

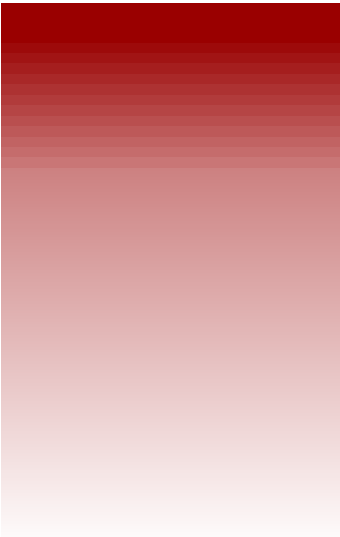


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SPECIFICATIONS FOR ASBESTOS ABATEMENT

Prepared for:
**City of Fort Worth Texas
Department of Environmental Management
1000 Throckmorton Street
Fort Worth, Texas**

Project:
**Police District #6
1100 Nashville Avenue
Fort Worth, Texas**

DATE: May 30, 2008

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Appendix A: Attachments

Appendix B: Specification Drawings

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PART 1 - GENERAL SECTION, ASBESTOS REMOVAL SPECIFICATIONS

1.1. SUMMARY OF THE WORK

1.1.1. CONTRACT DOCUMENTS AND RELATED REQUIREMENTS:

General provisions of the contract, including general and supplementary conditions, apply to the work of this section. The contract documents show the work of the contract and related requirements and conditions impacting the project. Related requirements and conditions include applicable codes and regulations, notices and permits, existing site conditions and restrictions on use of the site, requirements for partial owner occupancy during work, coordination with other work and phasing of work. Whenever there is a conflict or overlap of the above references, the more stringent provisions apply.

1.1.2. EXTENT OF WORK:

A brief summary of the extent of the work and non-binding to the contract documents is as follows:

BASE BID:

Removal and disposal of asbestos-containing materials (ACM) and asbestos-contaminated elements (ACE) utilizing wet methods within full, negative-pressure containments equipped with HEPA ventilation from specified areas of the building. The following asbestos-containing materials (ACM) will be removed at the property where applicable.

Material	Location	~Square feet of material
Roll on wall texture	Throughout the second floor office building	3,400 square feet
9" x 9" floor tile and mastic	First floor storage, captains office	300 square feet
Mastic under brown linoleum	First floor restroom and network room	100 square feet
Mastic under carpet	First floor, copy file and office area	1,200 square feet
Sheetrock joint compound	First floor west office area	3,550 square feet
TSI fittings	Police Barricade room in the basement and second floor water closet of office building	40 fittings
12" x 12" Marbled floor tile	Second floor	3,000 square feet

The Work Area will be inclusive of the locations and the quantities noted above, in the attached drawings, and as directed by a representative of IHST. The Work may be broken down into

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multiple Work Areas at the discretion of the Contractor. However, the Contractor will receive no additional time to perform the work on the basis of having multiple Work Areas and associated Cleaning Sequences.

The Contractor will be responsible for the removal and disposal of the asbestos-containing material and asbestos-contaminated materials in accordance with Texas Department of State Health Services (TDSHS), OSHA 29 CFR 1926.1101, Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations 40 CFR Part 61.

The CONTRACTOR shall be responsible for verifying existing site conditions and determining the quantity of ACM delineated for removal prior to abatement described in these specifications and associated drawings.

1.1.3. TASKS:

The work, located at the facility, is summarized briefly as follows:

The **PROJECT** requires the removal of the materials outlined in Section 1.1.2. The asbestos abatement will be performed in accordance with these specifications and procedures as outlined.

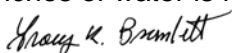
Asbestos Removal within full Containment: The Contractor will use wet methods for all removal operations. The Contractor is responsible for prompt clean-up and disposal of waste and debris contaminated with asbestos in leak tight containers. The Contractor will conduct a wet decontamination of equipment and tools before final clearance sampling in the work area.

