insufficient wetting of ACM may result in a STOP WORK order.

### Complaints from building occupants located in adjacent areas may result in a temporary STOP WORK order. If such complaints are not the result of Asbestos Abatement Contractor’s failure to observe or comply with the Specifications or regulations, time lost on the project shall be added to project time period.

### Visible debris outside the work area shall be sufficient reason to issue a STOP WORK order.

### Upon issuance of a STOP WORK order, abatement work shall not resume until current respiratory protection, and methods and procedures utilized by the Asbestos Abatement Contractor have been evaluated and necessary steps taken to reduce airborne levels below stipulated levels to satisfaction of Owner’s Asbestos Representative.

## SITE PREPARATION - ASBESTOS ABATEMENT

### **General**

### The “Work Area”, including regulated areas, equipment staging areas, and other areas set aside for the use of the Asbestos Abatement Contractor, are at all times during this project the responsibility of the Asbestos Abatement Contractor. Contractor shall maintain areas in clean condition to the satisfaction of Owner’s Asbestos Representative.

### Asbestos Abatement Contractor has the right and obligation to control access to restricted work areas. Employees of Owner may be required to access certain areas during the project for the purposes of servicing or maintaining equipment and for emergencies.Contractor shall provide reasonable access to such personnel and shall maintain two (2) clean and properly functioning PAPR respirators and protective coveralls at the jobsite for use by such persons.

### **Signs and Barriers**

### Perimeter barriers shall be installed around each work area and other areas used by Asbestos Abatement Contractor for storage, disposal or equipment.

### At each access to the regulated area, the Asbestos Abatement Contractor shall install warning signs meeting the requirements of Title 8 CCR 1529 and 40 CFR 763, subpart E.

### **Security**

### Asbestos Abatement Contractor shall be responsible for security of Asbestos Abatement Contractor’s work area, material, equipment and supplies.

### Unless otherwise agreed to in writing, Owner accepts no responsibility for loss of Asbestos Abatement Contractor’s equipment or materials maintained at the project site.

### Asbestos Abatement Contractor shall notify local fire department of the asbestos abatement project and effective dates.

## WORK AREA PREPARATION - ASBESTOS ABATEMENT

### **General**

### Asbestos Abatement Contractor shall post caution signs meeting the specifications of Title 8 CCR 1529 at any location and approaches to a location where airborne concentrations of asbestos may exceed the “Permissible Exposure Limit”.

### Asbestos Abatement Contractor shall determine whether building electrical power or temporary power supply is necessary. All circuits feeding the work area shall be locked out and tagged. Electrical power shall be brought into the work area from circuits and sources outside the containment area. Electrical power beyond that readily at the site will be provided by the Asbestos Abatement Contractor at no additional cost to Owner, including cost of providing temporary electrical power.

### **Emergency Exits**

### Emergency exits shall be established and clearly marked with emergency exit signs complying with applicable fire codes, approved by Owner and clearly marked with duct tape arrows, properly lighted, or other effective designations to permit easy location from anywhere within the work area.

### Emergency exits shall be secured to prevent access from uncontaminated areas and still permit emergency exiting.

### Emergency exits shall be properly sealed with polyethylene sheeting which can be cut to permit egress if needed.

### **Decontamination Area**

### General Requirements

#### Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit the work area.

#### The worker decontamination enclosure system shall consist of at least a clean room, shower room and an equipment room, each separated form the other and from the work area by airlocks and must substantially conform to the requirements of Title 8 CCR 1529.

#### Plans for construction, including materials and layout, shall be submitted to Owner’s Asbestos Representative as part of the submittal package. Worker decontamination enclosure systems constructed at the work-site shall utilize six (6) mil. polyethylene sheeting on sides or other acceptable materials for privacy, whenever visible outside of containment area. For commercial units, Asbestos Abatement Contractor shall submit manufacturer’s data sheet.

#### Entry to and exit from all airlocks and decontamination enclosure system chambers shall be through curtained doorways consisting of two sheets of overlapping polyethylene sheeting. Doorway designs with equivalent protection and acceptable to Owner’s Asbestos Representative may be utilized.

