

Advanced Environmental Consulting, Inc.

16718 Old Hammond Hwy.
Baton Rouge, LA

Asbestos Abatement Project Design

**City of Baker
Blighted Property**

Site:

2845 Groom Road
Baker, LA 70714

April 1, 2025

Glenn L. Johnson

LDEQ Asbestos Project Designer

AD094824

Table of Contents

PART 1: GENERAL

- 1.1 Related Documents
- 1.2 Work Covered by Contract Documents
- 1.3 Compliance and Intent
- 1.4 Scope of Work
- 1.5 Definitions
- 1.6 Submittals
- 1.7 Asbestos Contractor/Supervisor and Workers

PART 2: PRODUCTS

- 2.1 Signs and Labels
- 2.2 Encapsulants
- 2.3 Plastic Sheeting
- 2.4 Local Exhaust System
- 2.5 Hours of Operation for HEPA Filtration Units
- 2.6 Reserve Equipment
- 2.7 Transportation Equipment
- 2.8 Power Requirements
- 2.9 Connections to Water Supply
- 2.10 Scaffolding
- 2.11 Other Tools and Equipment

PART 3: EXECUTION

- 3.1 Initial Area Isolation (Asbestos)
- 3.2 RACM DEMOLITION PROCEDURE – ASBESTOS
- 3.3 Containment Set-Up Procedures – Asbestos
- 3.4 Security
- 3.5 Use of the Site
- 3.6 Personnel Protection
- 3.7 Permissible Exposure Limits (PEL)
- 3.8 Containment And Decontamination Areas/Systems
- 3.9 Asbestos Removal
- 3.10 Air Monitoring – Asbestos
- 3.11 Decontamination – Asbestos
- 3.12 Clearance Inspections – Asbestos
- 3.13 Clearance Criteria – Asbestos

3.14 Asbestos Disposal

3.15 Final Job Log

Attachments:

Certificate of Visual Inspection

Floor Plans and ACM Location

LDEQ Accreditation Certificate

ASBESTOS ABATEMENT WORKPLAN
DIVISION 1

Prepared for: City of Baker
Blighted Property
2845 Groom Road
Baker, LA 70714

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions prepared by Owner.
- B. Abatement time: Not to exceed ten working days.
- C. Asbestos inspection report attached.
- D. REGULATORY AND WORK PRACTICE REFERENCES:
 - 1. Work shall be performed in compliance with current federal and state regulations, including U.S. EPA, OSHA, Louisiana DEQ and any other accepted state-of-the-art industry standards. The most recent edition of relevant regulations, standards, documents, or codes shall be in effect including but not limited to:
 - LAC 33:III Chap. 27, Louisiana Dept. of Environmental Quality- Asbestos
 - LAC 33:III.5151, Chap. 51, Emission Standard for Asbestos
 - 29 CFR 1926.1101, OSHA Asbestos
 - 29 CFR 1910.134, OSHA Respiratory Protection
 - 29 CFR 1910.28, Safety Requirements for Scaffolding
 - 29 CFR 1910.1200, Hazard Communication
 - 29 CFR 1910.20, OSHA Access to Employee Exposure and Medical Records
 - 29 CFR 1926.59, OSHA Hazard Communication for the Construction Industry
 - 15 USC 2641-2656, The Asbestos School Hazard Abatement and Reauthorization Act (ASHARA)
 - 40 CFR 61 Subparts A and M, EPA National Emission Standards for Hazardous Air Pollutants,
 - 40 CFR 736.92(a)(2), EPA Asbestos Model Accreditation Plan (Training of Asbestos Workers),
 - 40 CFR 763 Subpart G, EPA Worker Protection Rule
 - 40 CFR 763, ACM in Schools
 - 49 CFR 171 and 172, Transportation

ASTM E1368-14: Standard Practice for Visual Inspection of Asbestos Abatement
RFCI Recommended Work Practices for Removal of Resilient Floor Covering

2. (October 2011 or latest edition Any conflicts or overlap of these requirements shall be governed by the more stringent regulation or standard.
3. Neither the Owner nor their representative shall be responsible for acts or omissions of the contractor, its subcontractors, or any of its agents or employees performing any of the ACM abatement related tasks.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project consists of the removal and disposal of asbestos containing sheet flooring as identified in the inspection report.
- B. Contract Documents were prepared by the Owner with abatement specifications developed by Advanced Environmental Consulting, Inc.
- C. Abatement work shall be coordinated with the Owner.
- D. Changes in the scope of work or work procedures must be in writing and authorized by the Owner and/or Owner's Representative.

1.3 COMPLIANCE AND INTENT

- A. The contractor is to commence work at the site on the date and time agreed upon by the Owner as specified in the Notice to Proceed. Abatement work is to be scheduled and coordinated with the City of Baker.
 - Site security during the project is the responsibility of the Abatement Contractor.
 - Contractors are encouraged to provide 24/7 site security to prevent vandalism to site and/or theft of contractor or owner property.
 - Owner is not responsible for theft of contractor property during the project.
- B. The abatement workers shall have received current [initial and refresher] EPA-accredited training and be accredited by the State of Louisiana.
- C. Abatement Contractor is to make the Louisiana Department of Environmental Quality (LDEQ) required filings.
- D. Should the LDEQ find the Contractor to have deficiencies during the course of the project, the Contractor is to correct said deficiencies or notice of violations within 24 hours. Should LDEQ issue fines or other penalty, the Contractor shall re-imburse the Owner for any expenses incurred in connection with the issues. This shall include legal fees.

- E. During work the Contractor is to provide air monitoring and worker protective equipment in accordance with the Occupational Safety and Health Administration (OSHA). Where there is conflict, the most stringent requirement shall apply.
- F. Furnish all labor, materials, facilities, supplies, equipment, services, employee training, medical monitoring, permits and agreements necessary to remove and dispose of the identified asbestos containing material (ACM) in accordance with applicable regulations and this specification.
- G. Comply with federal, state, and local regulations pertaining to asbestos, storage; transportation and disposal; employee health and safety; Contractor certifications; asbestos certifications; and all licenses, permits, and training.
- H. Work on the premises shall be confined to designated areas. Materials and equipment shall be stored within areas designated by the Owner. Should additional space be required, the Contractor shall request permission for additional space and shall adequately safeguard occupants from associated health and safety hazards.
- I. Perform all work specified herein with competent persons trained, knowledgeable and qualified in state-of-the-art techniques relating to asbestos abatement, handling, and the subsequent cleaning of contaminated areas. Site safety will be the responsibility of the Contractor.
- J. During removal activities, the Contractor shall protect against contamination of soil, water, plant life, and adjacent building areas, and shall ensure that there is no airborne release of asbestos and dusts. Evidence of settled dust or airborne levels of contaminants above background and/or EPA defined clean air standards, will require the implementation of additional controls and/or remediation at no increase to contract price.
- K. The work of this section shall be performed by an entity that holds a current valid contractor's license appropriate for asbestos abatement in accordance with the requirement of the State of Louisiana. The entity shall also hold proper accreditations by the Louisiana Department of Environmental Quality. Copies of licenses, permits, accreditations, etc. shall be available for view at the job site.
- L. Contractor shall comply the Owner's insurance requirements and shall submit proof of such prior to entering into a contract for said work.
- M. Asbestos removed during the abatement activities shall be disposed of in an approved manner complying with applicable federal, state, and local regulations. Copies of executed waste manifests shall be furnished to the Owner with project closeout documents. Failure to do so will result in non-payment for the project.
- N. ACMs shall be removed using wet methods and allowing no visible emissions. Evidence of the release of asbestos above the background level will necessitate additional controls including but not limited to negative pressure

enclosure or any other requirement as specified at no increase in contract price or change order.