The Contractor will use the existing interior walls and ceilings in the buildings to provide structural support for an asbestos containment work area provided the containment remains sound and is not in danger of collapse. The Contractor should make every effort not to damage the interior walls of the building during the project.

The Contractor will establish critical barriers over all openings into the work area. ACM debris should be adequately wetted prior to establishing perimeter critical barriers.

The Contractor will remove the asbestos-containing material from the work area.

The full containment design must be structurally sound so that it will not collapse under negative pressure and work conditions. **A structurally unsound containment design will not be accepted.** The full containment design will consist of one (1) layer of 6-mil polyethylene sheeting for all critical barriers, floors and walls. If the area can be isolated for the floor tile removal, a four foot splash guard may be used in lieu of a full containment if a pressure differential of -0.02 inches of water is maintained.



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Two layers of polyethylene sheeting will be required on walls and floors not affected by the abatement. Polyethylene sheeting shall meet the requirements in accordance with current TDSHS rules. The Contractor must establish negative air into the containment and maintain a pressure differential of -0.02 inches of water as indicated by a working manometer.

After the ACM has been removed and the work area cleaned, a detailed visual clearance inspection will be conducted to determine if ACM or asbestos-contaminated elements (ACE) remain prior to final clearance and work completion. OSHA personnel and area monitoring will be conducted with analysis by (PCM). Final air clearance sampling will be conducted utilizing PCM.

Respiratory protection will require half-face, air-purifying respirators (APR) with NIOSH-approved P-100 (HEPA) cartridges during removal.

The CONTRACTOR is responsible to verify site conditions and estimated quantities of ACM to be removed.

1.1.4. CONTRACTORS USE OF PREMISES:

Cooperate fully with the Owner's Representative to minimize conflicts and to facilitate Owner's safe and smooth usage of buildings. Perform the work in accordance with specifications, drawings, and phasing plan.

Use existing facilities in building strictly within the limits shown in contract documents and the approved pre-abatement plan of action. Several of the structures have asbestos containing materials in the flashing around roof penetrations. The Contractor will not be required to remove the flashing on the structures.

1.2. DIFFERING SITE CONDITIONS:

The quantities and location of ACM indicated on the drawings and the extent of work included in this section are only best estimates which can be limited by the physical constraints imposed by structural enclosures or by occupancy of the building. **The CONTRACTOR is responsible to verify site conditions and estimated quantities of ACM to be removed and determining the quantity of ACM delineated for removal prior to abatement described in these specifications and associated drawings. The Contractor by placing a bid for this project agrees with all quantity estimates and their bid reflects their price to remove all of the material at all of the structures as identified in these specifications.**

1.3. STOP ASBESTOS REMOVAL:

If the Owner's Representative presents a written Stop Asbestos Removal Order, immediately stop all asbestos removal and initiate fiber reduction activities. Do not resume asbestos removal until authorized *in writing* by Owner's Representative. A Stop Asbestos Removal Order will be issued at any time the Owner or Owner's Representative determines abatement conditions are

not within specifications requirements. Stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at Contractor's expense. The occurrence of the following events will be reported in writing to the Owner's Representative and

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will require the Contractor to automatically stop asbestos removal and initiate fiber reduction activities:

- A. Excessive airborne fibers outside containment area (0.01 f/cc or greater).
- B. Break in containment barriers.
- C. Loss of negative air pressure (at or above 0.01 inches of water)
- D. Serious injury within the containment area.
- E. Fire and safety emergency
- F. Respiratory system failure.
- G. Power failure.
- H. Excessive airborne fibers inside containment area (0.1 f/cc or greater when wet methods are employed).