#### Access between any two rooms in the decontamination enclosure system shall be through an airlock with at least 1 foot separating each curtained doorway. Pathways into (from clean to contaminated) and out from (contaminated to clean) the work area shall be clearly designated.

#### 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.

### Decontamination Area – Construction

#### Construction, whether job-built or commercial, shall be of sturdy materials capable of withstanding the flow of person, equipment and material.

#### In areas where no other security against entry can be provided, the outside door to the clean-room must be provided with a lock or other security device. Asbestos Abatement Contractor shall make provision for access into the work area by authorized representatives and visitors.

#### Clean room shall be sized to adequately accommodate the work crew. If the clean room is not of sufficient size to contain storage lockers or bins for employee’s clothing and respiratory equipment, such storage shall be provided in a secure area as close as possible to the entry to the clean room.

#### Shower room shall contain one or more showers as necessary to adequately acommodate all workers.

#### Showers shall be provided with hot and cold running water.

#### Shower water shall be filtered through five (5) micron filter system prior to be disposed of in manner approved by Owner and the local water management authority.

#### Equipment room shall be sized to permit both employee changes and storage of equipment and materials.

## WORKER PROTECTION AND DECONTAMINATION - ASBESTOS ABATEMENT

### **General**

### Asbestos Abatement Contractor shall provide for all employees appropriate personal protective gear and other necessary safety equipment.

### Personal protective gear and safety equipment shall be inspected before each use.

### In addition to requirements of this Section, Asbestos Abatement Contractor may be required to provide additional health and safety protection as required by Owner or its Representative.

### **Asbestos Worker Training**

### AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the AHERA regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

### State and Local License: All workers are to be trained, certified and accredited as required by state or local code or regulation.

#### Train, in accordance with Title 8 CCR 1529 all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in the course to the following:

#### Methods or recognizing asbestos

#### Health effects associated with asbestos

#### Relationship between smoking and asbestos in producing lung cancer

#### Nature of operations that could result in exposure to asbestos

### Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:

#### Engineering Controls

#### Work Practices

#### Respirators

#### Housekeeping procedures

#### Hygiene facilities

#### Protective clothing

#### Decontamination procedures

#### Emergency procedures

#### Waste disposal procedures

#### Purpose, proper use, fitting, instructions and limitations of respirators as required by 29 CFR 1910.134.

#### Appropriate work practices for the work

#### Requirements of medical surveillance program

#### Review of Title 8, CCR 1529 & 29 CFR 1926.1101

#### Pressure Differential Systems

#### Work practices including hands on or on-the-job training

#### Personal Decontamination procedures

#### Air monitoring, personal and area

### **Medical Examinations**

### Provide medical examinations for all asbestos abatement workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an eight (8) hour Time Weighted Average. In the absence of specific airborne fiber data provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in Title 8 CCR 1529.

### **Respiratory Protection**

### General

#### Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 “Practices for Respiratory Protection" and OSHA 29 CFR 1910.134 and 1926.103.

#### Require that respiratory protection be used at all times that there is any possibility of disturbance of ACBM’s whether intentional or accidental.

#### Require that a respirator be worn by anyone in a Regulated Area at all times, regardless of activity, during a period that starts with any operation which could cause cause airborne fibers until the area has been cleared for re-occupancy in accordance with enclosed Sub-Section 1.11.

#### Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used for work involving friable materials be a half-face respirator with high efficiency particulate air filters (HEPA).

#### The Contractor shall upgrade the type of respiratory protection required based on OSHA requirements and initial and on-going personal air monitoring.

### Fit Testing

#### Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Competent Person. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing has been provided.

#### On a monthly basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

#### Upon Each Wearing: Require that each time an air-purifying respirator is put on it be “fit checked” with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980) and 8 CCR 1529.

### Type of Respiratory Protection Required

#### Provide Respiratory Protection as indicated in paragraph below. Where paragraph below does not apply, determine the proper level of protection by dividing the expected or actual airborne fiber count in the Work Area by the "protection factors" given below.