- O. All work shall be performed in full compliance with applicable EPA, OSHA, and DOT regulations, NIOSH recommendations, ASTM standards, all other Federal, State and Local government regulations, and the specifications contained herein.
- P. Work hours for the abatement are 7 am – 7 PM or as determined the Owner.

1.4 SCOPE OF WORK

- A. The Work involves removal, packaging, transport and disposal of identified ACM. This includes the establishment of work area controls and practices in accordance with applicable regulations and industry accepted practices. If the Abatement Contractor identifies additional suspect ACM, he/she shall notify the Consultant immediately upon discovery so testing may per performed. If the material was visually concealed during the pre-bid site walk, then the rate for removal shall be at the contracted unit rate; if no unit rate exists for the material the rate shall be the cost of time and materials plus ten percent. Receipts for cost including labor costs, must be provided to Owner for inclusion on Contractor's invoice. No remobilization fees will be allowed in any change orders.
- B. ASBESTOS-CONTAINING MATERIALS (ACMs)
The following ACMs will be abated under this contract. Estimated quantities are listed for each. The CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING QUANTITIES PRIOR TO BIDDING. Table I below summarizes the ACM affected, the percent and type of asbestos. The scope of work listed earlier in this specification and table 1 below, may not represent all ACM or materials which can be / are expected to be field verified.

Table I: Summary of Abatement

Location	Material	% Asbestos	Estimated Quantity
Bed/Bath	12 inch floor tile/mastic	4 % Chrysotile	300 SF

NOTE: Asbestos results are based on results of bulk sampling conducted by **AEC**.

- C. Contractors are responsible for picking up and orderly containment of non-acm construction debris at the end of every shift.
- D. Pipe insulation in the building has been determined to contain asbestos. Should the Demolition contractor encounter and/or identify insulated pipes in wall and/or ceiling cavities, these materials are considered to be asbestos – containing and must be addressed by the Asbestos Abatement Contractor. Contractor is to notify **AEC** of the newly identified materials so as to have them sampled and appropriate actions taken.

1.1 DEFINITIONS

Abatement - Asbestos: Process of controlling fiber release from acms, including controlled renovation procedures, removal, clean up and disposal.

AHERA: Asbestos Hazard Emergency Response Act (40 CFR Part 763).

Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and uncontaminated areas. Typically consists of two curtained or gasket doorways separated by a distance of at least six feet such that one passes through one doorway into the airlock, allowing the doorway to close off the opening. This airlock must be maintained in uncontaminated condition at all times.

Ambient Air Quality: The quality of air (in terms of airborne fiber content) that is present in a given space.

Amended Water: Water to which a surfactant (wetting agent) shall be used to wet the ACM and reduce the potential for fiber release during the disturbance of ACM.

Area Monitoring: Sampling of airborne asbestos fiber concentrations within the work area and outside the work area. Sampling shall represent airborne concentrations that may reach the breathing zone.

Asbestos Fibers: Refers to asbestos fibers having an aspect ratio of 3:1, and those fibers longer than five (5) micrometers.

Asbestos Permissible Exposure Limit (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. This level represents the 8-hour time-weighted average of 0.1 fibers per cubic centimeter as measured by Phase Contrast Microscopy (PCM).

Asbestos-Containing Material (ACM): Those manufactured products and construction materials including structural and mechanical building materials, as well as packings and gaskets that contain more than one percent (1.0 %) asbestos by weight.

Asbestos: Asbestos includes asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite) cummingtonite-gunerite (amosite), anthophyllite, tremolite, and actinolite. For the purposes of determining worker respiratory protection, both the asbestiform and non-asbestiform of the above minerals, and any chemically treated or altered materials shall be considered as asbestos.

Baseline: Refers to the background levels of asbestos before abatement.

Change Rooms: Refers to the two chambers in the decontamination area used to change into and out of protective clothing.

Certified Industrial Hygienist (CIH): An Industrial Hygienist certified in Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene (ABIH).

Class I Work: Class I asbestos work means activities involving the removal of TSI, spray-on fireproofing and surfacing ACM and PACM.

Class II Work: Class II asbestos work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, cementitious panels (including chalkboards), construction mastics (glue dots), and caulking.

Clean Room: An uncontaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment.

Clearance Level: Clearance level for samples analyzed by Phase Contrast Microscopy (PCM) will be less than 0.005 fibers per cubic centimeter of air and for Transmission

Electron Microscopy (TEM) will be less than 70 structures per square millimeter (<70 s/mm²) average across 5 samples. Samples are collected using aggressive sampling methods and the minimum air volume shall be 1,200 liters.

Competent Person: One who is capable of identifying existing and predictable asbestos hazards and who has the authority to take prompt corrective measures to eliminate them and is accredited by LDEQ.

Critical Barrier: A unit of temporary construction that provides the only separation between asbestos work area and an adjacent potential occupied space. This includes the decontamination unit, perimeter walls, ceilings, penetrations and any temporary critical barriers between the work area and the uncontaminated environment.

LSLBC: Louisiana State Licensing Board for Contractors, <http://www.lslbc.louisiana.gov/>

LDEQ: Louisiana Department of Environmental Quality,

Decontamination Area: Area which is constructed to provide the means for workers to store clothing, equipment and other articles, and to properly remove asbestos contamination upon concluding work activities that result in exposure to these hazardous materials.

DOT: Federal Department of Transportation

Decontamination Unit: Refers to system of airlocks used to decontaminate personnel, waste bags, equipment, etc. when exiting the work area. A decontamination unit shall be set up for each containment area.

Disposal Bag: Minimum six (6) mil thick leak-tight plastic bags used for transporting asbestos waste from a work area to disposal or shipping container. Each disposal bag must have required labels according to 29 CFR 1926.1101, 30 CFR Part 47 (HAZCOM). RACM waste must be additionally labeled according to 49 CFR 171-179 (USDOT), and 40 CFR 61 Subpart M (NESHAP) and LDEQ requirements in LAC 33:III Chapters 27 & 51.

Employee exposure: That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

Encapsulant: A liquid material that can be applied to ACM that controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging) or by penetrating into the material and binding its components together (penetrating encapsulant).

Equipment Room: A contaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment. The equipment room shall be kept clean from asbestos-containing debris at all times.

Friable Asbestos-Containing Material: Material that contains more than 1.0% asbestos by weight, and that can be crumbled, pulverized or reduced to powder by hand pressure when dry.

Glove bag Technique: A method for removing ACM from heating, ventilating, and air conditioning (HVAC) ducts, piping runs, valves, joints, elbows, and other non-planar surfaces. The glove bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. Secondary containment shall be provided for all glove-bag work unless noted otherwise.

HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and

Asbestos Abatement Specs

retaining 99.97% of asbestos fibers greater than 0.3 microns in diameter.

Industrial Hygienist: A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards.

Negative Exposure Assessment: Exposure monitoring that documents with a high degree of certainty that employees on that job will not exceed the TWA and excursion limits in accordance with 29CFR1926.1101.f.2.iii.

