

**ASBESTOS ABATEMENT  
SPECIFICATIONS  
FORMER  
SUPERIOR SWITCHBOARD  
FACILITY**

**2615 NW LOOP 286  
PARIS, TEXAS 75460  
December 19, 2018**

**PREPARED FOR:  
PARIS  
ECONOMIC DEVELOPMENT  
CORPORATION  
c/o GHD  
1755 Wittington Place  
Suite 500  
Dallas, Texas 75234**



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2018**

# **ASBESTOS ABATEMENT SPECIFICATIONS**

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**ASBESTOS ABATEMENT SPECIFICATIONS  
FORMER SUPERIOR SWITCHBOARD FACILITY  
2615 NW LOOP 286  
PARIS, TEXAS 75460**

**December 19, 2018**

**DIVISION I - GENERAL**

**1.1 DESCRIPTION:** This section covers labor, materials, facilities, equipment, services, employee training and testing, permits, and agreements necessary to perform asbestos abatement, in accordance with these specifications, including but not limited to Texas Department of State Health Services (TDSHS) Texas Asbestos Health Protection Rules (TAHPR) and the Environmental Protection Agency (US EPA) Regulation 40 CFR 61 Subpart M, Occupational Safety and Health Administration (OSHA) Regulations 29 CFR 1926.1101 and 29 CFR 1910.134, and any other applicable Federal, State, and Local government regulations. Whenever conflict or overlap of the above references exists, the most stringent provisions apply. The Abatement Contractor represents that it has all necessary licenses and permits required for the performance of this contract and the project. The Abatement Contractor shall determine the applicability of any process patents he/she may be employing and be responsible for paying any fees, royalties, and licenses that may be required for the use of the patented processes. **The abatement contractor shall be responsible for verifying all material quantities presented in this specification.**

A. **Scope of Work:** Former Superior Switchboard Facility 2615 NW Loop 286 Paris, Texas 75460.

1. **Location of Asbestos Abatement:** The asbestos-containing building materials (ACBM) to be removed consist of roof flashing, drywall joint compound & texture, plaster texture, various floor tile & associated black mastic (multiple types), window caulk, and cement asbestos flue pipe (see Appendix II Asbestos Abatement Drawings).
2. **Description of Work:** The ABCM to be removed consists of the following (see Appendix II Asbestos Abatement Drawings for locations):



ITEM #	MATERIAL	LOCATION	QUANTITY
1	Drywall Joint Compound & Rolled Texture	Interior Office Building Walls	29,400 SF
2	Plaster Wall Texture	Interior Office Building Walls Around Safe	1,200 SF
3	Off-White 12" x 12" Floor Tile & Black Mastic	Office Building South areas	3,780 SF
4	Light Tan 9" x 9" Floor Tile	Office Building North areas	4,620 SF
5	Roof Flashing	Exterior Roof Parapet Walls	8,400 SF
6	White Exterior Window Caulk	Exterior Office Windows	16 Windows
7	Cement Asbestos Flue Pipe	Production Facility Roof	400 LF

3. Drywall joint compound & texture, plaster wall texture, and flooring materials shall be removed in full containments with HEPA filtration units, polyethylene (poly) floors and walls, and a three-chamber decontamination unit with shower (see Appendix II illustrations).
4. Floor tile and mastic located outside full containments shall be removed in containments with HEPA filtration units, poly splashguards, and a three-chamber decontamination unit with shower (see Appendix II illustrations). At the discretion Asbestos Abatement Contractor, small areas of exposed floor tile and/or mastic may be removed using the *Resilient Floor Covering Institute (RFCI)*'s recommended removal procedures.
5. Exterior window caulk, roof flashing, and cement asbestos flue pipes shall be removed in regulated work areas. Exterior window caulk, roof flashing, and cement asbestos flue pipe abatement activities shall be initiated after all other abatement activities have been completed.
6. Contractor shall provide the following minimum signs and posting requirements:
  - a. Cordon off the proximity (within approximately 20 ft.) of regulated work areas using construction tape, polyethylene dust barriers, or other appropriate means.
  - b. Persons entering the regulated work areas shall wear appropriate respiratory protection and full-body coveralls.
  - c. Affix warning signs at the entry and approaches to the regulated areas.



B. Sequence of Work: Removal of asbestos-containing material associated industrial hygiene services, and related activities shall proceed in the following sequence:

1. Pre-abatement: Abatement Contractor shall show evidence of worker training, respiratory protection, employee medical examinations, and employee knowledge of asbestos hazards at/or before this meeting. Abatement Contractor shall also show ability to provide access, support, and protection to all authorized visitors and inspectors.
  - a. The Asbestos Consultant's Air Monitoring Technician shall collect background 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 1,250 liters, shall be collected within each building. **Paris Economic Development Corporation** shall be responsible for notifying all outside contractors, as well as **Paris Economic Development Corporation** personnel, of the existence of asbestos-containing materials within the confines of the facility prior to beginning such work.
  - b. The Abatement Contractor shall secure building and mobilize. The affected areas shall be sealed under provisions of Section 3.2.
  - c. The heating, ventilating, and air-conditioning (HVAC) system shall be turned off in the building, or re-routed so that it does not operate in the work areas.
  - d. The work area shall be decontaminated by wet cleaning and HEPA-vacuuuming containment areas as required in Division III.
  - e. The Abatement Contractor shall construct the containment area and decontamination facilities protecting all furnishings remaining inside the work area.
2. Abatement Activities: FULL CONTAINMENT
  - a. Asbestos-containing material shall be removed from the affected areas using methods described in Division III.
  - b. All asbestos debris shall be packed in danger-labeled plastic bags as it accumulates on the floor.
  - c. All loose debris shall be pre-cleaned from all surfaces and poly.
  - d. Following first poly inspection, the first layer of plastic sheeting shall be removed.
  - e. At the discretion of the Asbestos Consultant or his Project Manager, first and second cleanings shall be subject to a sufficient drying period between cleanings. After the



second cleaning, the remaining layer of plastic sheeting and surfaces from which asbestos has been removed shall be encapsulated. After the encapsulant has dried, the remaining layer of plastic sheeting, excluding critical barriers, shall be removed.

- f. Final inspection shall be performed by the Asbestos Consultant or his on-site Project Manager. Final air sampling analyzed by Phase Contrast Microscopy shall be performed as described in Division III of this specification. At the discretion of the Asbestos Consultant, Transmission Electron Microscopy (TEM) shall be employed to confirm final testing results in any abatement area.
3. Final inspection and testing shall be performed as described in Division III, Section 3.6.
  4. All asbestos-containing materials, asbestos-contaminated materials and other waste materials shall be disposed of as described under Division I, Section 1.15.
  5. The Asbestos Consultant or his Project Manager shall certify the area's non-hazardous condition.

**RELATED WORK:** The Abatement Contractor shall be responsible for providing demolition activities to access concealed ACBM.

**1.3 AUTHORITY TO STOP WORK:** The Asbestos Consulting Firm shall have the authority to stop work at any time it becomes apparent that abatement work is not proceeding as required by these specifications. If at any time the Consultant determines that conditions are not within specifications and applicable regulations, abatement can be stopped. The stoppage of work shall continue until conditions have been corrected to the satisfaction of **Paris Economic Development Corporation**. Standby time required to resolve the problem shall be at the Abatement Contractor's expense.

**1.4 CONTRACTOR DOCUMENTS REQUIRED AT THE SITE:** Records and documents shall be maintained onsite at the asbestos project location for the duration of the project. Records and documents with personal references shall be made available to all persons employed at the site upon request. All on-site records and documents shall be made available to the TDSHS upon request. The records and documents include:

- A. All current licenses, registrations, and accreditations certificates.
- B. US EPA "Green Book" for O&M work




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License Expiration Date: February 3, 2019



- C. Appropriate publications as listed in 295.33 of this title (relating to Adoption by Reference of Federal Standards) for the asbestos activity, which is being performed.
- D. A copy of the "Recommended Work Practices for the Removal of Resilient Floor Coverings" published by the Resilient Floor Covering Institute, if removing floor coverings using this method.
- E. Post the TDSHS information poster issued by the department.
- F. Post copies of any violations issued as evidenced by an order from the federal or state asbestos-regulating authorities within the preceding 12 months from any asbestos project.
- G. A current copy of the current TDSHS notification and any amendments.
- H. A copy of the contract or technical specifications governing the project or if no contract, location and description of operations and abatement procedures.
- I. A listing of each of the contractors, subcontractors, and consultants on the project.
- J. A daily sign-in/out log that identifies persons by name and the length of time each spent at the site.
- K. Records of all onsite air monitoring.
- L. A written respirator program, which conforms to requirements of 29 CFR 1910.134 (b).
- M. Name and address of the contractor or building owner-operator.
- N. Name and address of project supervisor(s).
- O. Description of personal safety practices.
- P. Name and address of waste disposal site.
- Q. A roster of registered asbestos workers employed.
- R. Dart impact test documentation from the manufacturer for poly and poly bags when true 6-mil poly is not used.



**1.5 DEFINITIONS:** All terms not included shall have the definition given in applicable Federal, State, and Local publications and regulations.

- A. **AGGRESSIVE AIR SAMPLES** – Air samples collected after floors, ceiling, and walls of the work area have been swept with the exhaust of a one (1) horsepower leaf blower. Area air shall be agitated each hour while such samples are being collected.
- B. **AMENDED WATER** – Amended water contains a surfactant or wetting agent, creating a solution with which asbestos fibers bond easily.
- C. **ASBESTOS** – The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
- D. **ASBESTOS FIBERS** – This expression refers to asbestos fibers having an aspect ratio of 3:1 and longer than 5 micrometers.
- E. **ASBESTOS-SAFE** – Asbestos present in a building that has been rendered non-hazardous by means of encapsulation or enclosure, or has been determined to be non-friable.
- F. **AUTHORIZED VISITORS** – Any visitor authorized by **Paris Economic Development Corporation** or any representative of a regulatory agency or other agency having jurisdiction over the project.
- G. **CONTAINMENT AREA** – A containment area provides isolation of the work area to prevent escape of asbestos fibers. A containment area is usually devised of floor-to-ceiling true six (6)-mil thick poly or poly with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) of 512 grams and transverse direction (T.D.) of 2067 grams, forming an enclosure sealed at corners and seams with duct tape to create an airtight system.
- H. **DECONTAMINATION FACILITIES** – A series of connected rooms, with airlocks of curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment. Decontamination systems shall be contiguous and adjacent to the enclosed asbestos control area.
- I. **FRIABLE ASBESTOS MATERIAL** – Material containing more than one percent (1%) asbestos by area that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- J. **HEPA FILTERED EQUIPMENT** – High efficiency particulate air (HEPA)-filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be of 99.97 percent efficient for retaining fibers of 0.3 micrometers or larger.