#### The level or respiratory protection which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed

### **Permissible Exposure Limit (PEL)**

### 8-Hour Time Weighted Average (TWA) and Ceiling Concentration of asbestos fibers to which any worker may be exposed shall not exceed the following:

#### Fibers: For purpose of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), or NIOSH 7400 procedure.

#### 8-Hour Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter.

#### Excursion Monitoring: 30 minute PEL: <1.0 fibers/cubic centimeter.

### Respiratory Protection Factor

Respirator Type Protection Factor

Air Purifying: 10

Negative pressure respirator

High efficiency filter

Half face piece

Air Purifying: 50

Negative pressure respirator

High efficiency filter

Full face piece

Powered Air Purifying (PAPR): 50

Positive pressure respirator

High efficiency filter

Half or Full face piece

Type C supplied air: 1000

Positive pressure respirator

Pressure demand or other

pressure positive mode

Half face piece

Type C supplied air: 2000

Positive pressure respirator

Pressure demand or other

positive pressure mode

Full face piece

Type C supplied air: 10,000

Positive pressure respirator

Pressure demand or other

positive pressure code

Full face piece equipped with an

auxiliary positive pressure

Self-contained breathing apparatus (SCBA)

Self-contained breathing apparatus (SCBA): 10,000

Positive Pressure demand or other positive pressure mode

Full face piece

### Asbestos Abatement Contractor shall provide respiratory protection for all employees who enter the regulated area anytime that one can reasonably expect that ACM will be disturbed or that anticipated airborne levels may exceed “0.01 f/cc”.

### Level of Protection

#### Respiratory protection shall be provided per 8 CCR 1529 requirements. The minimum protection required at any time within the regulated area for abatement of friable materials, regardless of fiber level, shall be 1/2-face, negative pressure, (P-100-HEPA filtered respirators operated in positive pressure mode.

#### Type “C” air supplied respirators in positive pressure demand mode with full-face pieces and HEPA filtered disconnect protection are recommended by the U.S.EPA for all full shift abatement work until the successful completion of final clearance monitoring. The Contractor shall be prepared to provide Type "C" respiratory protection in those circumstances required by Cal/OSHA.

#### Compressed air systems, if used, shall be designed to provide air volumes and pressures to accommodate respirator manufacturer’s specifications. The compressed air systems shall have a receiver of adequate capacity to allow escape of all respirator wearers from contaminated areas in the event of compressor failure. Compressors must meet applicable Cal/OSHA requirements. Compressors must have an in-line carbon monoxide and periodic inspection of the carbon monoxide monitor must be evidenced. Documentation of adequacy of compressed air system/ respiratory protection system 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 as described in Compressed Gas Association Commodity Specification G-7.1).

#### Appropriate minimum respiratory protection utilized by Asbestos Abatement Contractor shall be based upon submission and acceptance of “Negative Exposure Assessment” and/or “Exposure Assessment by Asbestos Abatement Contractor. Failure to provide “NEA” or “EA” will result in mandatory respiratory protection as required by OSHA until such time as “NEA” is established.

### Other Personal Protection

#### Full body disposable protective clothing, including head, body, and foot coverings consisting of materials impenetrable by asbestos fibers (Tyvek (R) or equivalent) shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.

#### Disposable clothing shall be worn inside the regulated area any time one can reasonably expect that ACM will be disturbed.

#### Rips or tears in disposable clothing shall be repaired immediately as required by Title 8 CCR 1529.

#### New disposable clothing must be used for each entry into the regulated area.

#### Disposable clothing must be removed in the equipment room before each exit from the regulated area.

#### Eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposal PVC gloves), as necessary, shall be provided to all workers and authorized visitors.

#### Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

## ENTRY AND EXIT PROCEDURES – REGULATED AREA

### General

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

#### All personnel, shall read and be familiar with all posted regulations, personal protection requirements (including workplace entry and exit procedures) and emergency procedures. A sign-off sheet shall be used to acknowledge that these have been reviewed and understood by all personnel prior to entry.