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.

Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

NESHAP: National Emission Standard for Hazardous Air Pollutants - EPA Regulation 40 CFR Subpart M, Part 61.

NIOSH: National Institute for Occupational Safety and Health: Sets test standards, analytical methods, and certifies performance of various respirator designs.

NIST: National Institute of Standards and Technology: Administers the NVLAP Program.

NVLAP: National Voluntary Laboratory Accreditation Program: Evaluates and certifies laboratories doing PLM and TEM analysis.

Penetrating Encapsulant: An encapsulant absorbed by the in-situ asbestos matrix without leaving a discrete surface layer.

Permissible Exposure Limits (PELs) - Asbestos: A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. Represents the 8-hour time weighted average of 0.1 total fibers per cubic centimeter and 30 minute excursion limit of 1.0 fiber per cubic centimeter (1 f/cc) as measured by phase contrast microscopy (PCM).

Personal Monitoring: Sampling for asbestos and lead concentrations within the breathing zone of an employee.

Phase Contrast Microscopy (PCM): Phase contrast microscopy (PCM) is a technique using a light microscope equipped to provide enhanced contrast between the fibers and the background. Filters are cleared with a chemical solution and viewed through the microscope at a magnification of approximately 400X. This method does not distinguish between fiber types and only counts those fibers longer than 5 micrometers and wider than approximately 0.25 micrometers. Because of these limitations, fiber counts by PCM typically provide only an index of the total concentration of airborne asbestos in the environment monitored.

Polarized Light Microscopy (PLM): An optical microscopic technique used to identify asbestos content and distinguish between different types of asbestos fibers by their shape and unique optical properties.

Powered Air Purifying Respirator (PAPR): A full face-piece respirator that has the breathing air powered to the wearer after it has been purified through a filter.

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 a

respirator to the wearer.

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 system. This room contains hot and cold or warm running water and soap suitably arranged for complete showering during decontamination. The shower room comprises an air lock between contaminated and clean areas.

Street Clothes: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area

Surfactant: Normal clothes worn to work by employees. These must be free from vulgarity, sexual nature, or reference of illicit drugs or drug paraphernalia. They shall also be free of any innuendos to any of the listed inappropriate items above.

TEM: Transmission Electron Microscopy: Asbestos structure analysis for a specified volume of air. TEM is a technique that focuses an electron beam onto a thin sample. As the beam transmits through certain areas of the sample, an image resulting from varying densities of the sample is projected onto a fluorescent screen. Transmission electron microscopy is the state-of-the-art analytical method for identifying asbestos fibers collected in air samples in non-industrial settings. Transmission electron microscopes equipped with selected area electron diffraction (SAED) capabilities also can provide information on the crystal structure of an individual particle.

1.2 SUBMITTALS

- A. The following items shall be submitted for review by the Owner before official notice to proceed is awarded. The Contractor shall plan on giving the Owner 5-business days to review pre-job submittals once received. Coordinate preparation and processing of additional submittals with performance of construction activities. Transmit each submittal ten (10) business days in advance of performance of related construction activities to avoid delay. NO INVOICE SHALL BE PAID UNTIL ALL SUBMITTALS ARE RECEIVED BY DESIGN TEAM.

REVIEW BY OWNER DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, WHICH MAY EXIST IN THE SUBMITTED DATA. MAKE REVISIONS WHEN REQUIRED AND RESUBMIT FOR REVIEW.

FAILURE TO FOLLOW THIS DESIGN RELIEVES THE ENVIRONMENTAL CONSULTANT, DESIGNER and OWNER OF ALL LEGAL LIABILITY ASSOCIATED WITH THIS PROJECT. THE CONTRACTOR IS STRICTLY LIABLE FOR THEIR OWN NEGLIGENCE, ACTS, AND OMISSIONS.

- B. Detailed work plan per 29 CFR 1926.1101 Appendix F that includes but is not limited to:

- Detailed work plan with procedures for removal of each type of asbestos containing material as noted in Table 1.
- Job hazard analysis sheet to be completed at the beginning

of each work shift.

- Abatement Contractor's Certificate of Insurance (COI), naming Owner, Designer, and any agents of these parties' behalf as additionally insured for the duration of the project.
 - Any Cost associated with this requirement shall not be passed to the owner.
- Water and electrical power supply ARE NOT AVAILABLE at the site
- Wastewater discharge from showers and inside the work area construction Location and number of containments, HEPA filtered negative air machines, and decontamination units.
- Include a life safety plan with closest hospital and what to do if an employee is injured and needs first aid, medical care, emergency medical care, or paramedic treatment prior to medical care. All employees should know what to do before an emergency takes place.
 - For all emergencies call 9-1-1 and Owner/Consultant.
- Variances received from regulatory agencies if applicable.
- Note that Environmental Consultant may require changes to work plan/ work practices at any time without increase of contract price.

C. Provide a contingency plan prior to project initiation. The contingency plan shall include, at a minimum:

- Personal protective equipment list as required on the job and how the contractor will ensure this requirement is met by all its employees;
 - Personal Protective Equipment shall include at all times on site: steel toe & cut resistant boots, hard hats, high visibility vests, safety eyeglasses, and cut resistant work gloves.
 - In asbestos abatement areas respirators and disposable outer suits are also required at all time. Overhead surfacing material removal shall require full face, powered air purifying respiratory protection in addition to other respiratory protection section later in this specification.
- Site safety and health hazards, including maintenance of Safety Data Sheets on site;
- Asbestos handling procedures and fiber release incidents;
- Control of water leakage or discharge within and/or from the work area;
- Emergencies including fire, accident, power failure, pressure differential system failure, supplied air system failure, or any other event that may require modification or abridgement of decontamination or Work Area isolation procedures;
- Contractor's internal administrative and inspection procedures;
- Protocol for responding to complaints or questions from interested parties;

- Protocol for fueling equipment including plans for set up of secondary containment, more advanced spill prevention, and spill clean up.
 - Notifications including other entities at the jobsite of the nature of abated materials and requirements set forth in these specifications and applicable regulations.
 - 24-Hour emergency telephone numbers for Company Officers with authority to respond to emergencies.
 - Plan to address job site and environmental concerns in case of natural disaster, fire, or other emergencies. This shall also include a plan to secure the site in the event of impending Hurricane or other weather event which may occur with advanced warning.
 - Contractor shall comply with the Contingency Plan as if it is included in these specifications. This plan must also be approved by Owner/Environmental Consultant.
- D. Competent Person: Demonstrate education and specialized training with successful completion of examination of an EPA approved asbestos training provider.
- E. Workers: Demonstrate education and specialized training with successful completion of an EPA/ LDEQ approved accredited training courses. (LDEQ accreditation)
- F. Submit current training, certificates that the employee has received proper training in the handling of asbestos.
- G. Proof of Respirator Fit Testing: Provide proof of respirator fit testing, document testing on the type of respiratory protective equipment used for this project. A person who is trained and qualified to perform fit tests must sign fit testing records. Quantitative fit tests done by an occupational health physician is the preferred fit test method.
- H. Foreman Training: Submit evidence that the foreman to be used on the job fulfills the qualifications detailed in this specification and has experience in similar jobs.
- I. Medical Examinations: Submit evidence signed by a physician that each employee used on the job has received an appropriate medical examination as detailed in 29 CFR 1926.1101, 29 CFR 1926.62 and 29 CFR 1910.134.
- J. Certificates of Compliance: Submit manufacturer's certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2.
- K. Submit written evidence that the landfill(s) for disposal are approved for asbestos disposal by the USEPA and state or local regulatory agency(s). Submit non-hazardous waste manifests prepared, signed and dated by an agent of the landfill. The manifest must certify the amount of ACMs delivered to the landfill.