1.4. CODES AND REGULATIONS:

1.4.1. GENERAL APPLICABILITY OF CODES, REGULATIONS AND STANDARDS:

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

1.4.2. CONTRACTOR RESPONSIBILITY:

The Asbestos Abatement Contractor will assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations pertaining to work practices, hauling and disposal of ACM and ACE, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations. Contractor will hold the Owner and Consultants harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other on the part of himself, his employees, or his subcontractors. Contractor incurs all costs to comply with OSHA regulations.

The Abatement Contractor will determine the applicability of any process patents he/she may be employing and be responsible for paying any fees, royalties or licenses that may be required for the use of patented processes.

1.4.3. STATE REQUIREMENTS:

State requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

Texas Department of State Health Services, Texas Asbestos Health Protection Act, as amended, Chapter 1954, Texas Occupations Code, effective June 1, 2003, formerly Texas Civil Statutes, Article 4477-3a.

1.4.4. LOCAL REQUIREMENTS:

The Contractor is responsible to comply with all applicable local requirements regarding asbestos abatement activities.

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1.4.5. NOTICES:

STATE OF TEXAS, TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Send Written Notification as required by the State of Texas, Texas Asbestos Health Protection Act, as amended, Chapter 1954, Texas Occupations Code, effective June 1, 2003, formerly Texas Civil Statutes, Article 4477-3a. Send at least 10 working days prior to asbestos abatement activities to the following address:

Texas Department of State Health Services
Toxic Substances Control Division
Asbestos Programs Branch
P.O. Box 143538
Austin, Texas 78714-3538
512-834-6600 or 1-800-572-5548

The notifications must be completely filled out. In the event that a section is not applicable to the project, the section must be marked as not applicable.

Copies of the Texas Department of State Health Services and other notifications will be submitted to the Owner for the facility's records in the same time frame that notification is given to EPA, state, and local authorities. In the event of a change in the starting date the Contractor will notify regulatory agencies in accordance with the Texas Department of State Health Services (Texas Civil Statutes, Article 4477-3a, Section 12) asbestos regulations.

1.4.6. PERMITS:

The Contractor will be responsible for any permits.

1.4.7. LICENSES:

Maintain current licenses as required by the Texas Department of State Health Services Rules as adopted under Texas Civil Statutes, Article 4477-3a, Section 12 for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.4.8. POSTING AND FILING OF REGULATIONS:

Maintain two (2) copies of applicable federal, state and location regulations. Post one copy of each at the job site where workers will have ready, easy and daily exposure to the text. Keep on file in Contractor's office one copy of each.

1.5. PROJECT COORDINATION:

Minimum administrative and supervisory requirements necessary for coordination of work on the project are personnel, contingency arrangements and security.

1.5.1. PERSONNEL:

Administrative and Supervisory Personnel: will consist of a qualified general superintendent, and appropriate number of qualified or competent foremen to complete abatement within contract time.

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Non-Supervisory Personnel: An adequate number of qualified personnel will be able to meet the schedule requirements of the project.

1.6. RESPIRATORY PROTECTION:

1.6.1. GENERAL:

Provide respiratory protection in accordance with these specifications, the OSHA regulations 29 CFR 1910.1001, 29 CFR 1910.134 and 29 CFR 1926.1101, EPA regulations 40 CFR 763.120, 121, ANSI standards Z88.2-1980, CGS Pamphlet G-7 and specification G-7.1, the NIOSH and MSHA standards and the Texas Department of State Health Services Protection Rules. In case of conflict, the most stringent requirements are applicable for this project.

1.6.2. RESPIRATORS FOR ABATEMENT OPERATIONS:

Where a person is or could reasonably be expected to be exposed during abatement operations to airborne asbestos above 0.1 f/cc or where ACM debris is visible, the following maximum level of respiratory protection is required:

If it is reasonably anticipated that fiber counts generated during abatement will not exceed the protection factor of a half-face respirator, and this can be verified by on-site fiber counts, a half-face respirator may be used. If verification cannot be made, a full face PAPR must be used. PAPR must be used for friable surfacing or thermal system insulation removal until fiber counts are confirmed consistently below the PEL and STEL.