#### All personnel who enter and leave the regulated area must sign the entry/exit log, located outside or in the clean room.

### Entry

#### All personnel shall proceed first to the clean room, remove street clothes and appropriately don respiratory protection (as deemed adequate for the job conditions) and launderable and/or disposable coveralls, head covering and foot covering. Hard hats, eye protection and gloves shall also be utilized if required by work conditions. Clean respirator and protective clothing shall be provided and utilized by each person for each separate entry into the work area.

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

### Exit

#### 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. Each person shall clean bottoms of protective footwear in the walk-off pan just prior to entering the equipment room.

#### Personnel shall proceed to equipment room where they remove all protective equipment except respirators. Deposit disposable [and launderable] clothing into appropriately labeled containers for disposal.

#### Reusable, contaminated footwear, hard hats and similar gear shall be stored in the equipment room when not in use in the work area. Upon completion of abatement it shall be decontaminated or disposed of as asbestos contaminated waste.

#### Still wearing respirators, personnel shall proceed to the shower area, clean the outside of the respirators and the exposed face area under running water prior to removal or respirator then shower and shampoo to remove residual asbestos contamination. Various types of respirators will require slight modification of these procedures. An airline respirator with HEPA filtered may be disconnected in the equipment room and worn in the shower. A powered air-purifying respirator face piece will have to be disconnected from the filter/power pack assembly which is not waterproof, upon entering the shower. A dual cartridge respirator may be worn into the shower. Cartridges must be replaced for each new entry into the work area.

#### After showering and drying off, employees shall proceed to the clean room and don clean disposable clothing if there will be later re-entry into the work area or street clothes.

## HYGIENE

### Asbestos Abatement Contractor shall provide sanitary facilities and toilets as close as possible to the entry of the regulated area.

### No eating, smoking, chewing or drinking shall be permitted in the regulated or decontamination areas.

## DEBRIS AND DECONTAMINATION - ASBESTOS ABATEMENT

### General

### Asbestos Abatement Contractor shall remove all visible asbestos-containing debris prior to any work which would disturb the debris or cause it to become airborne.

### Debris may be wet wiped or HEPA vacuumed.

### **Moveable Equipment and Materials**

### These instructions apply to Owner’s Asbestos Representatives equipment and materials.

### Moveable equipment and materials upon which there is evidence of asbestos-containing debris shall be cleaned before being moved from the regulated area. Asbestos Abatement Contractor shall be responsible to move all furnishings, equipment, or fixtures as necessary to complete scope of work. Asbestos Abatement Contractor personnel are not to unplug any operating systems or equipment without approval of Owner.

## DISPOSAL - ASBESTOS ABATEMENT

### **General**

### This sub-section describes the disposal of Regulated ACBM’s (RACM), non-friable ACBM’s. and ACCM’s. Disposal includes packaging of asbestos-containing waste materials. Disposal shall be at an approved landfill licensed to accept regulated, asbestos-containing waste. ACCM’s may be disposed of as Non-Hazardous in California if confirmed by Point Count as containing “trace” (<1.0%) asbestos content. ACCM not confirmed by Point Count analysis as <1.0% asbestos content shall be disposed of as “ACM” in accordance with local, state and federal regulations.

### Asbestos Abatement Contractor shall be responsible for ascertaining current applicable regulations for handling, transportation and disposal in the jurisdiction in which the work takes place.

### All disposal shall be in accordance with applicable regulations of the U.S. EPA, U.S. DOT, California DHS and the local AQMD/APCD.

### 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 must occur at an authorized site in accordance with regulatory requirements of NESHAP and applicable State and Local guidelines and regulations, including the California Department of Public Health, Toxic Substances Control Division.

### Intact “cementitious” asbestos-containing waste shall be disposed of as non-friable at an EPA licensed landfill in accordance with the landfill requirements.

### Non-friable asbestos-containing material shall be disposed at landfill licensed to accept non-friable material. Packaging shall be in accordance with the requirements of the landfill and local solid waste requirements.

### Contractor shall utilize and provide a “Hazardous Waste Manifest for each shipment of waste defined by the State of California as Hazardous Waste.