- L. Licenses: Submit copies of state and local licenses (Louisiana State Licensing Board for Contractors), evidence of LDEQ accreditations and permits necessary to carry out the work of this contract.
- M. Safety Data Sheets/Specification Sheets: The Contractor shall submit Material Safety Data and Specification Sheets for all chemicals, encapsulants, etc. to be used for this project.
- N. Industrial trucks / Industrial lifts: Contractor shall submit proof that all employees who will operate industrial trucks such as forklifts, boom lifts, skid steers, "bobcats", excavators, etc. are trained and have proper certification in the safe use of this equipment. Additionally, employees must be trained and certified in the proper use of all industrial lifts such as man lifts, scissor lifts, etc. Fall protection must be worn when in lifts as required by OSHA standards.
- O. Fueling of equipment: All liquid fuel must be stored in a secondary containment at all times when on the project site. All fuel powered equipment must be inside a secondary containment when being fueled. Spills should be kept to a minimum, however, Contractor must provide spill kit and written spill control plan in the event of an accident or failure.

PROVIDE A COPY OF ALL LDEQ ASBESTOS DISPOSAL VERIFICATION FORM (ADVDF) TO THE ENVIRONMENTAL CONSULTANT.

1.3 ASBESTOS CONTRACTOR/SUPERVISOR AND WORKERS

- A. All asbestos abatement work shall be conducted using good work practices that prevent the release of fibers or dust outside the work area. Contractor to make the necessary corrections. Generally, airborne fiber concentrations measured by PCM inside the containment area exceeding 0.10 fibers/cc will be viewed as an indication of poor work practices.
- B. The Contractor shall employ orderly and competent workers, skilled in the performance of the work required under this Contract. Workers shall maintain a professional demeanor and appear rested and physically able to complete a day's work. Workers are to dress appropriately when outside the building and in view of the public (e.g. street clothing unless involved in asbestos materials abatement activities). Street clothes shall not have profanity, drug related, racial, sexual, or other elicit content on them.
- C. The Owner or their representative may issue a stop work order at any time if concerns arise regarding employee or occupant safety, the integrity of the work area, security or other related concerns. If the Owner or their representative issues a verbal or written "stop work order" due to personnel, environmental or property safety risks, or due to violations of rules or regulations, the abatement contractor shall immediately stop all work while maintaining temporary enclosures and pressure differential and *shall have no right to project delay claims*. The abatement contractor shall not recommence work until authorized to do so in writing by the Owner or their representative. The Owner may perform baseline air sampling in selected work areas of the buildings before the start of abatement work to establish

the background total asbestos fiber concentrations.

1. Verbal stop work orders shall be followed up in writing within 24 hours.
 2. Even during a stop work order, negative pressure containments must be maintained in good condition and as active containments. A contractor crew of at least 3 employees will be present during the dayshift during work stoppage to monitor and repair containment as necessary until the order to begin work again is given.
- D. The background total fiber concentration (or a total fiber concentration greater than 0.005 f/cc) shall not be exceeded outside the work area during abatement work. If the total fiber concentration exceeds either background or 0.005 f/cc, the Owner is authorized to act in accordance with the above provisions to stop work. Abatement Contractor shall perform any and all necessary corrective actions to reduce the fiber concentrations.
- E. The Owner may have air sampling performed inside and outside the work area during all phases of the work. The Contractor shall cooperate fully with the Consultant and ensure the cooperation of his workers during collection of air samples and work area inspections. Failure to cooperate will result in dismissal from the work site without project delay claims.
- F. When visual inspections or air monitoring are specified, the Contractor shall notify the Owner in writing 24 hours in advance of the day and time when the Contractor will be ready for such inspections or monitoring. Such requests shall be initiated by the Contractor's Competent Person or Foreman indicating that the zone has been previously inspected and is ready for inspection/testing.
- G. The Owner may employ an Environmental Consultant in advising the Owner regarding environmental health matters does not relieve the Contractor's obligation to comply with all applicable health and safety regulations promulgated by the federal, state, or local governments.
- H. The contractor shall send written notification as required to federal, state and local agencies in a reasonable time frame from contract award. The contractor is also responsible for post-work notifications as may be required for regulatory agencies, especially DEQ.

PART 2 - PRODUCTS

2.1 SIGNS AND LABELS:

- A. Provide labeling in accordance with U.S. EPA and LDEQ requirements. Provide the required signs, labels, warnings, or posted instructions for containers used to transport asbestos to the landfill.
- B. Location of Caution Signs and Labels: Provide bilingual caution signs at all approaches to work areas in languages used by the Contractor's employees.

Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos-containing materials, scrap, waste, debris, and other products.

- C. Warning Label Format: Provide asbestos warning labels and signs that comply with 29 CFR 1926.101, 29 CFR 1926.62, LAC 33:III.2727 and LAC 33:III.5151.

2.2 ENCAPSULANTS:

- A. Encapsulates shall be U.L. Listed, in full-scale E-119 fire test.

2.3 PLASTIC SHEETING:

- A. Use polyethylene sheeting with a thickness of 6-mil minimum (two layers of 4-mil acceptable for walls) that conforms to NFPA #701 and be tested in accordance with ASTM E-84.
- B. Spray adhesive for sealing polyethylene to polyethylene shall contain no methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds. Provide spray adhesive in aerosol cans that are specifically formulated to stick tenaciously to sheet polyethylene.

2.4 LOCAL EXHAUST SYSTEM:

- A. Full negative pressure containment is required, and sufficient High Efficiency Particulate Air (HEPA) ventilation units shall be used to initially achieve a negative pressure in each contained work area at 0.020 inches of water column and to maintain the negative pressure in each contained work area at 0.020 inches of water column while working. Once the required amount of pressure has been reached, the containment has been effectively contained and the only air release outside is through the HEPA equipped pressure differential units. These exhaust systems shall be in accordance with ANSI and the HEPA unit shall bear a UL 586 label.
- B. The ventilation system shall remain in operation 24 hours a day, until clearance of the containment is achieved. HEPA-filtered air necessary to maintain pressure differential shall be vented to non-contaminated areas outside the buildings. All HEPA units shall be operated in accordance with the manufacturer's instructions and fitted as follows:
 - A two stage pre-filter as follows: 100 micron low efficiency filter and a second stage medium pre-filter for particle sizes down to 5 microns;
 - Lapse time meter showing accumulated hours of operation;
 - Electrical interlock preventing the operation of the unit without a HEPA filter;
 - Audible alarm and automatic shutdown system in the event of filter rupture

or blockage of the discharge;

Warning lights which indicate the status of the HEPA unit;

HEPA filters used in negative air machines shall be replaced after 600 hours of continuous use (at a minimum).

- C. Positioning the HEPA Units: HEPA Units should be located away from the most likely air entry routes to establish the longest possible air flow path across workers breathing zones. When there is air movement, the fibers tend to dilute in the fresh air and be pulled into the pressure differential units to be filtered before exhausting into the outside air.
- D. Additional HEPA units may be located in the containment to circulate air within the area and filter fibers out of the air.