Head coverings: PAPR respirators will be equipped with full facepieces. Full facepieces will be worn with either a bonnet-type disposable head cover/hood or with a full head cover/hood which is part of a fully encapsulating protective garment. Respirator straps will be located under the hoods. This allows removal of the head covering prior to showering without disturbing the respirator (which is worn into the shower).

Exemptions from maximum respiratory protection during abatement operations: When the abatement contractor has demonstrated to the Owner's satisfaction that levels of airborne asbestos fibers in the work area are consistently below 0.1 f/cc, a full facepiece or half face respirator with HEPA cartridges may be used. The Certified Industrial Hygienist will determine if a lesser form of respiratory protection may be used.

1.7. WORKER PROTECTION:

1.7.1. TRAINING PRIOR TO ENGAGING IN ABATEMENT WORK:

Train workers in accordance with OSHA 29 CFR 1926.1101 and the Texas Asbestos Health Protection Rules and this section. Workers will be trained and be knowledgeable on the following topics: Methods of recognizing ACM; health effects of asbestos exposure; effects of smoking and asbestos exposure; activities that could result in hazardous exposures; protective controls, practices and procedures to minimize exposure including engineering controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures and waste transportation and disposal; review OSHA

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29 CFR 1910.134 for respirators; medical surveillance program; review OSHA 29 CFR 1926.1101, and for air monitoring, personnel and area; review this section of the project specifications.

1.7.2. MEDICAL EXAMINATIONS:

Provide medical examinations for all workers and any other employee entering the work area per OSHA 29 CFR 1926.1101 regardless of exposure levels.

1.7.3. PROTECTIVE CLOTHING:

Provide boots, safety glasses and gloves for all workers. Equipment will meet OSHA requirements for personal protection. Provide all persons entering the work area with disposable full body coveralls, disposable head covers and rubber boots.

1.7.4. ENTERING AND EXITING PROCEDURES:

Provide worker protection per most stringent applicable requirements. Provide as a minimum the following:

Ensure that each time workers enter the work area, they remove all street clothes in the changing room of the personnel decontamination unit and put on new disposable coveralls, new head covers, and clean respirators, then proceed through shower room to equipment room, and put on work boots.

1.7.5. DECONTAMINATION PROCEDURES:

Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area of a full decontamination unit:

Three-stage Wet Decontamination:

Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area:

1. When exiting work area, remove disposable coveralls, and all other clothes disposable head covers, and disposable footwear covers or boots in the equipment room.
2. Still wearing respirators, and completely naked proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - a. Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep canisters dry.
 - b. With respirator still in place thoroughly wash body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to clean seal between face and respirator and under straps.
 - c. Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.
3. Carefully wash facepiece of respirator inside and out. If using PAPR, shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this se-

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quence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.

4. Shower completely with soap and water. Rinse thoroughly.
5. Rinse shower room walls and floor prior to exit.
6. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

Air Purifying-Negative Pressure Respirators:

Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area with a full face cartridge type respirator:

1. When exiting area, remove disposable coveralls, and all other clothes disposable head-covers, and disposable footwear covers or boots in the equipment room.
2. Still wearing respirators and completely naked, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos filters while showering. The following procedure is required as a minimum:
 - a. Thoroughly wet body from neck down.
Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.
 - b. Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breath.
3. Dispose of wet filters from air purifying respirator.
4. Carefully wash facepiece of respirator inside and out.
5. Shower completely with soap and water. Rinse thoroughly.
6. Rinse shower room walls and floor prior to exit.
7. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

1.7.6. LIMITATIONS WITHIN WORK AREA:

Ensure that workers do not eat, drink, smoke, chew gum or tobacco, or in any way break the protection of the respiratory protection system in the work area.