- K. **HEPA FILTERED VENTILATION SYSTEMS** – The use of negative pressure during asbestos removal protects against large-scale release of fibers to the surrounding area in case of a minor breach in the containment barrier by ensuring air infiltration into the containment area. Consisting of a cabinet with an opening at each end, one for air intake and one for exhaust, the HEPA exhaust unit establishes lower pressure inside than outside the enclosed work area during asbestos abatement.
- L. **LOCKDOWN** – A procedure of applying a protective coating or sealant to a surface from which asbestos-containing material has been removed. Its primary function is to control and minimize airborne asbestos fiber generation resulting from any non-visible asbestos-containing residue on the substrata.
- M. **LOOSE MATERIAL** – This material is described under cleaning of poly in Section 3.6. This term refers to debris that can be picked up with the fingers or become dislodged from the poly.
- N. **NON-FRIABLE ASBESTOS MATERIAL** – Material containing asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and shall not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing or disposal.
- O. **PERSONNEL PROTECTIVE EQUIPMENT** – Included in this category are dual-filter half-face respirators and full body disposable coveralls with hoods, booties, and gloves.
- P. **VISIBLE DEBRIS** – As described for final inspections in Section 3.6, this term refers to any material that can be seen with the unaided eye.

## 1.6 PRE-CONSTRUCTION MEETING: OMIT



**1.7 PERSONNEL QUALIFICATIONS:** All Abatement Contractor personnel involved with asbestos abatement work shall be trained and registered or licensed as required under TAHPR and OSHA. They shall be tested prior to any work and be thoroughly familiar with the Contractor's standard operating abatement procedures. All personnel shall undergo medical examinations required by OSHA. The supervisor, foremen, and workers shall be thoroughly familiar with all applicable regulations and practices for asbestos work and shall have participated in at least two (2) abatement projects during the last two (2) years with the selected Abatement Contractor. All personnel shall be trained in the use and care of respirators and pass the respirator fit test. Anyone without the above qualifications shall not be allowed to work in the abatement area at any time. The Abatement Contractor shall submit proof of registration of workers and supervisor licenses as required under TAHPR.

A. Supervisor:

1. Training and knowledge of applicable regulations and expertise in safety and environmental protection as evidenced by the participation in and successful completion of a training course offered by an US EPA-endorsed educational institution and satisfying the requirements of OSHA 29 CFR 1926.1101 "Competent Supervisory Personnel." Include certification of successful completion, evidenced by examination.
2. Current State of Texas license for abatement supervision.
3. Current respirator fit test.
4. Current accreditation certificates.
5. Experience with abatement work as evidenced by participation in at least two (2) asbestos abatement projects with the proposed asbestos Abatement Contractor.
6. Medical records with a statement signed by examining physician including, but not limited to, the following:
  - a. Employee's general health condition.
  - b. Evidence of existing medical conditions that may be aggravated by asbestos abatement activities.
  - c. Employee's ability to work under containment restrictions, including sufficient pulmonary function to compensate for stress produced by respiratory protection.



B. Workmen:

1. Training as evidenced by the participation and successful completion of a training course offered by an US EPA-endorsed educational institution and satisfying the requirements of OSHA 29 CFR 1926.1101 and TAHPR for worker training on respiratory protection and the standard operating procedures for asbestos abatement work for 100% of the work force. Include certification of successful completion, evidenced by examination.
2. Current State of Texas registration for abatement workers.
3. Current respirator fit test.
4. Current accreditation certificates.
5. Medical records with a statement signed by examining physician including, but not limited to, the following:
  - a. Employee's general health condition.
  - b. Evidence of existing medical conditions that may be aggravated by asbestos abatement activities.
  - c. Employee's ability to work under containment restrictions including sufficient pulmonary function to compensate for stress produced by respiratory protection.

**1.8 AVAILABILITY OF TRAINED PERSONNEL:** There shall be a sufficient number of trained and qualified workers and supervisors to accomplish the work within the required schedule. A maximum of ten (10) workers per state-licensed supervisor shall be employed to accomplish the abatement work. Because general work cannot start prior to the successful decontamination of the work area, it is imperative that a sufficient number of trained personnel be engaged throughout the abatement process. No untrained, non-fully qualified or unapproved person shall be employed to expedite completion of the abatement work. If additional workers are required to finish the job on schedule after the initial submittals have been Asbestos Consultant-approved, the Contractor shall submit the appropriate documents and receive approval before new workers are permitted inside the work area.



**1.9 STANDARD OPERATING PROCEDURES:** Development and implementation of a standard operating procedure ensures maximum protection and safeguard from asbestos exposure of workers, visitors, employees, residents, and the environment. The standard operating procedure shall ensure and entail the following:

- A. Twenty-four hour security from unauthorized entry into the work space. Containment areas shall be locked when not manned.
- B. Proper protective clothing and respiratory protection utilized prior to entering the work space from the outside.
- C. Safe work practice adherence in the work place, including provisions for inter-room communications, exclusion of eating, drinking, smoking, or in any way breaking respiratory protection.
- D. Proper exit practices from the work space through the airlocks, when applicable. Labeling of all exits.
- E. Removing, encapsulating, or enclosing asbestos in ways that minimize fiber release. Asbestos shall be removed using wet methods in all areas except where noted.
- F. Compliant packing, labeling, loading, transporting, and disposing of contaminated material to minimize exposure and contamination.
- G. Emergency evacuation planning for medical or safety reasons (fire and smoke) to minimize exposure, including procedures for notifying emergency personnel they are entering an asbestos-contaminated area.
- H. Safety regulation familiarization to prevent work space accidents, especially electrical shocks, slippery surfaces, and entanglements in loose hoses and equipment.
- I. Effective supervision, air monitoring, and personnel monitoring to control exposure during abatement activity.
- J. Engineering systems maintenance to minimize exposure to work space fibers inside and outside the containment area.
- K. The number, type, and location of fire extinguishers in work areas satisfying the requirements of OSHA 29 CFR 1910.157 "Portable Fire Suppression Equipment" and TAHPR. Fire extinguishers are to be provided by the Asbestos Abatement Contractor.



### 1.10 NOTIFICATIONS, PERMITS, WARNING SIGNS, LABELS, & POSTERS:

- A. As soon as the Contract is awarded and no later than ten (10) business days prior to the start of work, the Abatement/Demolition Contractor shall communicate in TDSHS forms for demolition and renovation a notice of proposed abatement work to the agency shown below:

**Environmental Health Notifications Group  
Texas Department of State Health Services  
P.O. Box 143538  
Austin, Texas 78714-3538**

The Abatement Contractor shall communicate any changes in the scope or schedule in the project by telephone and in writing to the TDSHS as soon as changes occur.

- B. The Abatement Contractor shall secure and pay for all the permits required for the work, including disposal of asbestos in an approved landfill. **Unless otherwise specified, Paris Economic Development Corporation shall be responsible for payment of TDSHS Notification fees.**
- C. The Abatement Contractor shall send the 10-Day Notice and all other notifications, permits, and changes required for the abatement project to the appropriate agencies by **certified mail with return receipt requested**. On the same day that these documents are mailed, copies of these documents shall be sent by **certified mail with return receipt requested** to:

**Farmer Environmental Group, LLC  
4125 Fairway Drive, Suite 130  
Carrollton, Texas 75010**

**A copy of the 10-Day Notice shall also be sent via email to Blair Owens at [Blair.Owen@ghd.com](mailto:Blair.Owen@ghd.com),**

Either the original or a legible photocopy of the return receipts shall be attached to the notifications, permits, and changes and presented in the final job log.

- D. Warning signs shall be erected around the work space and at every point of potential entry from the outside, showing the words "Danger, Asbestos Hazard, Do Not Enter". The warning signs shall be brightly colored so that they shall be easily noticeable. The size of the sign and the size of the lettering shall be no less than the OSHA requirements. Signs shall be in both English and Spanish.
- E. Warning signs shall be erected around the work space and at every point of potential entry from outside the regulated work areas during ACBM component removal activities as defined



by OSHA 29 CFR 1910.1025(m)(2)(i). The size of the sign and the size of the lettering shall be no less than the OSHA requirements.

- F. Warning signs shall be erected around the work space and at every point of potential entry from the outside when flammable liquids are in use as defined by OSHA 29 CFR 1910.106(a)(19). Signs shall show the words "Caution, Flammable Materials, No Smoking". The warning signs shall be brightly colored so that they shall be easily noticeable. The size of the sign and the size of the lettering shall be no less than the OSHA requirements.
- G. In case of fire, accident, or other emergency, Contractor shall notify emergency personnel of the potential hazards of asbestos before they enter the Containment Area. Emergency personnel shall also be informed of any flammable or toxic chemicals in use in the Containment Area.
- H. OSHA & NESHAP-required labels for all plastic bags and all drums utilized to transport contaminated material to the landfill shall be provided, including the following:
  - 1) Owner Name
  - 2) Building Name
  - 3) Building Address
  - 4) Contractor Name
  - 5) Contractor's TDSHS License Number
- I. Any other signs, labels, warnings, and posted instructions necessary to protect, inform, and warn people of the hazard from asbestos exposure shall be provided.
- J. A copy of the latest applicable regulations from OSHA, US EPA, and TAHPR shall be posted in a prominent place for the workers.

### **1.11 RESPIRATORY SYSTEMS:**

- A. All workers, foremen, supervisors, authorized visitors, and inspectors shall be provided personally-issued and marked respiratory equipment approved by NIOSH or OSHA. When respirators with disposable filters are employed, sufficient filters shall be provided on-site for replacement as necessary by the worker.



- B. The minimum respiratory protection required for this project shall be as follows:
1. Half-faced, high efficiency air-purifying (P100) respirators shall be used for the following:
    - a. Decontamination of asbestos debris from removables such as furniture, draperies, carpeting, lights, etc.
    - b. All ACBM abatement activities of non-friable materials and flooring abatement activities.
    - c. Decontamination of asbestos waste bags.
    - d. Final wipe-down of work space if air samples show exposures in the area below 0.050 f/cc.
  2. During other work activities, respirators shall be worn as outlined in Table I:

**TABLE I**

<b>Asbestos Concentration</b>	<b>Minimum Acceptable Respirator</b>
1. Up to 0.050 f/cc	Snug, half-mask air-purifying respirator with cartridges approved for asbestos work.
2. 0.050 f/cc - 0.10 f/cc	Snug, full-face, air-purifying respirator equipped with dual-cartridge approved for asbestos work.
3. 0.10 f/cc - 1.0 f/cc	Powered air-purifying respirator (full facepiece) where asbestos is being disturbed & <b>during friable ACBM abatement activities.</b>
4. Over 1.0 f/cc	Type "C" supplied-air respirators, positive pressure, demand mode.