2.5 HOURS OF OPERATION FOR HEPA FILTRATION UNITS:

- A. The ventilation system shall remain in operation 24 hours a day until the work area has passed the specified clearance criteria. HEPA filtered air necessary to maintain pressure differential shall be vented to non-contaminated areas outside the buildings. Other HEPA units shall operate within the enclosure to circulate air and control fiber counts. All containments must achieve a minimum of four (4) air exchanges per hour.
- B. Isolate work area, and continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of -0.02 inches of water column.

2.6 RESERVE EQUIPMENT:

- A. Contractor shall erect barricades and signs required by Federal and State regulations.
- B. Contractor shall supply equipment needed for worker protection (respirators, safety equipment, etc)
- C. Provide authorized visitors, Owner, Consultants or other contractors requiring access to the work area with suitable protective clothing, headgear, eye protection, as described in this specification, whenever the visitor must enter the work area. The Contractor shall have available and maintain at all times a minimum of three (3) sets of suits and other suitable protective equipment for this purpose. All protective equipment shall be new and for the exclusive use of visitors. Visitors are only permitted with proper LDEQ accreditation, medical clearance, fit test certification, and respirator.
- D. Contractor shall maintain on site at all times a minimum of two extra negative air machines for use in case of failure.

2.7 TRANSPORTATION EQUIPMENT:

- A. Transportation equipment, as required, shall be lockable and suitable for loading, temporary storage, transit and unloading of contaminated waste without exposure to persons or property. Dumpster shall be covered at the end of each work day and kept behind secure fencing of at least 6 feet in height to prevent unauthorized dumping at the site. Any vehicle used to transport asbestos waste shall be properly registered with applicable controlling agencies.

2.8 POWER REQUIREMENTS

General Contractor shall provide an appropriate power source for abatement and monitoring activities. GFCI's shall be located outside the work area so that circuits are protected prior to entry into the work area.

2.9 CONNECTIONS TO WATER SUPPLY:

- A. Water is provided by the Owner during the course of abatement. Contractor shall assure that all connections to the site's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered.

2.10 SCAFFOLDING:

- A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the Work of this Contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions. A competent person shall inspect the scaffolding prior to use for EACH SHIFT AND PROVIDE A "GREEN" TAG FOR ALL SCAFFOLDS USED ON SITE.
- B. Equip rungs of all ladders, etc. with an abrasive non-slip surface.
- C. Provide a nonskid surface on all scaffold surfaces subject to foot traffic. For all permanent scaffolding, all employees must utilize fall protection one hundred (100) percent of the time. Additionally, all tools used must remain tied to the user 100 percent of the time.

2.11 OTHER TOOLS AND EQUIPMENT:

- A. The Contractor shall provide other suitable tools for the stripping, removal and disposal activities. Tools shall include: hand-held scrapers, plastic brushes, sponges, rounded edge shovels, brooms, polyethylene, carts, etc. All tools shall be inspected for contamination prior to use. All other materials not specifically described, but required shall be provided by the Contractor subject to the approval of the Environmental Consultant.
- B. Prohibited Equipment: The following equipment is prohibited from use on this project unless accepted in writing by the Consultant:

High or low pressure water blasting.

Gasoline, propane, diesel or other fuel powered equipment inside the building, unless previously approved in writing by the Owner/Consultant.

Wire bristle brushes

Electrically powered hand tools such as grinding wheels, saws, etc.

Flammable solvents with a flash point below 140 degrees F or materials containing ethylene glycol ether, methylene chloride, ethyl chloroform (1,1,1-trichloroethane), or other hazardous substances.

Polyurethane spray foam for application in fire-rated assemblies.

PART 3 - EXECUTION

3.1 INITIAL AREA ISOLATION (ASBESTOS)

- A. Shut down and disconnect and lock out all electrical power, gas [fuel gas and other if present], sewage, water, phone lines, fire life safety lines and sprinkler systems to the work area so that there is no possibility of reactivation and electrical shock. Electrical outlets / unmarked conduit / unmarked or marked is considered to be "live" unless locked out, tagged out, and verified to be inactive by written documentation with signature required. Contractor shall be responsible for submitting proof of its own Lock Out / Tag Out Program (LOTO).
- B. Provide connections for temporary utilities in the work area needed throughout abatement. Temporary electrical power shall be according to OSHA and the National Electrical Code for Wet Environments.
- C. Generally, water and electricity will be made available by the Owner for construction use. Any temporary electrical connections shall be the responsibility of the contractor and performed by a licensed electrician. Temporary electrical connections shall be pre-approved by the Owner.
- D. Establish designated limits for the hazardous materials work area with continuous barriers. Use barrier tape (3-inch) with a pre-printed asbestos warning throughout exterior asbestos abatement activities. Provide signs around the perimeter of all works areas according to EPA, OSHA.
- E. Contractor shall conform to the Owner's lockout requirements and secure the work area at all times. Area entrances and exits shall be secured by the Contractor throughout the abatement phase. Unauthorized visitors are strictly prohibited. Only the Contractor, Environmental Consultant, and Owner's representatives are permitted at the job site. Contractor shall ensure that all doors, gates, windows, and potential entrances to the work areas and the designated waste location areas are secured and locked at the end of each workday. Site security is the responsibility of the contractor for the duration of the asbestos abatement activities. Should the property have appropriate fencing, the Contractor may use it to meet site security and LDEQ securing requirements. If the site does not have appropriate fencing, Contractor must provide temporary fencing as part of Contract price.

- F. The Owner's Consultant may inspect containment setups before abatement is undertaken. If a containment area is breached the Contractor shall take immediate action to control the breach and clean the area to the satisfaction of the Owner or their Environmental Consultant. Clearance for any contaminated areas will be determined by the Environmental Consultant and may include air sampling. The Contractor shall be responsible for costs associated with the clean-up and testing (including costs associated with the Environmental Consultant) resulting from containment breaches.
- G. The Contractor shall be responsible for identifying HVAC components (if applicable) that lead into or out of the work areas. Components shall be shut down, locked out, disconnected and sealed airtight for the duration of the abatement work. All openings shall be sealed with two (2) layers of 6 mil polyethylene secured with duct tape, as applicable.