### Contractor shall utilize and provide a “Non-Friable Waste Manifest” for each shipment of waste defined by the State of California as Non-Hazardous.

### **Handling**

### Materials are to be removed as intact sections or components whenever possible.

### All material shall be packed in sealed, impermeable containers.

#### Double 6 mil. polyethylene or plastic bags may ordinarily be used.

#### Large components removed intact may be wrapped in 2 layers of 6 mil. polyethylene sheeting secured with tape for transport to the landfill. All labeling requirements shall be met.

#### Asbestos-containing waste with sharp-edged components (e.g., nails, screws, metal lath, tin sheeting) which may tear or puncture the polyethylene bags and sheeting shall be wrapped in additional layers of 6 ml. polyethylene and/or placed into fiberboard or steel drums for disposal.

### Contractor may bulk load asbestos-containing material and presumed asbestos-contaminated building related debris into a 10 mil. polyethylene lined dumpster for transport if acceptable under local, state and federal regulations, and landfill accepting the waste.

### All containers shall be properly labeled in accordance with Title 8 CCR 1529.

#### If containers are not pre-stenciled by manufacturer, adhesive labels including all required information are to be attached.

#### Adhesive labels are to be securely attached and placed on the upper portion of the container.

#### Each waste bag shall include generator information as required by federal and state regulations which shall be plainly visible.

### **Waste Pass-Out**

### Remove all containerized waste from the work area through waste container pass-out airlock.

#### Pre-clean all bags in the equipment area of the pass-out system.

#### Clean exterior of bag.

#### Pass through airlocks.

#### Place in second bag on the clean side of the waste pass-out system.

### **Preparation for Transport**

### Once drums, bags and/or wrapped components have been removed from the work area, they shall be loaded into an enclosed truck or roll-off dumpster for transportation to the landfill.

### Dumpsters or trucks shall have doors or tops that can be closed and locked to prevent vandalism or other disturbance of the bagged asbestos debris and wind dispersion of asbestos fibers. During periods in which dumpster doors remain open, Asbestos Abatement Contractor shall maintain one accredited employee at the dumpster continuously while doors are open to prevent unauthorized entry. There will be no exceptions.

### The enclosed cargo area of the container shall be free of debris and lined with 6 mil. polyethylene sheeting or spray-on poly material to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and extend up the sidewalls. Wall sheeting shall be overlapped and taped into place.

### Unbagged material shall not be placed in these containers, nor shall they be used for non-asbestos waste. Bags shall be placed, not thrown, into these containers to avoid splitting.

### Personnel loading asbestos containing waste shall be protected by disposable clothing including head, body and foot protection and at a minimum, half-face piece, air-purifying, dual cartridge/respirators equipped with high efficiency filters.

### Drums shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting, tipping. Large structural components shall be secured to prevent shifting and bags placed on top. Do not throw containers into truck cargo area.

### **Transportation**

### Regulated ACBM’s shall be taken off-site onto a public road only by a registered hazardous waste hauler in a registered hazardous-waste hauling vehicle.

### Owner’s Asbestos Representative shall be notified at least 24 hours in advance of the time of any pick-up of asbestos waste.

### Asbestos-waste in excess of 50 pounds taken onto a public road must be accompanied by a properly completed Hazardous Waste Manifest.

### Hazardous Waste Manifest must be signed by an individual designated by Owner.

### **Documentation**

### On a weekly or per load basis, submit copies of all manifests and disposal site receipts and weigh tags to Owner for Asbestos Related Work. Manifest number is to be recorded on weight tags. Each load requiring a manifest shall be weighed at the weigh station nearest the project.

#### Receipts are to be returned to “The Generator” within 30 days.

## INSPECTIONS AND TESTING - ASBESTOS ABATEMENT

### **General**

### Owner reserves the right to perform visual inspections and to take bulk and air samples inside and outside the work area at any time during the project. Such activities shall be performed by Owner’s Representative. The Contractor has the right to observe and to review the results.