**1.12 PROTECTIVE CLOTHING:**

- A. All workers, foremen, supervisors, authorized visitors, and inspectors shall be provided protective disposable clothing consisting of full body coveralls, hoods, gloves, and 18" high boot-type covers or reusable footwear.
- B. Eye protection, hard-hats, and safety harnesses as required by job conditions and safety regulations shall be provided.



- C. Reusable footwear, hard-hats, and eye protection devices shall be left in the "Contaminated Equipment Room" until the end of the asbestos abatement work, but shall be cleaned daily of all bulk material.
- D. All disposable protective clothing shall be discarded and disposed of as asbestos waste each time the containment area is exited.

### 1.13 ENCLOSURES, SHOWERS, & TOILETS:

- A. Each full containment shall be equipped with a complete decontamination facility constructed with three (3) layers of true 6-mil poly or poly with at least a dart impact of 270 grams and tear resistance of M.D. of 512 grams and T.D. of 2067 grams on floors and two (2) layers of 4-mil poly forming the walls. Framing shall be of a sturdy wood or piping. Each division of the decontamination unit shall be more specifically constructed as noted and pictured herein.
- B. If decontamination facilities are constructed in publicly accessible areas or on the building exterior, black poly shall be erected between the dressing area and public areas.
- C. Lockers or storage containers in the clean room shall be provided for storage of worker's street clothes and uncontaminated disposable protective clothing and equipment. This room shall be used by workers and visitors to change from street clothes to disposable protective clothing and gear prior to entering the contaminated area and to dress into street clothes after they have showered and dried in the shower room as they exit the contaminated area. Respirators shall be decontaminated in disinfectant (not soap or alcohol) and stored in this area. Hooks shall be provided for decontaminated, drying respirators.
- D. Each full containment area shall provide the decontamination facilities described below. Refer to Appendix II for illustration of shower design.
  - 1. 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.
  - 2. 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.





3. 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 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 splash guards 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.
4. If space permits, bags of contaminated material shall be washed in a bag decontamination facility, separate from the personnel decontamination facility, after they have been pre-washed in the work area. This bag decontamination facility shall consist of a cold water supply source and a water collection/filtration system similar to the personnel shower system. The bag decontamination facility shall be separated from the containment area by an airlock as described above. In addition to this airlock, a second airlock shall be built between the bag storage area and the bag decontamination facility. Provisions shall be made to prevent any contaminated run-off from the bag decontamination area, similar to those for the personnel decontamination shower.
5. 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.



6. Transfer of bagged material through the decontamination area shall be performed by a minimum of three (3) workers in the following manner:
  - a. Bagged material shall be pre-rinsed in the containment area and carried into the decontamination area where a second rinse shall be performed.
  - b. The worker rinsing bagged material in the decontamination area shall take great care to ensure that all rinse water is contained for filtration.
  - c. Twice-rinsed bags shall be carried into the clean airlock, placed in a second bag, HEPA vacuumed externally and sealed with duct tape.
  - d. 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.
7. Adequate toilet facilities, as determined by the Asbestos Consultant, shall be **required**. The Abatement Contractor shall provide portable facilities; **Paris Economic Development Corporation's** facilities shall not be used by abatement workers unless authorized by **Paris Economic Development Corporation**.
8. HEPA ventilation shall be required in the entire decontamination system so that air shall flow from the outside towards the work space.

**1.14 PERSONNEL PROTECTION & DECONTAMINATION:** All abatement personnel shall be provided with the specified protective clothing and gear. All personnel entering and leaving the work space shall adhere to procedures as follows:

- A. Entering from the outside: Change from street clothes into protective clothing and clean protective gear.
- B. Exiting the Work Area: Dispose of all protective clothing into plastic bags labeled as asbestos waste.
- C. Written procedures shall be posted in the work place and all personnel shall be trained in the procedures for evacuation of injured workers and handling potential fires. Aid to a seriously injured worker shall be provided without delay for decontamination. Provisions to minimize exposure of rescue workers and contamination shall be instituted during evacuations and fire procedures.



- D. The Contractor shall instruct all employees and workers in the proper care of their personally-issued respiratory equipment, including daily maintenance, sanitizing procedures, etc.
- E. All respiratory equipment shall be inspected by the Contractor's supervisory personnel at the beginning of each work day, including breaks and lunch periods.

### 1.15 DISPOSAL ACTIVITIES:

- A. It is the responsibility of the Abatement Contractor to determine current waste handling, transportation, and disposal regulations for the work site and for each waste disposal landfill. The Contractor shall comply fully with these regulations and all US Department of Transportation and US EPA requirements.
- B. All waste materials and unused products that meet the definition of a listed or characteristic hazardous waste shall be disposed of according to requirements set forth by the US EPA Resource Conservation and Recovery Act (RCRA) including all necessary permits and other documents. The Abatement Contractor shall coordinate disposal of all hazardous waste generated on the project with Farmer Environmental Group. **No asbestos-containing waste shall leave the work site until inspected and approved by Farmer Environmental Group, and an authorized Site representative signs the Waste Shipment Record.**
- C. During handling of the asbestos-contaminated waste at the approved landfill site, the Contractor shall provide the following services:
  - 1. Inspect bags and barrels individually for integrity.
  - 2. Remove bags from the truck and place them individually onto the landfill.
  - 3. Decontaminate truck cargo space.
  - 4. During transport or after burial in an US EPA-approved landfill, any contamination throughout the lifetime of the material remains the responsibility of the building owner.
- D. The Contractor shall document actual disposal of the waste at the designated landfill by completing a Disposal Certificate and forwarding the original to **Paris Economic Development Corporation.**



**1.16 EXPOSURE CONTROLS:**

- A. Supply and ventilated exhaust air under HEPA filtration shall be maintained to create negative pressure measured by a manometer as -0.02" of water. Until initial wet cleaning completion, the negative air system shall operate 24 hours a day.
- B. A continuous strip chart record of obtained negative pressure levels shall be maintained and retained as a permanent record by the Asbestos Abatement Contractor.
- C. The ventilation system shall be in accordance with US EPA recommendations in the *Guidance for Controlling Asbestos-Containing Materials in Buildings, Appendix F*. Prior to set-up, the TDSHS Individual Asbestos Consultant or his Project Manager shall inspect the ventilation fan assemblies for proper HEPA filtration seals. The filter shall be properly placed into the filter holder and the filter holder shall have a flexible permanent gasket to prevent air leakage around the filter holder. The use of caulking material shall not be permitted in place of a permanent gasket.
- D. HEPA ventilation capacity sufficient to provide four (4) air changes per hour in the work areas shall be provided.
- E. In a multi-room abatement project, supply and exhaust units sufficient to create a stream of air away from the workers' faces (as demonstrated by smoke tube testing) shall be provided in each room. This shall occur without over pressurizing the containment area. Excessive ventilation that could possibly damage plastic isolation barriers or pull poly protection from walls shall be avoided.
- F. If possible, all HEPA-filtered air shall be vented to non-contaminated areas outside the building.

**1.17 SUBMITTALS: OMIT**

**1.18 APPLICABLE PUBLICATIONS:** The publications listed below form a part of this specification as referenced. The publications are named in text by the basic designation only.

- A. United States Environment Protection Agency (US EPA):
  - 1. Regulations for Asbestos (Title 40, Code of Federal Regulations, Part 61.)
  - 2. *Guidance for Controlling Asbestos-Containing Materials in Buildings* (1985).
  - 3. Regulations for disposing of hazardous wastes (Resource Conservation and Recovery Act [RCRA])



- B. Occupational Safety and Health Administration (OSHA): Asbestos Regulations (Title 29 CFR Part 1926.1101).
- C. National Institute for Occupational Safety and Health (NIOSH): "Respiratory Protection ... A Guide for the Employee".
- E. National Emissions Standards for Hazardous Air Pollutants (NESHAP): Hazardous Waste Disposal Standards (40 CFR Part 61, Subpart M).
- F. Texas Asbestos Health Protection Rules, February 2006.



## DIVISION II - PRODUCTS

### 2.1 MATERIALS: Lockdown Encapsulants

The lockdown agents shall be penetrating sealants and shall meet the following criteria:

- A. Contractor-selected lockdown agents shall demonstrate effective performance under independent laboratory testing and be TDSHS Individual Asbestos Consultant-approved. MSDS must be submitted for each proposed encapsulant.
- B. Encapsulants shall demonstrate probable effective performance under the tests conducted by an US EPA-approved independent testing laboratory.
- C. Encapsulants shall possess high flame-retardant characteristics as well as low toxic fume and smoke emission ratings.
- D. Encapsulants shall not be noxious or toxic to application workers or subsequent building occupants.
- E. Encapsulants shall exhibit some water vapor permeability to prevent condensation accumulation and common cleaning agent solution resistance.
- F. Encapsulants shall have acceptable weathering and aging characteristics and withstand most impact or abrasion to protect the encapsulant's surface.
- G. Encapsulants shall be acceptable by architectural standards.
- H. Encapsulants shall be compatible with all insulating material and flooring materials likely to be applied to the stripped surfaces.
- I. Encapsulants shall demonstrate substrata adherence capability.

### 2.2 TOOLS & EQUIPMENT:

- A. Airless Sprayer: Airless sprayers, suitable for application of encapsulating material, shall be used.
- B. Asbestos Filtration Device (AFD): Asbestos filtration devices shall utilize high efficiency particulate air (HEPA) filtration systems.
- C. Scaffolding: Scaffolding, as required to accomplish the specified work, shall meet all applicable safety regulations, including OSHA 29 CFR 1910.28.