3.2 CONTAINMENT SET-UP PROCEDURES - ASBESTOS

- A. Work shall be conducted within a regulated area as required by OSHA. Contractor shall seal operable windows and air intakes within 50 feet of the outside of work area with two layers of 6-mil polyethylene sealed with tape. Contractor shall construct a full negative pressure containment for the removal of friable ACMs or non-regulated materials that may be rendered regulated during abatement. Cover walls and floors, as appropriate, with 4-mil and/or 6-mil poly. The floors and walls shall be covered with a minimum of two layers of poly.
- B. Items not being removed from the work area shall be wet-wiped and/or HEPA vacuumed, and then sealed with two layers of 6 mil polyethylene and duct tape.
- C. The Contractor shall provide easily accessible windows from the clean space into each abatement area / negative pressure enclosure for observation of work underway in containment without requiring work area entry. Windows must be a minimum of 12" x 12", clear-see-through plastic with no scratches, tape or glue marks.
- D. The work area(s) shall be placed under negative pressure as outlined in this specification throughout the abatement work period. The system shall be required to produce a negative pressure of 0.02 inches of water column within the enclosure. Negative air exhaust will not be vented into the building(s). The negative pressure system shall be operated in accordance with Appendix J, pages J-1 through J-8, of the EPA Guidance Manual No EPA 560/85-024, entitled "Recommended Specifications and Operating Procedures for the Use of Negative Pressure Systems for Asbestos Abatement".
- E. Approved fire extinguishers (Class ABC, multi-purpose, dry chemical type, rated: 4A; 60BC) shall be readily available to workers (maximum travel distance of 50 feet) inside and adjacent to work area(s). Personnel and emergency exits shall be clearly indicated on the inside of the containment area. A three-chambered decontamination unit shall be required during the

abatement work conducted in full containment. The unit shall be located immediately outside the contained area. A pre-fabricated unit is acceptable. Chambers shall be arranged as follows:

1. Clean/change room shall be the first chamber entered from outside the work area. This area shall have adequate locker storage to securely house employee belongings in individual locking cabinets.
 2. A shower shall be located between the clean/change room and the dirty/change room. Contractor must provide soap and clean towels for workers. Hot water must be provided and shall not exceed 120 degrees Fahrenheit. Proper facilities for both male and female workers must be provided.
 3. A dirty/equipment room shall be the last chamber before entering the work area. There must be appropriate facilities for male and female showers and changing areas.
- F. Worker decontamination unit walls shall be a minimum of two layers of 6-mil poly and floors shall be constructed with a minimum of three layers of fire retardant poly. All entry and exit doorways shall consist of at least two sheets of overlapping, fire resistant poly. At no time shall the flapped doors be taped open in order to expedite material or personnel load-out.
- G. Hot Water Heater: Contractor shall provide a UL rated electric hot water heater for the decontamination unit shower. Wiring of the hot water heater will be in compliance with all applicable codes of the National Fire Protection Association National Electric Code (NEC). If connected to electrical power other than by standard outlet / GFCI plug, wiring shall be completed by a licensed electrician and proof of licensure is required.
- H. Water from the shower and bag wash area shall be filtered to the technically feasible limit but not more than five (5) microns before disposal. In addition, the Contractor shall comply with all current local, state and federal codes relating to wastewater release.

3.3 USE OF THE SITE

- A. Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated. Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. The Owner may occupy the site and existing building during the construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate owner usage. Perform the Work so as not to interfere with the Owner's operations. For building sections that will continue to be occupied and thus retain HVAC service, coordinate isolation of rooms

served by HVAC systems with and as directed by the Owner.

- C. The contractor shall keep the premises and building free from accumulations of waste materials or rubbish caused by the contractor during completion of their scope of work, contractor's employees or employees of the subcontractor. At the completion of the work, **THE CONTRACTOR SHALL REMOVE ALL RUBBISH, TOOLS, SCAFFOLDING, AND SURPLUS MATERIALS FROM THE WORK SITE. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL WALLS, FLOORS, ROOFS, STAGING, STORAGE AREAS, ETC. AFFECTED BY ITS WORK. FAILURE TO DO SO WILL RESULT IN SUBSTANTIAL COMPLETION BEING DELAYED AND PUT THE CONTRACTOR AT RISK OF HAVING LIQUIDATED DAMAGES APPLIED.**
- D. The contractor shall not allow any employee or other representative to utilize any form of the following: tobacco products, vaping products, "hemp" products, "CBD" products, marijuana products, alcohol, or other illegal drugs while on school premises.
- E. No job sign is to be allowed on this project.

3.4 PERSONNEL PROTECTION

- A. Informed Workers: All workers shall be informed of the hazards of asbestos and any other hazardous materials exposure. Workers shall also be instructed in the use and fitting of respirators, protective clothing, decontamination procedures, and all other aspects associated with abatement work in accordance with OSHA standards.
- B. Provide and require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee potentially exposed to airborne concentrations of asbestos that exceed the TWA and/or excursion limit prescribed by 29 CFR 1926.1101 or for which a required negative exposure assessment is not produced, and for any employee performing Class I operations which involve the removal of TSI or surfacing ACM or PACM.
- C. Personal Hygiene Practices: The Contractor shall enforce and follow good personal hygiene practices during the abatement of hazardous materials. These practices will include but not be limited to the following: No eating, drinking, smoking or applying cosmetics in the work area. The Contractor shall provide a clean space, separated from the work area, for these activities.
- D. If air monitoring data in areas adjacent to the work areas shows exposure to airborne asbestos exceeding OSHA criteria, that area will become regulated and workers must wear protective clothing and approved respirators and must have a shower facility provided to them. The Contractor shall be responsible for abatement of this contamination at no additional cost to the owner.
- E. Respirators: Establish a respirator program as required by OSHA. Respirator selection shall meet the requirements of 29 CFR 1926.1101(h). Respirators selected must be approved by the Competent Person. Submit program for

review a minimum of five (5) working days prior to the commencement of abatement activities.

- F. Respirators and Protective Equipment for Handling Asbestos: 29 CFR 1926.1101(h)(3)(iv), requires employers to provide employees with the following respiratory protection for each Class of asbestos work:

1. Class I Asbestos Work
 - a. Full face-piece, supplied-air respirator operated in the pressure-demand mode and equipped with either HEPA egress cartridges or an auxiliary positive-pressure, self-contained breathing apparatus (SCBA) whenever the employees are in a regulated area performing Class I asbestos.
 - b. A full face-piece supplied-air respirator operated in the pressure-demand mode and equipped with an auxiliary positive-pressure SCBA whenever the employees are in a regulated area performing Class I asbestos work for which a negative exposure assessment is not available and the exposure assessment indicates that the exposure level will be above 1 f/cc as an 8-hour TWA.
 - c. If a negative exposure assessment is available respiratory protection may be: A tight-fitting powered air-purifying full face-piece respirator (PAPR)
2. Full-face piece respiratory protection will also be required anytime overhead abatement, surfacing material abatement, or the Environmental Consultant and/or Contractor believe it is warranted to provide adequate eye protection.
3. Class II and all other asbestos work for which no negative exposure assessment is available: Air-purifying half mask respirator (or better APF selection above).
4. Filtering facepiece respirators shall be equipped with P100 filters that shall be changed as needed but at least every shift. During mastic removal, filtering facepieces respirators shall be equipped with P100 filters stacked with organic vapor cartridges. These stacked filters shall be changed at each break, or when breakthrough occurs, whichever comes first.

- G. Protective Clothing: Provide potentially exposed personnel with fire retardant disposable protective whole body clothing, head coverings, gloves, and foot coverings. Provide appropriate gloves to protect workers hands from exposure to hazardous materials. Make sleeves secure at the wrists and make foot coverings secure at the ankles with tape. Ensure that all personnel entering and leaving the work area follow this procedure. Suits shall be of adequate size to accommodate the largest employee. Foot covers may be part of the coveralls. Non-disposable footwear shall be left in the work area until it is decontaminated or disposed of at the completion of the job. Protective clothing will be worn inside the work area after the area passes pre-abatement inspection and shall remain in use until the area passes final

clearance inspection.