1.8. DECONTAMINATION FACILITIES:

1.8.1. DESCRIPTION:

Provide each work area with separate personnel decontamination facility (PDF) and equipment decontamination facility (EDF). Ensure that the PDF is the only means of ingress and egress for the work area and that all equipment, bagged waste material and other material exit the work area only through the EDF or the PDF.

1.8.2. GENERAL REQUIREMENTS:

All persons entering and exiting the work area will follow the entry and exit procedures required by the applicable regulations and these specifications. Process all equipment and material exiting the work area through the EDF or PDF and decontaminate as required by the specifications.

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Construct walls and ceilings of PDF and EDF airtight with at least 6 mil polyethylene sheeting and attach to existing building components or to a temporary framework. The EDF and PDF may be combined if the size of the work area will not permit both.

Use a minimum of two layers of 6-mil opaque polyethylene to cover floor under PDF. Construct doors from overlapping polyethylene sheets so that they overlap adjacent surfaces. Weight sheets at bottom so that they quickly close after release. Put arrows on sheets showing direction of overlap and travel.

1.8.3. TEMPORARY UTILITIES TO PDF AND EDF:

Provide temporary water service connection to the PDF and the EDF. Provide backflow protection at the point of connection to the Owner's system.

Water supply must be properly pressured and temperature balanced at shower discharge. Provide adequate temporary electric power with ground fault protection and overhead wiring throughout the PDF and the EDF. Provide a sub-panel for all temporary power in changing room.

Provide adequate lighting to reach 50 foot candles throughout PDF and EDF.

Provide temporary heat to maintain 70°F throughout the PDF and EDF except that the shower of the PDF will be maintained at 75°F.

1.8.4. DECONTAMINATION FACILITIES (DF):

Provide a PDF consisting of serial arrangement of clean room, showers room and equipment room. Provide adequately sized DF to accommodate the number of employees scheduled for the project. The center chamber of the three chamber DF will be fitted with as many portable walk through shower stalls as necessary so that all employees will be able to go through the entire decontamination procedure within 15 minutes. Construct DF of opaque or colored polyethylene for privacy. Construct DF so that it will not allow for parallel routes of exit without showering.

1.9. NEGATIVE PRESSURE FILTRATION SYSTEMS:

The Asbestos Abatement Contractor will provide enough HEPA-filtered negative air units to completely exchange the work air four (4) times per hour. Contractor will demonstrate the number of units needed per work area for 4 room air changes by calculating the volume flow rate (cfm) delivered by each unit under 2" pressure drop across filters. Provide at least one standby unit in the event of a machine failure or emergency such as contamination in surrounding non-work area. When a pressure differential system is selected provide enough HEPA filtration units to filter and recirculate the air in the work area at a rate of four (4) room air changes per hour.

1.9.2. PRESSURE DIFFERENTIAL:

Provide a fully operational negative air system within the work area continuously maintaining a pressure differential across work area enclosures of -0.02 inches of water. Demonstrate to the Owner's Representative the pressure differential by use of a pressure differential meter or a

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manometer, before disturbance of any asbestos containing materials. This pressure differential will be used for either negative air system or pressure differential system.

1.9.3. MONITORING:

Continuously monitor and record the pressure differential between the work area and the building outside of the work area with a monitoring device incorporating a strip chart recorder. Make the strip chart record part of the project log.

1.9.4. TESTING THE SYSTEM:

Test negative-pressure system before any ACM is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of negative-pressure system to the Owner's Representative.

1.9.5. DEMONSTRATION OF NEGATIVE AIR SYSTEM OPERATION:

Demonstrate the operation of the negative-pressure system to the Owner's Representative to include, but not be limited to, the following:

1. Demonstrate pressure differential system will maintain -0.02" of water.
2. Emergency shutoff will operate in case of fire.