- D. **Transportation Equipment:** Transportation equipment, as required, shall be suitable for loading, temporary storage, transport, and unloading of contaminated waste without exposure to persons or property.
- E. **Vacuum Equipment:** All vacuum equipment shall utilize HEPA filtration systems.
- F. **Water Sprayer:** The water sprayer shall be an airless or other low-pressure sprayer for amended water application. Hand-held pump spray tanks shall be used only for small jobs.
- G. **Manometer:** A manometer with a continuous strip chart shall be provided by the Contractor to assure negative pressure within the full containment area measured at -0.02" by manometer.
- H. **Other Tools and Equipment:** The Contractor shall provide other suitable tools for the stripping, removal, encapsulation, and disposal activities including but not limited to hand-held scrapers, nylon brushes, sponges, rounded edge shovels, and carts. Wire brushes shall not be used to remove or clean asbestos-insulated surfaces. No spray foam shall be used to seal any openings because of the potential fire hazard associated with this material.
- I. **The number, type, and location of fire extinguishers in work areas** satisfying the requirements of OSHA 29 CFR 1910.157 "Portable Fire Suppression Equipment" and TAHPR. Fire extinguishers are to be provided by the Asbestos Abatement Contractor.
- J. **Mastic removal solvents shall have a flashpoint of no less than 140<sup>0</sup> F.** Material Safety Data Sheets must be submitted for each proposed solvent.
- K. **If a fire hazard exists, all plastic sheeting will be certified by the Underwriters laboratory (UL) as being fire retardant.**



## DIVISION III - EXECUTION

### 3.1 UTILITIES:

- A. Provide a weatherproof, ground-faulted temporary electric power service and distribution system of sufficient size, capacity, and power characteristics for each use. Existing power to each abatement area shall be shut off prior to any removal. The cost to establish temporary electrical service for the Contractors' use shall be borne by the Contractor.
- B. Provide circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the project by the use of construction type power cords. All branch circuits must originate from a ground fault circuit interrupter located outside the containment. In general, run wiring overhead and rise vertically where wiring will be least exposed to damage from construction operations.
- C. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work.
- D. Service to decontamination unit subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.
- E. The Asbestos Abatement Contractor shall provide temporary electrical services and water services for the project if not provided by the Paris Economic Development Corporation.**
- F. Provide identification warning signs at power outlets, which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry-type transformers shall be provided where required to provide voltages necessary for work operations.
- G. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.
- H. Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single length will not reach areas of work.
- I. Exhaust from any internal combustion engines on-site shall be placed so as not to enter respirator or containment supplied-air intake.
- J. Only explosive-proof electrical equipment may be used in the containment area. All electrical equipment used in containment areas shall meet the safety requirement described in 29 CFR 1910.307.**





### 3.2 PRE-ASBESTOS ABATEMENT PREPARATION:

#### A. FULL CONTAINMENT AREA PREPARATION:

1. Prior to any abatement work in an area, the area shall be sealed off to anyone other than trained personnel and authorized visitors. Signs shall be erected around the perimeter in accordance with US EPA and OSHA regulations and this specification. Twenty-four hour security against unauthorized entry shall be provided during abatement process. Containment area must be locked when the Contractor is not on-site. A log shall be maintained of all people entering and exiting the work place.
2. After pre-cleaning the affected area of visible dust and debris with a HEPA vacuum, all floor surfaces in the containment areas, not scheduled for abatement, shall be sealed with two (2) layers of true 6-mil poly or poly with at least a dart impact of 270 grams and tear resistance of M.D. of 512 grams and T.D. of 2067 grams, making sure that seams of the first layer are perpendicular to those of the second, or otherwise kept out of contact. Floor poly shall be raised 12" onto the wall. All HVAC System filters shall be disposed of as asbestos waste. All openings between the containment areas and adjacent areas, including but not limited to windows, doorways, ventilation openings, drains, grills, ducts, etc., shall be sealed with one (1) layer of true 6-mil poly or poly with at least a dart impact of 270 grams and tear resistance of M.D. of 512 grams and T.D. of 2067 grams. All wall surfaces, not scheduled for abatement, and openings shall be sealed off with two (2) layers of 4-mil poly. **In areas with porous ceilings, the ceiling shall be sealed with one (1) layer of 4-mil poly.** Wall poly shall be installed so as to minimize joints and shall extend beyond wall/floor joints at least 12 inches. All HVAC intake and exhaust opening and any seams in system components shall be double-sealed with 6-mil poly or poly with at least a dart impact of 270 grams and tear resistance of M.D. of 512 grams and T.D. of 2067 grams. Any remaining exposed penetrations, ductwork, electrical boxes, and HVAC vents shall be wet-wiped and sealed with poly. At least one polyethylene wall to every containment shall be fitted with a piece of clear Plexiglas, measuring 18" x 18", to allow observation of at least 51% of contained space from outside.
3. Approval of the Asbestos Consultant or his on-site Project Manager shall be secured prior to the start of work for the following: barriers, personnel protection and decontamination procedures, notifications and permits, standard operating procedures, personnel training and testing, sealing and securing of the work area and equipment. The enclosed Pre-Abatement Checklist (Appendix I) shall be successfully completed before removal is authorized.
4. All HVAC systems shall be turned off in the work areas until the workspace passes final clearance sampling.



## B. FLOOR TILE AND/OR MASTIC CONTAINMENT AREA PREPARATION

1. Prior to any abatement work in an area, the area shall be sealed off to anyone other than trained personnel and authorized visitors. Signs shall be erected around the perimeter in accordance with US EPA and OSHA regulations and this specification. Twenty-four hour security against unauthorized entry shall be provided during abatement process. Containment area must be locked when the Contractor is not onsite. A log shall be maintained of all people entering and exiting the work place.
2. After pre-cleaning the affected area of visible dust and debris with a HEPA vacuum, any floors in the containment areas not scheduled for abatement shall be sealed with two (2) layers of true 6-mil poly with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) of 512 grams and transverse direction (T.D.) of 2067 grams, making sure that seams of the first layer are perpendicular to those of the second, or otherwise kept out of contact. Floor poly shall be raised 12" onto the wall. All HVAC System filters shall be disposed of as asbestos waste. All openings between the containment areas and adjacent areas, including but not limited to windows, doorways, ventilation openings, drains, grills, ducts, etc., shall be sealed with one (1) layer of 6-mil poly with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) of 512 grams and transverse direction (T.D.) of 2067 grams. All wall surfaces shall be sealed with splashguards consisting of one (1) layer of 6-mil poly with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) of 512 grams and transverse direction (T.D.) of 2067 grams extending up the walls a minimum of four (4) feet. **In areas with porous ceilings, the ceiling shall be sealed with one (1) layer of 4-mil poly.** All HVAC intake and exhaust opening and any seams in system components shall be double-sealed with 6-mil poly with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) of 512 grams and transverse direction (T.D.) of 2067 grams. Any remaining exposed penetrations, ductwork, electrical boxes, and HVAC vents shall be wet-wiped and sealed with poly. At least one poly wall to every containment shall be fitted with a piece of clear Plexiglas, measuring 18" x 18", to allow observation of at least 51% of contained space from outside.
3. Approval of the Asbestos Consultant or his onsite Project Manager shall be secured prior to the start of work for the following: barriers, personnel protection and decontamination procedures, notifications and permits, standard operating procedures, personnel training and testing, sealing and securing of the work area and equipment. The enclosed Pre-Abatement Checklist (Appendix I) shall be successfully completed before removal is authorized.
4. All HVAC systems shall be turned off in the work areas until the workspace passes final clearance sampling.



### C. REGULATED AREA PREPARATION

1. Prior to any abatement work, signs and barrier tape shall be erected around the perimeter in accordance with US EPA and OSHA regulations and this specification. Twenty-four hour security against unauthorized entry shall be provided during abatement process.
2. The floor area under the ACBM to be removed shall be covered with a 6-mil poly drop cloth.

### 3.3 ASBESTOS REMOVAL

#### A. DRYWALL JOINT COMPOUND & TEXTURE, PLASTER TEXTURE, & FLOORING MATERIALS LOCATED WITHIN FULL CONTAINMENT AREAS

1. The above locations shall be prepared with a full containment area as noted in Section 3.2 A. of this specification.
2. In areas with contaminated floors, all visible asbestos debris shall be picked up using the procedures outlined below before covering floor with poly.
  - a. Enclose containment area.
  - b. Set HEPA filtration.
  - c. Pick up debris. This should be done before abatement to reduce the spread of contamination.
3. **During all abatement activities, the Asbestos Abatement Contractor shall keep close control over the amount of water that is applied in the containment areas to avoid any leakage.**
4. Before removing any ACBM, all furniture and fixtures shall be cleaned with HEPA vacuum and wet wipe methods, and removed from containment area. Articles that cannot be removed shall be cleaned thoroughly, and protected from water damage and electrical shock.
5. Except as noted herein and/or in drawings, all asbestos to undergo abatement shall be sprayed with water containing a wetting agent. The wetting agent shall be 50% poly-oxethylene ester, or the equivalent, mixed proportionately one ounce to five gallons of water. This amended water shall be applied to the material as a fine low-pressure spray to minimize fiber release. Affected material shall be saturated sufficiently throughout the removal process so that no dry asbestos is removed. A continuous fine mist of amended



water shall be maintained in ambient work air and on all containment poly to maximize fiber control. **Water shall not be bagged under any circumstances.** Standing water shall be removed through a filtered water system. The filtered water system shall be equipped with a 20-micrometer filter and a 5-micrometer filter for proper filtration of contaminated water.

6. During removal of ACBM, the Asbestos Abatement Contractor shall remove the materials in manageable sections using hand tools. No debris shall be permitted to accumulate on the containment area floor
7. During drywall joint compound & texture removal, all drywall materials shall be removed, including drywall nails or screws. Drywall studs shall be removed as needed to access concealed ACBM. All insulation in wall or ceiling cavities shall be disposed of as asbestos-contaminated waste.
8. During plaster removal, the plaster, lathe, and any plaster overspray shall be removed and disposed of as ACBM.
9. Immediately following ACBM removal, the wet asbestos shall be packed into labeled true 6-mil poly bags, or fiber drums or poly bags with at least a dart impact of 216 grams and tear resistance of M.D. of 300 grams and T.D. of 2068 grams to prevent drying (refer to Appendix II for illustration). Bags shall not be filled more than half full, excess air must be squeezed out, the top twisted closed, folder over, and sealed with duct tape. Asbestos shall be bagged as it is removed; no accumulation of asbestos debris shall occur on scaffolding or floor. All bagged material shall be packed, deflated with a HEPA vacuum, and sealed inside true 6-mil plastic bags or fiberboard drums with OSHA & NESHAP-required labels. If an outer bag is used, excess air must be squeezed out and the outer bag twisted closed, the top folded over and sealed with duct tape. If a fiberboard drum is used, the top must be sealed. The exterior of the sealed drums or bags shall be thoroughly cleaned prior to loading on the truck for transportation to the landfill. **No asbestos-containing waste shall leave the work site until inspected and approved by Farmer Environmental Group, and an authorized Site representative signs the Waste Shipment Record.**
10. Disposal shall be made in a landfill meeting US EPA requirements and approved by TDSHS. Bagged material shall not be thrown into landfills in a way that may cause breakage. If bags are being transported in drums and removal from the drums creates breakage, the drum shall be included with bag disposal. Contractor shall ensure that bags do not break.
11. All used plastic, tapes, cleaning material, and clothing shall be treated as asbestos waste material. All waste materials shall be disposed of as described under Division I, Section 1.15.