- H. Disposable coveralls, head covers, and foot wear covers shall be provided by the Contractor for the Owner, Designer, Project Administrator, and other authorized representatives who may inspect the job site.
- I. Gloves: Provide cut-resistant gloves to personnel removing or handling asbestos. Contaminated gloves shall be disposed with like waste streams.
- J. Shower Requirements: Contractor shall assure that all certified employees and visitors use protective equipment and the shower or wash down facility following each entry into the containment area after the start of the hazardous materials abatement. Separate shower facilities/dressing facilities must be provided for each sex of employee on the job. Alternatively, a policy must in place for one sex to have use of shower facilities/dressing facilities at one time.

3.5 PERMISSIBLE EXPOSURE LIMITS (PEL)

- A. Permissible Exposure Limits (PEL): Ensure that no worker is exposed to an airborne concentration of asbestos in excess of the Time-Weighted Average (TWA) limit, and Excursion Limit (EL) set forth below.
Time Weighted Average (TWA) limit – Concentration of airborne asbestos fibers to which any worker may be exposed as an eight (8) hour time- weighted average shall not exceed 0.1 fibers per cubic centimeter
Excursion Limit (EL) – Concentration of airborne asbestos fibers to which any worker may be exposed as averaged over a sampling period of thirty (30) minutes shall not exceed 1.0 fibers per cubic centimeter.
- B. Air monitoring required by OSHA is the Contractor responsibility and is not covered in this section. Proof of OSHA compliance air monitoring is required for Contractor to receive final invoice payment.

3.6 CONTAINMENT AND DECONTAMINATION AREAS/SYSTEMS

- A. Prior to each work shift and continuously throughout the project, each containment and decontamination enclosure shall be inspected and repaired as needed.
- B. Ambient asbestos fiber levels outside each work area shall not exceed 0.01f/cc (PCM) or 70 s/mm² (TEM). If the asbestos fiber concentrations outside each work area should exceed those levels shown above, then abatement must stop and operations be reviewed and modified until the fiber count can be reduced to within the acceptable limits.
- C. Each full containment area shall provide the decontamination facilities described below.
- D. An Equipment Room with storage for contaminated clothing and equipment shall be required. Workers and visitors shall discard disposable protective clothing, except the respirator, as they prepare to enter the shower room.

- E. An Airlock system permitting ingress and egress without permitting air movement shall be required. It shall consist of two (2)-curtained doorways at least eight (8) feet apart. Each curtained doorway shall be constructed by placing three (3)-overlapping sheets of plastic over a framed doorway, securing each along the top of the doorway. The first and third sheet shall be secured on one side of the doorway and the middle sheet shall be secured on the other side of the doorway.
- F. Showering facilities with hot and cold water shall be required in a shower room, arranged to service workers and visitors as they exit the contaminated area. The shower shall have hot and cold water supplied to it. Hot water shall not exceed 120 degrees Fahrenheit. The shower shall have an overhead hot and cold mixing showerhead and measure a minimum of 4' x 6' x 7' high. Provisions to prevent any contaminated run-off from the shower room shall be installed. The shower floor shall be elevated approximately 4" above the shower pan, with grooves for proper drainage into the pan. Water shall be filtered through 1) a 20-micron filter and 2) a 5-micron filter for proper filtration of contaminated water. Provisions to prevent any contaminated run-off from the shower room shall be installed, including sheet rubber splashguards on both clean room and equipment room sides of the shower to minimize water splashing into adjacent decontamination areas. Soap and shampoo shall be provided. Shower room facilities and size shall be adequate to allow decontamination and thorough washing of all workers and visitors within the 15 minute escape time allowed under air compressor failure. Refer to Appendix II for illustration of shower design.
- G. Bags of contaminated material shall be washed in the personnel decontamination facility after they have been pre-washed in the work area. Provisions shall be made to prevent any contaminated run-off from the decontamination area.
- H. Bagged material shall be packed and sealed in plastic-lined drums or doubled poly bags. Contaminated material shall be placed in drums if the hazardous material storage area is contiguous to the containment area decontamination exit; double bagging shall occur if the hazardous material storage area is contiguous to the decontamination exit. Bagged material shall be rinsed off inside the containment area, removing gross contamination, before being carried into the decontamination unit where it shall be bagged a second time. All work shall discontinue in the containment area if visible debris is detected in the double-bagging decontamination area. Work shall not resume until the visible debris is removed from the entire bag decontamination area and air samples indicate that fiber concentrations of less than 0.010 f/cc have been re-established.
- I. Transfer of bagged material through the decontamination area shall be performed by a minimum of three (3) workers in the following manner:
1. Bagged material shall be pre-rinsed in the containment area and carried into the decontamination area where a second rinse shall be performed.
 2. The worker rinsing bagged material in the decontamination area shall take great care to ensure that all rinse water is contained for filtration.

3. Twice-rinsed bags shall be carried into the clean airlock, placed in a second bag, HEPA vacuumed externally and sealed with duct tape.
- J. Double-bagged waste shall be stored in the hazardous storage facility outside the clean room airlock. If drums are utilized, they shall be sealed when full and stored in the hazardous storage facility. The hazardous storage facility shall remain locked at all times except when bags are being transported to or from the hazardous storage facility.
- K. HEPA ventilation shall be required in the entire decontamination system so that air shall flow from the outside towards the workspace.

3.7 ASBESTOS REMOVAL

- A. The Contractor shall abate ACMs identified in this specification.
- B. The Contractor shall continuously apply wetting agent throughout the removal process. The wetting agent shall be applied with a low-pressure fine spray to minimize fiber releases. The materials shall be thoroughly saturated so that there is no detectable fiber release. Should material create visible emissions, the Contractor is not using enough wetting agent and all work must stop while the issue is corrected. All ACM shall be immediately packaged in leak-tight containers following removal.
- C. Minimize removal activities of ACMs that generate airborne particulate. To the extent feasible, score or cut-out ACMs in sections, wetting along the scoring line continually, and misting the air with an airless sprayer to knock down suspended particulate.
- D. Perimeter air sample results shall not exceed 0.01 f/cc (PCM). If airborne fiber concentrations should exceed the level shown above, then abatement must stop, and operations be reviewed and modified until the fiber levels can be reduced to within acceptable limits. Should perimeter PCM samples show levels at or exceeding 0.01 f/cc, the Environmental Consultant, may chose to have the samples analyzed by NIOSH 7402 method. This additional analysis will be at the Contractor's expense via a mandatory credit to the project invoices.
- E. The Contractor shall transport asbestos-containing waste bags to the waste debris box at designated hours approved by the Owner. RACM shall be packaged in a minimum of two (2) 6-mil polyethylene bags. Bags shall be properly labeled for RACM disposal including site-specific generator labels. Non-friable waste shall be packaged in a leak-tight container while stored on-site.
- F. Asbestos-containing debris and contaminated water shall be cleaned from the work area at the end of each work shift. The Contractor shall clean the work area using wet methods and HEPA vacuum equipment.

3.8 AIR MONITORING - ASBESTOS

- A. The Contractor will provide area monitoring as described in this specification. If sample results indicate conditions have exceeded the baseline, all work shall cease. Work shall not recommence until the condition(s) causing the increase have been corrected. Monitoring shall continue both inside the work area and its contiguous environment to ensure full compliance with specifications and applicable regulations. Air samples shall be collected inside the containment, outside the containment but inside the building, the HEPA unit exhaust, immediately outside the entrance to the decontamination unit, and outside the bag-out facility. Air contamination levels shall be maintained outside the containment areas at or below 0.01 f/cc. Detection of fiber counts above 0.01 f/cc outside a containment area shall result in immediate cessation of abatement activities and decontamination of areas where elevated fiber counts have occurred. Work inside the containment area shall not resume until the contamination source has been detected and corrected and ambient air levels have been re-established outside the containment area at 0.01 f/cc or less.