1.9.6. USE OF SYSTEM DURING ABATEMENT OPERATIONS:

Start exhaust units before beginning work (before any ACM is disturbed). After abatement work has begun, run units continuously to maintain a constant negative-pressure until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

Do not shut down negative air system during abatement operations procedures, unless authorized by the Owner's Representative *in writing*. The systems may be shut down daily if air monitoring in the containment shows airborne levels of less than 0.01 fibers/cc.

Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all removal work and do not resume until power is restored and all exhaust units are operating again.

At completion of abatement work, allow exhaust units to run as specified under this section, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. Units may be required to run after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

1.9.7. DISMANTLING THE SYSTEM:

When a final inspection and the results of the final air tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filters, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the pre-filters.

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1.10. CONTAINMENT BARRIERS AND COVERINGS OF WORK AREA:

1.10.1. GENERAL:

Seal off perimeter of work area to completely isolate abatement areas and to contain all airborne asbestos contamination created by abatement work. Cover all surfaces of the work area to protect them from cross contamination, to facilitate more efficient cleanup, and to protect the finishes from the asbestos abatement work. Should the area beyond the seal off limits become contaminated as a consequence of the work, clean those areas in accordance with procedures described in this section at no additional cost.

1.10.2. PREPARATION PRIOR TO SEALING OFF:

Place all tools, staging, etc. necessary for the work in the area to be isolated prior to erection of temporary plastic sheeting enclosure. Disable ventilating systems or any other system bringing air into or out of the work area. Disable system utilizing positive means that will prevent accidental premature restarting of equipment, i.e., disconnecting wires, removing circuit breakers, lockable switch, etc.

1.10.3. CONTROL ACCESS TO WORK AREA:

Permit access to the work area only through the DF. All other means of access will be closed off and sealed and warning signs displayed on the clean side of the sealed access. Where the work area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6-mil in thickness so that the work procedures are not visible to building occupants. Where the area adjacent to the work area is accessible to the public, construct a barrier of plywood or other suitable material at least eight feet (8') in height that is able to withstand the negative pressure as specified.

Post warning signs at each visual and physical barrier per OSHA requirements. Alternate method of containing the work area or different definition of the limits of seal-off from the one shown on the drawings may be submitted to the Owner's Representative for approval in accordance with this section. Do not proceed with any such alternatives without prior written approval by the Owner's.

1.10.4. CRITICAL BARRIERS:

Completely separate the work area from other portions of the building, and the outside by sheet polyethylene barriers at least 6 mil in thickness and sealing with duct tape. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, doorways, windows, and other openings into the work area with duct tape alone and with polyethylene sheeting at least 6-mil in thickness, taped securely in place with duct tape. Maintain seal until all work including project decontamination is completed. Take care in sealing off lighting fixtures to avoid melting or burning of sheeting. Provide sheet plastic barriers at least 6-mil in thickness as required to completely seal openings from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

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1.10.5. PRIMARY BARRIERS:

The primary barrier of the full containment walls will consist of a minimum of Primary barriers for full containment shall consist of two (2) layers of minimum 4-mil polyethylene sheeting for the walls securely anchored from the floors to the ceiling. The containment for the removal of the linoleum flooring will require a minimum 4-mil polyethylene sheeting for the ceiling. Polyethylene sheeting shall meet ASTM requirements in accordance with TDSHS regulations. Visible openings observed along the perimeter walls and the ceiling shall be completely sealed polyethylene sheeting and the wall corners of the containment should be attached with an overlap of at least twelve inches. The primary barrier construction should form an airtight, impermeable, permanent barrier around the ACM and ACM debris to contain the release of asbestos fibers into the air.

1.10.6. EXTENSION OF WORK AREA:

If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then where possible, add affected area to the work area. Enclose it as required by this Section of the specification and decontaminate it as described elsewhere in this section. If contaminated area cannot be added to work area, decontamination measures will start immediately after contamination is discovered and work will stop in work area. Decontamination procedures will continue until exposure returns to background levels.