### **Documentation and Notices**

### Owner reserves the right to document any positive or negative findings during visual inspections. Such findings shall be provided in writing if requested by the Asbestos Abatement Contractor.

### Asbestos Abatement Contractor has the right to review such documentation and respond in writing to any point with which Asbestos Abatement Contractor disagrees. The decision of Owner’s Asbestos Representative concerning acceptable levels of cleanliness is final. The Asbestos Abatement Contractor shall abide by such decision and correct all deficient conditions to amend unsatisfactory findings to the acceptance of Owner.

### In case of a written notice of deficiency, Asbestos Abatement Contractor shall sign the notice. The signature shall represent only that Asbestos Abatement Contractor acknowledges receipt of the notice and shall not be construed as agreement with the findings.

### **Air Monitoring - Asbestos Abatement Contractor**

### Asbestos Abatement Contractor shall conduct daily air monitoring of its employees engaged in asbestos related work regardless of initial results.

### Asbestos Abatement Contractor shall submit to Owner, results of air sample analysis within forty-eight (48) hours of completion of shift during which samples were taken.

### **Final Visual Inspections**

### Owner, or Owner’s Asbestos Representatives reserve the right to make visual inspections of the work areas to evaluate progress, compliance with specifications and regulations, appropriate work procedures, and such other matters that may, if improper, create additional risk or liability for Owner.

### Final Visual Inspection

#### Asbestos Abatement Contractor shall have the responsibility to notify Owner’s Asbestos Representative a minimum of twenty-four (24) hours in advance of the readiness for final visual inspection at each containment location.

#### Owner’s Asbestos Representative and Asbestos Abatement Contractor shall make a final visual inspection of each work area. Visual inspection shall be based on Scope of Work, Specification requirements, and generally accepted industry standards for cleanliness.

#### For removal, no residual material which can be removed by hand pressure or moderate abrading shall remain.

### **Air Monitoring - Representative**

### Owner’s Representative may conduct air monitoring inside and outside the work area as determined warranted to represent the interests of Owner.

### Air sampling inside the work area which results in fiber counts greater than 0.1 f/cc (full-face, PAPR respirator in positive mode in use) or 1% of the rated protection limit of other respiratory protection in use at the time of sampling shall be deemed a necessary and sufficient reason to issue a STOP WORK order.

### Air sampling outside the work area which results in fiber counts higher than 0.01 f/cc, or baseline levels shall be deemed a necessary and sufficient reason to issue a STOP WORK order.

### Final Air Clearances will be required for each containment area which includes disturbance of ACM in compliance with AHERA requirements. Negative pressure ventilation units shall remain in operation until Contractor receives notification from Owner’s Representative that final air clearance for each containment area has meet specified clearance criteria.

### Analysis of Final Clearance sampling shall be by TEM – AHERA method

### At the discretion of Owner, PCM method may be utilized for clearance purposes where allowed under AHERA requirements.

### **Final Air Clearance Criteria**

### Owners’ Asbestos Representative shall collect a total of five (5) air samples within each individual containment area in accordance with industry standards and shall submit each sample to an independent, accredited analytical laboratory for analysis. Lab and field blanks will be submitted with each set of clearance samples but may not be analyzed unless the determination of any clearance is disputed.

### Containment areas shall remain off limits to non-abatement personnel and containments shall remain negatively pressurized until such time that results are received and determined to pass or fail the stipulated clearance criteria.

### Any clearance which fails to meet the stipulated clearance criteria shall be rerun after the containment is re-cleaned by the Contractor. The responsibility to pay for all supplemental clearance rounds shall be at the discretion of the Owner and/or the Supervising General Contractor.

### PCM Clearance Criteria: reading of less than 0.01 f/cc for each interior air sample.

### TEM: Clearance will be an average reading of less than 70 structures per square millimeter for each air sample collected as part of any clearance.

### Contractor shall re-clean all Containment areas with results which exceed specified clearance levels shall be re-cleaned and re-tested until clearance criteria is met. Contractor shall be responsible for all costs associated with additional clearance rounds.

END OF SECTION