**B. FLOOR TILE AND/OR MASTIC LOCATED OUTSIDE FULL CONTAINMENT AREA**

1. The above locations shall be prepared with a containment area as noted in Section 3.2 B. of this specification.
2. **During all abatement activities, the Asbestos Abatement Contractor shall keep close control over the amount of water that is applied in the containment areas to avoid any leakage.**
3. Before removing any ACBM, all furniture and fixtures, that are located in areas where ACBM has been previously disturbed, shall be cleaned with HEPA vacuum and wet wipe methods, and removed from containment area. Articles that cannot be removed shall be cleaned thoroughly, and protected from water damage and electrical shock.
4. All asbestos-containing flooring materials to be removed shall be soaked with amended water wetting agent containing 50% poly-oxethylene ester or the equivalent mixed proportionately one ounce to five gallons of water. Amended water shall be applied to the flooring material by first flooding the floor. The amended water shall then stand for approximately 1 – 2 hours before removal begins. Standing water shall be removed through a filtered water system equipped with a 20-micron filter and a 5-micron filter for proper cleansing of contaminated water. Water shall not be bagged.
5. Once the floor materials have been thoroughly soaked with the amended water, concealing materials shall be peeled off the mastic material using a hand scraper to minimize fiber release. All concealing materials shall be disposed of as asbestos waste. Once the flooring materials have been removed, any asbestos-containing mastic shall be wetted again with a solvent specified for the removal of tar adhesion mastic and meeting requirements of Section 2.2. All solvents shall be first run products. Once applied, the mastic material shall be removed with plastic-edged tool, ensuring that mastic is thoroughly saturated with the solvent during the complete removal project. The mastic shall be placed in true 6-mil poly bags or sealed in fiberboard drums as it is removed. A continuous fine mist of amended water shall be maintained in ambient work area to maximize fiber control.
6. During floor tile and/or mastic removal, the Asbestos Abatement Contractor shall be responsible for removing wall studs, as needed, to access any asbestos-containing flooring materials that may be concealed under the walls.
7. Immediately following removal, the floor shall be thoroughly cleaned with an industrial-strength cleaner. To prevent drying, all wet asbestos debris, including concealing materials shall be sealed in poly bags or fiberboard drums. No accumulation of asbestos material shall occur in the work area. Immediately following removal, all surfaces shall



be thoroughly cleaned with an amended water solution. All bagged material shall be packed, deflated with a HEPA vacuum, and sealed inside true 6-mil plastic bags or fiberboard drums with OSHA & NESHAP-required labels. If an outer bag is used, excess air must be squeezed out and the outer bag twisted closed, the top folded over and sealed with duct tape. If a fiberboard drum is used, the top must be sealed. The exterior of the sealed drums or bags shall be thoroughly cleaned prior to loading on the truck for transportation to the landfill. **No asbestos-containing waste shall leave the work site until inspected and approved by Farmer Environmental Group, LLC, and an authorized Site representative signs the Waste Shipment Record.**

8. Disposal shall be made in a landfill meeting US EPA requirements and approved by TDSHS. Bagged material shall not be thrown into landfills in a way that may cause breakage. If bags are being transported in drums and removal from the drums creates breakage, the drum shall be included with bag disposal. Contractor shall ensure that bags do not break.
9. All used plastic, tapes, cleaning material, and clothing shall be treated as asbestos waste material. All waste materials shall be disposed of as asbestos waste.

C. EXTERIOR WINDOW CAULK, CEMENT ASBESTOS FLUE PIPE, & ROOF FLASHING

1. After all other ACBM has been removed, exterior window caulk, roof flashing, and cement asbestos flue pipe abatement activities shall be initiated.
2. Barrier tape and signs shall be erected around the building. Access shall be restricted to authorized personnel only. Poly drop cloths shall be placed on the ground under ACBM to be removed.
3. The exterior window caulk shall be removed using hand tools.
4. The roofing flashing shall be removed using hand tools. **Roof cutters with rotating blades WILL NOT be permitted.** Roof flashing materials shall be removed from the roof by the end of each workday. Roof flashing materials shall be lowered from the rooftop to the ground level, and not thrown off the roof.
5. The cement asbestos flue pipe shall be removed intact and sections disconnected at the pipe joints.
6. The Abatement Contractor shall provide scaffolding and/or ladders, as needed, to access and remove exterior ACBM.
7. Except as noted herein and/or in drawings, all asbestos to undergo abatement shall be sprayed with water containing a wetting agent. The wetting agent shall be 50%



poly-oxethylene ester, or the equivalent, mixed proportionately one-ounce to five gallons of water. This amended water shall be applied to the material as a fine low-pressure spray to minimize fiber release. Affected material shall be saturated sufficiently throughout the removal process so that no dry asbestos is removed. A continuous fine mist of amended water shall be maintained in ambient work air and on all containment poly to maximize fiber control. **Water shall not be bagged under any circumstances.** Standing water shall be removed through a filtered water system. The filtered water system shall be equipped with a 20-micrometer filter and a 5-micrometer filter for proper filtration of contaminated water. Access shall be restricted to authorized personnel only.

8. After the exterior window caulk and flue pipes have been removed, the asbestos-containing materials shall be misted with amended water a second time and sealed with two layers of true 6-mil plastic with OSHA & NESHAP-required labels as described in Section 1.10. **No asbestos-containing waste shall leave the work site until inspected and approved by Farmer Environmental Group, and an authorized Site representative signs the Waste Shipment Record.**
9. Asbestos-containing roofing and flashing materials shall be disposed of and manifested as Category I Non-friable Asbestos-Containing Materials using "burrito bags" or in open top dumpsters provided the materials are covered with tarps during transport. **No asbestos-containing waste shall leave the work site until inspected and approved by Farmer Environmental Group, and an authorized Site representative signs the Waste Shipment Record.**

### 3.4 ENCLOSURE – OMIT

### 3.5 ENCAPSULATION – OMIT

### 3.6 FINAL DECONTAMINATION, INSPECTION & TESTING:

- A. After a minimum of one pre-cleaning of the work space following removal of asbestos from applied surfaces, the Asbestos Consultant or his Project Manager shall be notified and shall inspect the first layer of poly and surfaces from which asbestos has been removed. If all visible ACBM has been removed, and if all loose debris has been removed from poly and equipment in the work place, the first poly layer shall be removed.
- B. Following the removal of the first layer of poly and after a minimum of two (2) thorough wet cleanings (with a sufficient drying time intermission as determined by the Asbestos Consultant or his Project Manager), the Asbestos Consultant or his Project Manager shall be notified for inspection and final testing. The Asbestos Consultant or his representative shall visually



inspect the outer layer of poly and the work space for any visible asbestos dust or contamination. If the visual inspection does not reveal any dust or other signs of contamination, the final layer of poly shall be sprayed with an encapsulant to lock down invisible fibers. After a sufficient drying period the final layer of poly shall be removed, excluding critical barriers. Under the aggressive conditions described in Section 1.5 - Definitions, final clearance samples shall be collected after the second layer of poly has been removed. All critical barriers shall remain intact until the area has passed final clearance samples.

- C. The final testing shall take place under active agitation of the air in the containment space. Aggressive sampling shall be conducted by the Asbestos Consultant's Air Monitoring Technician to ensure that the space may be certified as asbestos-safe under occupied conditions. A minimum five (5) final clearance samples, with a minimum sample volume of 1,250 liters, shall be collected for each containment area encompassing more than 160 square feet. A minimum three (3) final clearance samples, with a minimum sample volume of 1,250 liters, shall be collected for each containment encompassing less than 160 square feet. Final clearance samples shall not be required for exterior abatement activities. Clearance air samples shall be analyzed by Phase Contrast Microscopy (PCM) and results of 0.010 f/cc or less shall be considered satisfactory. At the discretion of the Asbestos Consultant, Transmission Electron Microscopy (TEM) shall be employed to confirm final testing results in any abatement area. If TEM is required, the containment areas shall be certified clean when air sample results collected under the above conditions and analyzed by TEM reveal 70 s/mm<sup>2</sup> or less on the filter.
- D. After satisfactory final clearance sampling is achieved, any remaining barriers and the decontamination facility shall be removed. The poly, duct tape, and decontamination facility material shall be disposed of as asbestos waste. A final inspection shall be carried out by the Asbestos Consultant or his Project Manager to ensure that no debris is produced during the dismantling operations.
- E. If the results of the final testing are not satisfactory, thorough wet cleaning and/or HEPA vacuuming shall be repeated until the required decontamination levels have been confirmed.





### 3.7 MONITORING:

- A. Work performance and execution shall be closely monitored by the Asbestos Consultant or its representative. A minimum of three (3) background air samples, with a minimum sample volume of 1,250 liters, shall be collected from each building level. Monitoring shall continue both inside the work area and its contiguous environment to ensure full compliance with specifications and all 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, outside the building, and outside the bag-out facility. Air contamination levels shall be maintained outside the containment areas at or below 0.010 f/cc. Detection of fiber counts above 0.010 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 0.010 f/cc or less.
- B. During abatement activities in regulated work areas, air samples shall be collected in the work area and outside the work area on two (2) sides. Air contamination levels shall be maintained inside and outside the regulated work areas at or below 0.010 f/cc. Detection of fiber counts above 0.010 f/cc inside or outside the regulated work areas shall result in immediate cessation of abatement activities and decontamination of areas where elevated fiber counts have occurred. Work inside the regulated work areas shall not resume until the contamination source has been detected and corrected and ambient air levels have been re-established at 0.010 f/cc or less.
- C. The Abatement Contractor shall be responsible for monitoring employees to comply with 29 CFR 1926.1101. A sampling strategy for those employees to be sampled shall be submitted to the Asbestos Consultant. For the duration of the project, full-shift personal monitoring for each job category must take place each shift, at times when exposure to asbestos fibers is expected to be highest. The cost of personal monitoring and lab analysis shall be borne by the Abatement Contractor.
- D. **Paris Economic Development Corporation** shall bear all costs in connection with the work in Paragraph A & B above, performed by the Asbestos Consultant for the initial analysis.



**3.8 RESTORATION & REPAIRS:** The Abatement Contractor shall be **required**, along with the Owner or his representative, to verify existing conditions in the work areas prior to abatement. All existing conditions shall be verified by videotape and/or in writing. The Abatement Contractor shall repair and restore work areas in preparation for demolition in accordance with the final inspection list.

If potential ACBM is impacted during any activity after the final inspection, all work shall cease in the immediate area and the appropriate owner's representative notified. Adequate sampling and analysis shall be implemented in a timely manner to determine the material's content. No work shall be permitted where suspect material had been uncovered until the Owner or Owner's representative gives notification that the materials in question are non-asbestos, have been properly abated, or are rendered harmless.

**3.9 RESPONSIBILITY FOR DAMAGES:** As further defined by the Contract, any damage to finishes, floors, walls, or any other item or fixture not scheduled for demolition resulting from Abatement Contractor personnel actions shall be repaired as required by the Owner in preparation for renovation. This repair shall be at the expense of the Abatement Contractor. The Abatement Contractor shall be responsible for protecting all walls, floors, carpet, and furnishings not scheduled for demolition from possible water damage.