1.10.7. SECONDARY BARRIERS:

Secondary barriers should be established in areas to separate any non-related work activity from the abatement containment to prevent dust or debris from potentially contaminating fresh air (make-up air) into the containment or regulated asbestos removal area.

1.11. MONITORING, INSPECTION AND TESTING:

1.11.1. GENERAL:

Perform throughout abatement work monitoring, inspection and testing inside the work area in accordance with OSHA requirements and these specifications. I.H. Technician will continuously inspect and monitor conditions inside the work area to ensure compliance with these specifications. In addition, the I.H. will personally manage air sample collection, analysis and evaluation for personnel and work area samples to satisfy OSHA requirements. Additional inspection and testing requirements are specified in other parts of this section.

The Owner will employ a Certified Industrial Hygienist (C.I.H.) representative to perform various services on behalf of the Owner. The C.I.H. representative or representative under the direction of a C.I.H. will perform the necessary monitoring, inspection, testing and other support services to ensure that the Owner, employees and visitors will not be adversely impacted by the abatement worked, and that the abatement work proceeds in accordance with these specifications, that the abated areas or abated buildings have been successfully decontaminated. The work of the C.I.H. representative in no way relieves the abatement Contractor from his responsibility to perform his work in accordance with contract documents, to perform continuous inspection, monitoring and testing for the safety of his employees, and to perform other such services as specified in this section. The cost of the CIH representative and his services will be born by the Owner except for repeated final inspection and testing that may be required due to unsatisfac-

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tory initial results. These repeated final inspections and testing, if required, will be paid for by the Contractor.

The Asbestos Abatement Contractor may request confirmation of above results. This request must be in writing and submitted to the Owner's Representative. Cost for the confirmation of results will be born by the Contractor for both the collection and analysis of samples and for the time delay that may result for this confirmation. Confirmation sampling and analysis will be the responsibility of the Contractor with review and approval by the C.I.H.

1.11.2. OUTLINE SCOPE OF SERVICES OF THE OWNER'S CONSULTANT:

The purpose of the work of the Owner's Representative is to: assure quality, resolve problems, and prevent the spread of contamination beyond the work area. In addition, the consultants work include performance of final inspection and testing to determine whether a space or a building has been adequately decontaminated. All air monitoring is to be done utilizing PCM sampling procedures with final clearance to be performed by TEM. The Owner's Representative will perform the following tasks:

- TASK 1: Establish background levels before abatement work will start. This will include taking background samples (at least 3) and retaining samples for possible TEM analysis.
- TASK 2: Perform continuous air monitoring, inspection and testing outside the work area during actual abatement work area. In addition, the Owner's Representative will be required to detect any faults in the work area isolation and any adverse impact of surroundings from work area activities.
- TASK 3: Perform unannounced site visits to spot check overall compliance of work with contract documents. These visits may include any inspection, monitoring and testing inside and outside the work area and all aspects of operation except personnel monitoring.
- TASK 4: Provide support to the Owner such as evaluation of submittals from the abatement contractor, resolution of unforeseen developments in abatement work, etc.
- TASK 5: Perform final inspection and testing of a decontaminated area or building at the conclusion of the abatement and cleanup work to certify compliance with Owner's decontamination standards.
- TASK 6: Issue certificate of decontamination for each area or building and a final project report.
- TASK 7: The Owner's Representative will have authority to require building materials to be removed and disposed of as ACM waste where visible ACM debris is present.

All data, inspection results and testing results generated by the Owner's Representative will be available to the Contractor for information and consideration. Contractor will provide cooperation and support to the Owner's Representative for efficient and smooth performance of their work.

Monitoring and inspection results of the Owner's Representative will be used by the Owner to issue any Stop Asbestos Removal Orders to the contractor during abatement work and to accept or reject an area or a building as decontaminated. The Owner's Representative will make available to the Contractor the plan for sample collection and analysis for continuous monitoring

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outside the work areas and the plan of final inspection and testing for each space or building prior to executing each plan. Plan will include location for samples, name and qualification of person taking samples, whether on site analysis and/or lab analysis will be utilized, methodology of analysis, lab information and qualifications of on-site analyst.