The Asbestos Consultant's Air Monitoring Technician shall collect background PCM air samples documenting ambient conditions in the abatement areas before any work begins. A minimum of three (3) background air samples, with a minimum sample volume of 1,200 liters, shall be collected on each building of the facility which work will be conducted.

- B. PCM air sample analysis will be performed using NIOSH Method 7400.
- C. The Owner or their Environmental Consultant shall perform all final clearance inspections.
- D. The Contractor shall be responsible for personal air sampling. Personal breathing zone air sampling shall be in accordance with OSHA asbestos standards. Personal sampling shall be conducted on 25% of the workers for each work task with a minimum of two samples per work shift. One thirty - minute excursion sample shall be collected for every four hours worked. The excursion samples shall be collected at the height of the abatement activities for that shift. Contractor shall include these results in the project's closeout documentation.

3.9 DECONTAMINATION - ASBESTOS

- A. Asbestos Decontamination: No accumulation of debris or standing water will be permitted following the initial decontamination.

3.10 CLEARANCE INSPECTIONS - ASBESTOS

- A. Initial Visual Inspection: Contractor shall notify the Owner/Environmental Consultant when the abatement/removal process in each containment area is complete. Evidence of remaining asbestos or dust will require additional clean up by the Contractor. Contractor shall be responsible for re-cleaning areas found to be deficient.
- B. If the Owner/Consultant determines that the work area is sufficiently clean, the Contractor may proceed. If the Owner/Consultant determines that certain

Asbestos Abatement Specs

areas require additional cleaning, the Contractor shall re-clean the work area and request a second inspection of the re-cleaned area. All costs incurred by the Owner/Consultant for inspections required after the second inspection will be charged to the Contractor.

- C. Following the visual inspection, the Contractor shall provide a coating of non-diluted white encapsulant in the work area. The Contractor shall allow the encapsulant to dry for the period specified by the manufacturer.

3.11 CLEARANCE CRITERIA - ASBESTOS

- A. After removal of the poly, excluding critical barriers, the Owner or their Consultant shall be notified for inspection. The Owner and/or their Consultant shall visually inspect the workspace for any visible asbestos dust or contamination and to determine that no debris has accumulated behind the poly containment barriers. If evidence of accumulated debris or failed poly has occurred, the area shall be cleaned. If the visual inspection does not reveal any dust or other signs of contamination.
- B. After removal of the remaining barriers, the Environmental Consultant may conduct a final inspection of each work area. Any dust or debris found shall be cleaned by the Contractor and any repairs to existing conditions shall be made at no additional cost to the Environmental Consultant. When the area is clean, the Environmental Consultant or Owner shall provide the Contractor with a written notice of acceptance.
- C. The work area shall be considered clean when there is no visible residue present on work area surfaces.

3.12 ASBESTOS DISPOSAL

- A. Load-Out Procedures:

Ensure that polyethylene bags are sealed air-tight. Bags shall be wet cleaned prior to removing them from the equipment decontamination unit.

Ensure disposal containers are properly labeled according to 49 CFR 171-179 (USDOT), 40 CFR 61 Subpart M (NESHAP), LAC 33:III.5151 and any additional local and state regulations as required by this specification.
- B. Asbestos Disposal Procedures:
 - 1. It is the responsibility of the Contractor to determine current waste handling, labeling, and transportation and disposal regulations for the work site and for each waste disposal landfill. The Contractor must comply fully with these regulations, local, state, and federal regulations and provide documentation of the same.
 - 2. Filter wastewater to the technically feasible limit, but not more than five (5) microns before disposal. Comply with all current local,

Asbestos Abatement Specs

state and federal codes relating to wastewater release.

3. Asbestos-containing waste that is properly labeled and double-bagged may be temporarily stored in areas approved by the Owner. Areas must be made secure before storing the waste. Waste is not to remain in the temporary storage area for longer than four (4) days before final load-out of materials.
4. All asbestos waste shall be double wrapped prior to transport from the site.
5. All vehicles used to transport asbestos waste must be DOT registered with regulatory agencies and display the proper registration and expiration stickers.
6. Trucks must have a cargo area with a storage compartment that is fully lined with a minimum of one (1) layer of 6-mil polyethylene on the walls and two (2) layers on the floor.
7. If a debris box is used, the Contractor shall make the necessary arrangement with the Owner including obtaining appropriate permits.
8. Contractor is responsible for coordination with the waste disposal site and with the waste hauling company, and for obtaining the LDEQ ADVF. Provide a copy of all LDEQ *Asbestos Disposal Verification Form* (ADVF) If applicable. If the waste is a Category I or II Non – friable material, provide a Waste Manifest for each load.
9. Debris box for asbestos waste shall be lined with a double layer of polyethylene sheeting and must be covered at the end of each work shift.
10. Disposal shall be in a landfill that meets EPA requirements. Do not throw bags into landfills in a way that may cause the bags to burst open. If bags cannot be taken out of the drums undamaged, then include the disposal of the drums with the bags. Ensure that bags remain intact during this process.
- 11.

3.13 FINAL JOB LOG:

- A. A final job log shall be prepared by the Abatement Contractor and presented to the Owner in electronic form and paper form via a binder before submitting final payment application. The binder shall contain a signed copy of the Final Job Log Checklist attached in Appendix I. The binder shall also contain a Table of Contents for the final submittals and tabs for each section of the final submittals. All submittals must be first-run copies of the original documents. The job log shall include, but not be limited to, the following:

Copies of applicable permits, ADVF, notifications, and changes. The original or a legible, first photocopy of each certified mail return receipt shall be attached to the applicable documents.

The Waste Shipment Record and any RCRA documents required for the project.

Employee physicians written opinion.

Employee training certificates/accreditation.

Visitors sign-in log. Containment sign-in log.

Daily reports, signed by the on-site Supervisor.

Final inspection list and *Certificates of Visual Inspection*.

Copies of OSHA compliance air monitoring records conducted during the work.

Certificate of Visual Inspection

Project: 1752 Clark Street
Baker, LA 70714

CONTRACTOR

I, _____ DO HEREBY DECLARE THAT I HAVE VISUALLY
INSPECTED ALL AREAS REQUIRING ASBESTOS ABATEMENT AND DO CERTIFY THAT ALL
ASBESTOS CONTAINING / CONTAMINATED MATERIALS HAVE BEEN REMOVED IN
ACCORDANCE WITH THE PROJECT SPECIFICATIONS AS SUPPLIED.

TITLE: _____

SIGNATURE: _____ DATE: _____

OWNER/CONSULTANT

I, _____ DO HEREBY DECLARE THAT I HAVE ACCOMPANIED
THE ABATEMENT CONTRACTOR AND VISUALLY INSPECTED ALL AREAS REQUIRING
ASBESTOS ABATEMENT AND DO CERTIFY THAT ALL ASBESTOS CONTAINING /
CONTAMINATED MATERIALS HAVE BEEN REMOVED IN ACCORDANCE WITH THE
PROJECT SPECIFICATIONS AS SUPPLIED.

TITLE: _____