**3.10 FINAL JOB LOG:** A final job log shall be prepared by the Abatement Contractor and presented to the Asbestos Consultant before submitting final payment application. The final job log shall be in a Portable Document Format (PDF) and delivered electronically via email to [abatementdocs@farmereg.com](mailto:abatementdocs@farmereg.com). The final job log shall contain a signed copy of the Final Job Log Checklist attached in Appendix I. The job log 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 electronic scans of the original documents. The job log shall include, but not be limited to, the following:

- A. Copies of all applicable permits, notifications, and changes. The original or a legible photocopy of each certified mail return receipt shall be attached to the applicable documents.
- B. The Waste Shipment Record and any RCRA documents required for the project.
- C. All employee medical records.
- D. All employee training certificates and license or registration certificates.
- E. Visitors sign-in log.
- F. Containment sign-in log.



- G. Daily reports, signed by the on-site Supervisor.
- H. Final inspection list.
- I. Copies of OSHA compliance air monitoring records conducted during the work.
- J. Release of Liens as defined by the Contract.

--- END ---



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Craig Farmer  
TDSHS Individual Asbestos Consultant License #105122  
License Expiration Date: February 3, 2019



**APPENDIX I**

**PRE-ABATEMENT, FINAL INSPECTION, &  
FINAL JOB LOG CHECKLISTS**

## PRE-ABATEMENT CHECKLIST

ABATEMENT PROJECT: \_\_\_\_\_

PHASE: \_\_\_\_\_

PROJECT ADDRESS/LOCATION: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

OWNER CONTACT PERSON: \_\_\_\_\_

(A = Acceptable)

(D = Denied; must be corrected and re-inspected before asbestos removal begins)

(N/A = Not applicable to this project)

	A	D	N/A
1. Toilet facilities provided	[ ]	[ ]	[ ]
2. Emergency telephone numbers	[ ]	[ ]	[ ]
3. OSHA, US EPA, and NIOSH regulations posted	[ ]	[ ]	[ ]
4. Posters -- minimum wage, worker's comp., etc.	[ ]	[ ]	[ ]
5. NIOSH-approved respirators, clean parts in working order	[ ]	[ ]	[ ]
6. Electrical panel outside the work area	[ ]	[ ]	[ ]
7. Container for workers' street clothes	[ ]	[ ]	[ ]
8. New respirator cartridges and disposable clothing in proper containers	[ ]	[ ]	[ ]
9. Soap from dispenser and towels provided	[ ]	[ ]	[ ]
10. Goggles provided, if required	[ ]	[ ]	[ ]
11. Hearing protection provided, if required	[ ]	[ ]	[ ]
12. Hard hats provided, if required	[ ]	[ ]	[ ]
13. Safety shoes provided, if required	[ ]	[ ]	[ ]
14. Electrical system in abatement area turned off	[ ]	[ ]	[ ]
15. Negative air machines have properly installed filters, clean pre-filters, required internal pressure drop	[ ]	[ ]	[ ]
16. Aerial lifts have body belts with lanyards	[ ]	[ ]	[ ]
17. Ladders are non-conducting and stable	[ ]	[ ]	[ ]
18. HEPA vacuum is clean with filters properly installed	[ ]	[ ]	[ ]
19. Adequate escape routes are properly marked & illuminated with emergency lighting	[ ]	[ ]	[ ]
20. Acceptable amended water sprayers and chemicals provided	[ ]	[ ]	[ ]
21. Access controlled	[ ]	[ ]	[ ]
22. Was a survey conducted? [295.34(c)]	[ ]	[ ]	[ ]
23. Was a notification provided? [295.61(a)]	[ ]	[ ]	[ ]
24. Was the notification form filled out completely and properly? [295.61(a)]	[ ]	[ ]	[ ]
25. Did the project begin on the notified (amended) date? [295.61(f)]	[ ]	[ ]	[ ]
26. Is the asbestos abatement work being performed by licensed entity? [295.34(b)]	[ ]	[ ]	[ ]
27. Is a regulated area established with warning signs/barrier type? [295.60(a)]	[ ]	[ ]	[ ]
28. Are critical barriers properly installed? [295.60(b)]	[ ]	[ ]	[ ]
29. Are movable objects removed from the containment? [295.60(c)]	[ ]	[ ]	[ ]
30. Is wall sheeting properly installed? [295.60(d)]	[ ]	[ ]	[ ]
31. Is floor sheeting properly installed? [295.60(d)]	[ ]	[ ]	[ ]
32. Is the decontamination system functional? [295.60(e)]	[ ]	[ ]	[ ]
33. Is the decontamination system being used properly? [295.60(e)]	[ ]	[ ]	[ ]
34. Is the HVAC serving the containment are shut down? [295.60(f)]	[ ]	[ ]	[ ]

	A	D	N/A
35. Are danger signs in English and Spanish posted? [295.60(g)]	[ ]	[ ]	[ ]
36. Is there sufficient containment ventilation? [295.60(i)]	[ ]	[ ]	[ ]
37. Is monitoring of differential pressure showing -0.02"WC? [295.60(i)]	[ ]	[ ]	[ ]
38. Is ACBM or RACM adequately wet? [295.60(j)(1); 61.145(c)(3)]	[ ]	[ ]	[ ]
39. Is ACBM or RACM properly containerized and labeled? [295.60(j)]	[ ]	[ ]	[ ]
40. Are ground-default circuit interrupters (GFCI) being used for circuits in containment? [295.60(m)(2)]	[ ]	[ ]	[ ]
41. Is there one fire extinguisher per 3,000 sq.ft. of containment? [295.60(m)]	[ ]	[ ]	[ ]
42. Are there appropriate viewing windows? [295.60(d)]	[ ]	[ ]	[ ]
43. Are workers properly using personal protective equipment while in containment? [295.45(f)(5)]	[ ]	[ ]	[ ]
44. Is the supervisor at job site during abatement activity? [295.58(b)(1)(2)]	[ ]	[ ]	[ ]
45. Is a project mgr/consultant on site during abatement activity? [295.47(h)(4)]	[ ]	[ ]	[ ]
46. Is specification/design signed by consultant? [295.47(i)]	[ ]	[ ]	[ ]
47. Is baseline air monitoring included in specifications? [295.58(i)(1)(A)]	[ ]	[ ]	[ ]
48. Is PM, responsibilities & authority designated in writing? [295.47(h)(4)]	[ ]	[ ]	[ ]
49. Is ambient air monitoring being conducted? [295.58(i)(2)(A)(B)]	[ ]	[ ]	[ ]
50. Is OSHA air monitoring being conducted, or NEA available? [295.60(m)(3)]	[ ]	[ ]	[ ]
51. Are copies of Orders posted? (if applicable) [295.58(j)(2)]	[ ]	[ ]	[ ]
52. Is the TDSHS information posted on site? [295.58(j)(1)]	[ ]	[ ]	[ ]
53. Are applicable documents on site? [295.58(k)] (License, training, physical exam & fit test documents current & on site?)	[ ]	[ ]	[ ]
54. Are licenses or license cards current & appropriate to conduct activities? [295.35-295.56] If "no," name(s) and employer: _____	[ ]	[ ]	[ ]
55. Is a contract or specifications available? (if applicable) [295.62(c)(2)(c)]	[ ]	[ ]	[ ]
56. Are daily sign-in/out logs being maintained? [295.62 (c)(2)(E)&(F)]	[ ]	[ ]	[ ]
57. Are air monitoring results posted on site? [295.62 (c)(2)(G)]	[ ]	[ ]	[ ]
58. Is a written respiratory program available on site? [295.62(c)(2)(H)]	[ ]	[ ]	[ ]
59. Are written personnel safety practices available on site?[295.62(c)(2)(K)]	[ ]	[ ]	[ ]
60. Are original department issued ID cards for each licensee on site? [295.68(f)] If "no", name(s) of Person(s) _____	[ ]	[ ]	[ ]
61. Are waste containers labeled with OSHA warning? [295.60(j)(3)]	[ ]	[ ]	[ ]
62. Do waste containers/bags have generator labels? [295.60(j)(3)]	[ ]	[ ]	[ ]
63. Is the waste transporting vehicle marked during loading? [61.150(c)]	[ ]	[ ]	[ ]
64. Is the Waste Transporter licensed? [295.56(a)]	[ ]	[ ]	[ ]
65. Proper documentation of dart impact/tear resistance rating of poly/poly bags?	[ ]	[ ]	[ ]
66. Disposable/pop-up type dirty room exteriors painted with red letter "X"?	[ ]	[ ]	[ ]

Comments / Notes:

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ASBESTOS CONSULTANT OR PROJECT MANAGER SIGNATURE

DATE

ABATEMENT CONTRACTOR SUPERVISOR SIGNATURE

DATE

**FINAL VISUAL INSPECTION**

**FORMER SUPERIOR SWITCHBOARD FACILITY**

**WORK AREA:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

1. Ceiling Clean	Yes	No	N/A
2. Pipes Clean	Yes	No	N/A
3. Vents and/or Ducts Clean	Yes	No	N/A
4. Top of False Ceiling Clean	Yes	No	N/A
5. Fixtures Clean	Yes	No	N/A
6. Structural Members Clean	Yes	No	N/A
7. Walls Clean	Yes	No	N/A
8. Floors Clean	Yes	No	N/A
9. Personal and Load Out Decons Clean	Yes	No	N/A
10. Furnishings, equipment, or fixtures damaged	Yes	No	N/A

Farmer Representative: \_\_\_\_\_ TDSHS Lic. # \_\_\_\_\_

Project Supervisor: \_\_\_\_\_ TDSHS Lic. # \_\_\_\_\_

Owner Representative: \_\_\_\_\_

**FINAL JOB LOG CHECKLIST  
FORMER SUPERIOR SWITCHBOARD FACILITY  
ASBESTOS ABATEMENT PROJECT**

**Abatement Contractor shall submit the following items to PARIS ECONOMIC DEVELOPMENT CORPORATION's Asbestos Consultant before final payment:**

<u>Sub'd</u>	<u>Rec'd</u>	<u>App'd</u>		
		<u>Y</u>	<u>N</u>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A. Copies of all applicable permits, notifications, and changes. The original or a legible photocopy of each certified mail return receipt shall be attached to the applicable documents.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. The Waste Shipment Record and any RCRA documents required for the project.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. All employee medical records.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D. All employee training certificates and license or registration.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. Visitors log.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F. Daily reports, signed by the on-site Supervisor.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	G. Final inspection list.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	H. Copies of OSHA compliance air monitoring records conducted during the work.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I. Release of Liens as defined by the Contract.

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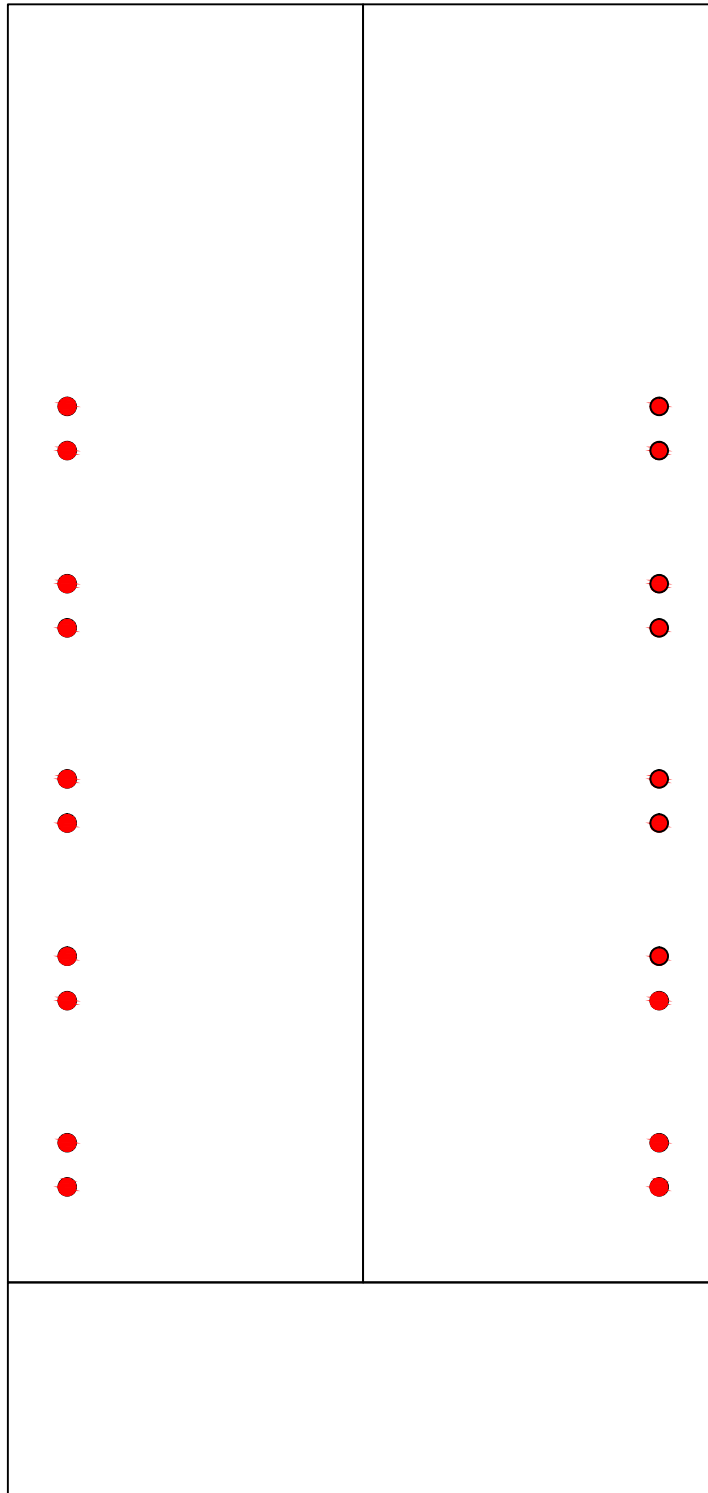
Abatement Contractor Date

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Consultant Authorization Date



**APPENDIX II**  
**REFERENCE DRAWINGS**



CRAIG FARMER  
 INDIVIDUAL ASBESTOS CONSULTANT  
 TDSHS #10-5122



ASBESTOS ABATEMENT LEGEND

 Asbestos-Containing Gray Transite Flue Pipe to be Abated by Component Removal

REVISIONS:

SHEET NUMBER:

AB-1

Farmer  
 Environmental  
 Group, LLC  
 4125 FAIRWAY DRIVE  
 SUITE 130  
 CARROLLTON, TEXAS  
 75010

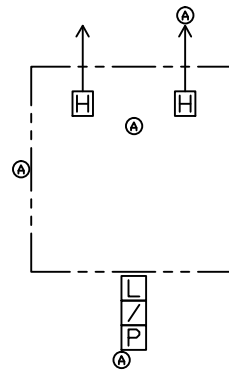
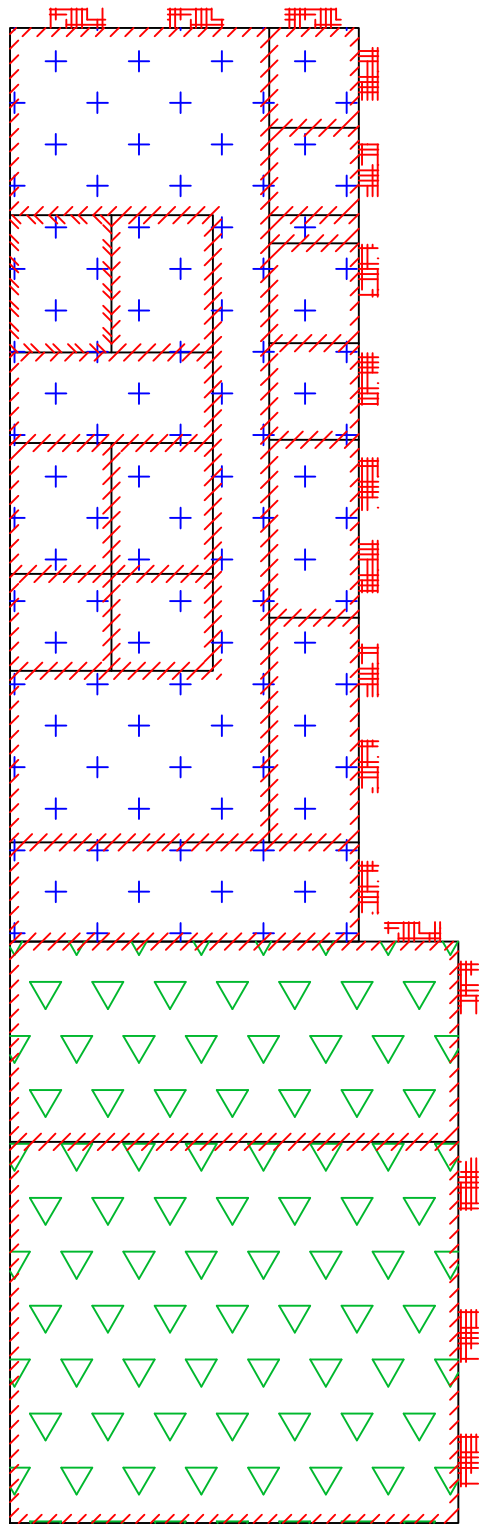
GHD SERVICES, INC.

FORMER SWITCHBOARD FACILITY – MAIN BUILDING  
 2615 NW LOOP 286, PARIS, TEXAS 75460



ASBESTOS  
 ABATEMENT PLAN

DATE: 12/19/18  
 JOB NO: 3672.07  
 DRAWN: L.KAPLAN  
 CHECKED: C.FARMER



TYPICAL CONTAINMENT AREA

CRAIG FARMER  
 INDIVIDUAL ASBESTOS CONSULTANT  
 TDSHS #10-5122

ASBESTOS ABATEMENT LEGEND

- Containment Area Barriers
- Personal/Load-Out Decontamination Unit
- Typical Air Sample Location
- Typical HEPA Fan Unit Location
- Asbestos-Containing Drywall Texture & Joint Compound to be Abated
- Asbestos-Containing Plaster Texture over Brick to be Abated
- Asbestos-Containing White/Gray Window Caulk to be Abated
- Asbestos-Containing Off-White 12' x 12' Floor Tile & Black Mastic to be Abated
- Asbestos-Containing Tan 9' x 9' Floor Tile to be Abated

REVISIONS:

SHEET NUMBER:

AB-2

Farmer  
 Environmental  
 Group, LLC  
 4125 FAIRWAY DRIVE  
 SUITE 130  
 CARROLLTON, TEXAS  
 75010

GHD SERVICES, INC.  
 FORMER SWITCHBOARD FACILITY - OUT BUILDINGS  
 2615 NW LOOP 286, PARIS, TEXAS 75460

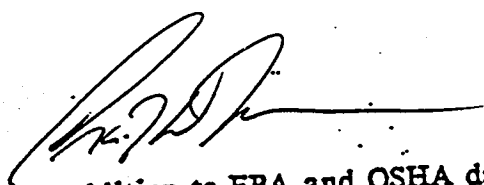
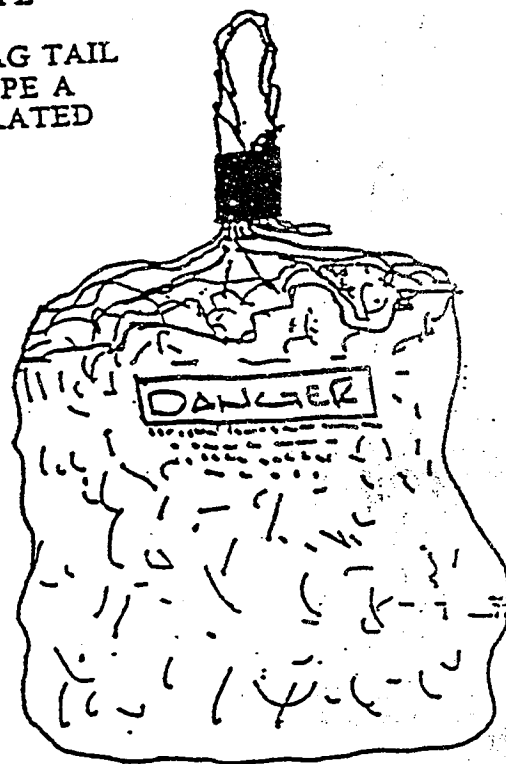
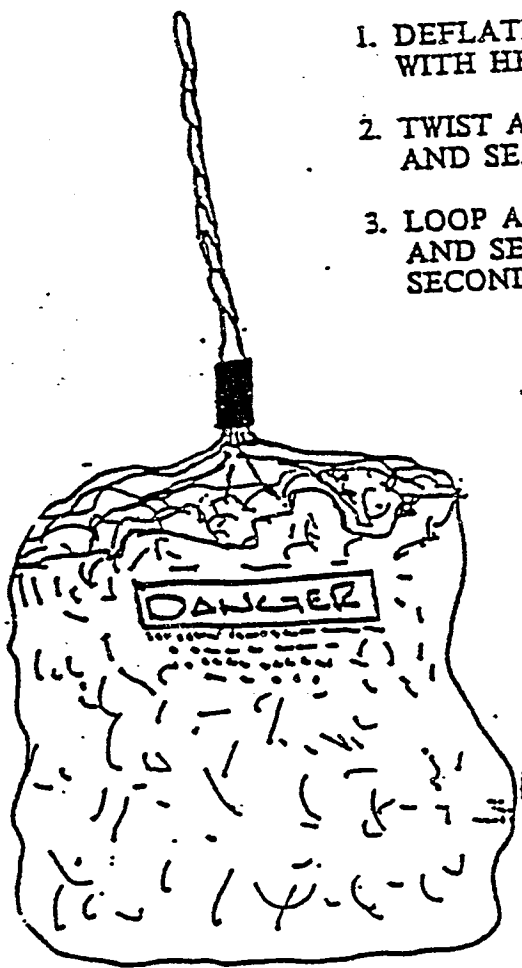


ASBESTOS  
 ABATEMENT PLAN

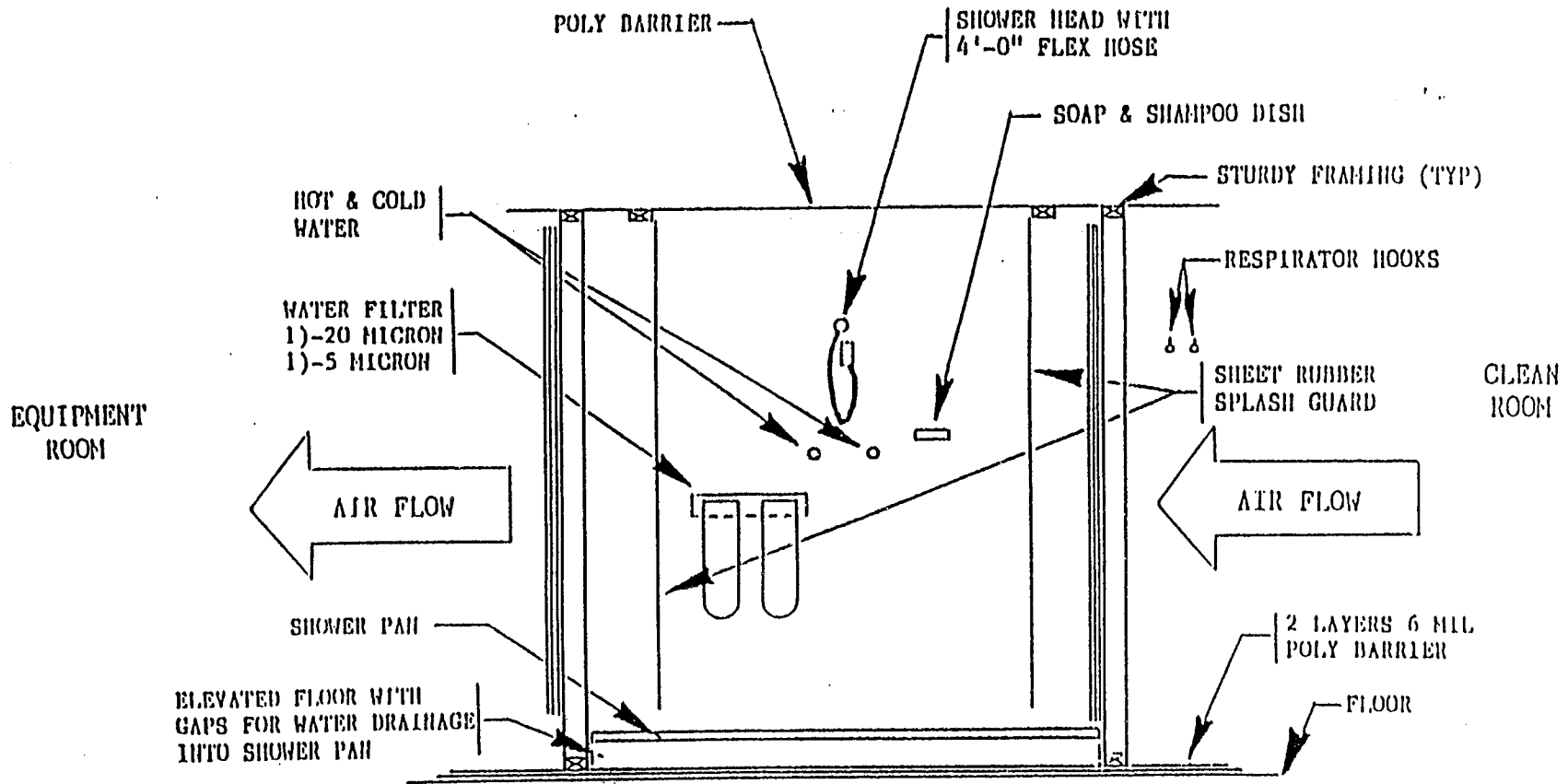
DATE: 12/19/18  
 JOB NO: 3672.07  
 DRAWN: L.KAPLAN  
 CHECKED: C.FARMER

# PROCEDURE FOR SEALING ASBESTOS WASTE DISPOSAL BAGS

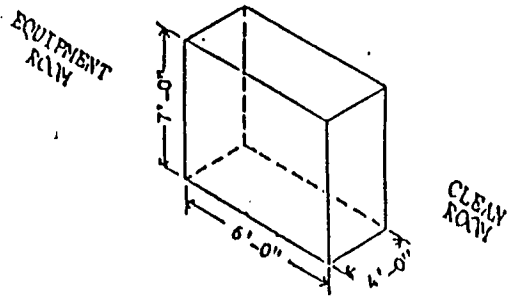
1. DEFLATE ASBESTOS WASTE BAG WITH HEPA VACUUM
2. TWIST ASBESTOS WASTE BAG TAIL AND SEAL WITH DUCT TAPE
3. LOOP ASBESTOS WASTE BAG TAIL AND SEAL WITH DUCT TAPE A SECOND TIME AS ILLUSTRATED



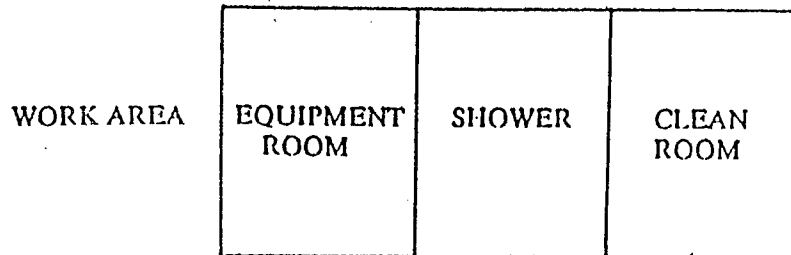
In addition to EPA and OSHA danger labels, each bag and drum shall be marked with the Department of Transportation designation OSM-E / NA-9188



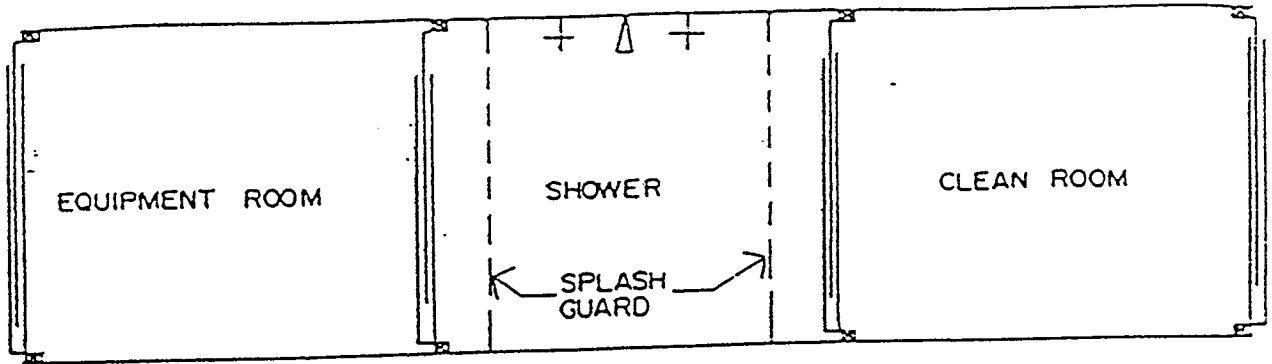
SHOWER ELEVATION



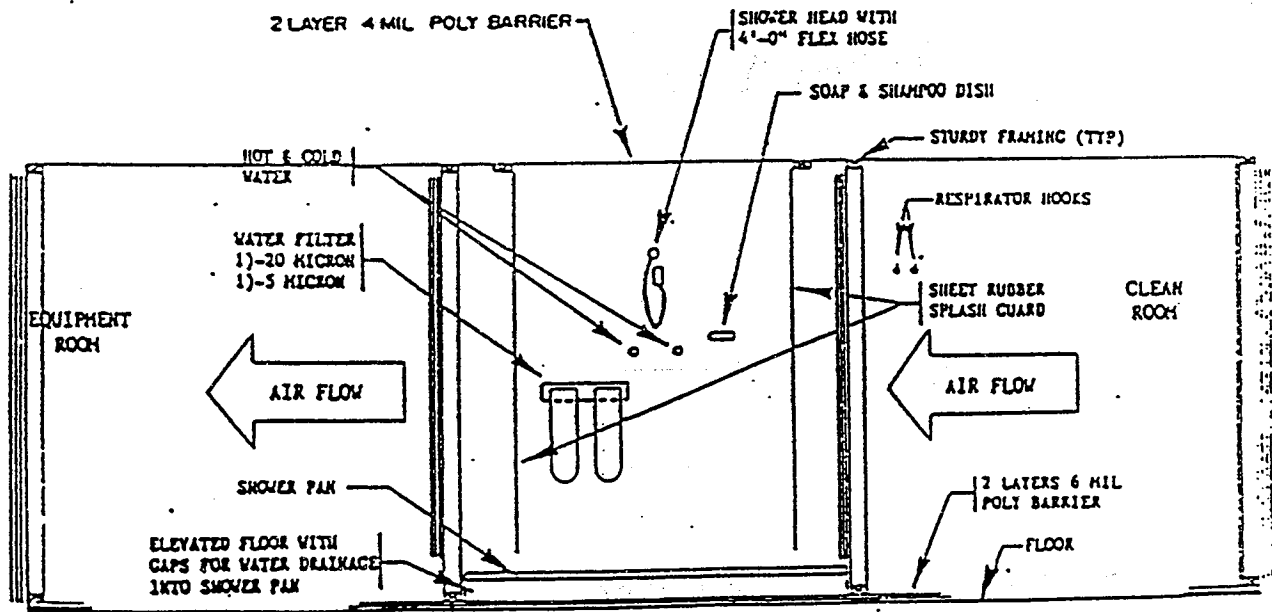
SHOWER DIMENSIONS



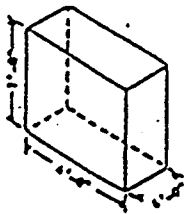
*[Handwritten Signature]*



SHOWER PLAN VIEW



SHOWER ELEVATION



SHOWER, EQUIPMENT, & CLEAN ROOM DIMENSIONS