1.11.3. MONITORING, INSPECTION AND TESTING BY ABATEMENT CONTRACTOR:

The Contractor is responsible for managing all monitoring, inspection and testing required by these specifications and the OSHA requirements.

The analytical laboratory that will be used by the Contractor to analyze the samples will be AIHA P.A.T. Accredited and Texas Department of State Health Services Licensed. Keep a daily log of personnel samples taken and analyzed and make log available to the Owner's Representative. Log will contain information on the persons sampled, the date of sample collection the time of sample start and finish, flow rate, sample volume and fibers/cc. Take and analyze personnel samples for at least 25% of the workers in each shift, but not less than two where active abatement takes place.

1.11.4. ANALYSIS:

Bulk samples (if required) will be analyzed at a laboratory that is Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Proof of accreditation must be submitted prior to the project start date. Polarized light microscopy will be used to analyze bulk samples.

Air samples will be analyzed by an individual participating in the American Industrial Hygiene Association's (AIHA) Proficiency Analytical Testing Program.

In addition to the continuous monitoring required, the Owner's Representative will perform inspection and testing at the final stages of abatement for each work area or building as specified elsewhere in this section.

1.12.5. SUBMITTALS AT COMPLETION OF ABATEMENT:

The Contractor will submit a final project report consisting of the daily log book and the documentation of events during abatement including the original disposal manifests signed by the operator of licensed landfill. The project report will include a certificate of completion, dated and signed by the Contractor. All certificates and original disposal manifests are due to the Owner's Representative office within 30 (thirty) days after completion of abatement work.

PART 2 - EXECUTION

2.1. PREABATEMENT ACTIVITIES:

2.1.1. PREABATEMENT MEETING:

The Owner's Representative, upon receipt, review and substantial approval of all preabatement submittals and upon verification that all material and equipment required for the project are on site, will arrange for a preabatement meeting between the Asbestos Abatement Contractor, superintendent and foremen and the Owner's Representatives. The purpose of the meeting is discuss any aspects of the submittals needing clarification or amplification and to discuss any aspects of the project execution and the sequence of operations.

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The Asbestos Abatement Contractor and his employees will be prepared to provide any supplemental evidence and information to the Owner's Representative pertaining to any aspects of the submittals or the materials and equipment. No abatement work of any kind described in the following provisions of these specifications will be initiated prior to the preabatement meeting.

2.1.2. PREABATEMENT INSPECTION AND PREPARATIONS:

Before any work begins on the containment barriers, the contractor will:

1. Conduct a space-by-space inspection with an authorized Owner's Representative, and prepare a written inventory of all existing damage in those spaces where asbestos removal work will occur. Still or video photography may be used to supplement this written damage inventory. Documents will be signed and certified as accurate by both parties.
2. Ensure that all furniture, machinery, equipment, curtains drapes, blinds and other movable objects which the contractor is bound to remove from the work area have been removed or protected.
3. Notify the Owner's Representative of systems that need to be shut down as soon as practical in advance. The Owner's Representative will coordinate shutdown with Contractor and Owner's Facility Representative. The Owner's Facility Representative will perform and monitor shutdown as required by Contractor.
 - a. Shutdown and seal off all heating, cooling, ventilating or other air handling systems serving the work area. The environment of the work area will be completely isolated from all other air flows in the building. Owner's Representative will monitor shutdown.
 - b. Shut down all electrical circuits which pose a potential hazard on the job. Exact electrical arrangements will be tailored to the particular space and systems involved. All electrical circuits will be turned off at the box outside the removal area, not just the wall switch. Potential for electrical shock is a major threat to life in a work area where large amounts of water will be sprayed on ceilings, conduits, lighting fixtures and other electrical items. Electrical lines which are used to power work lights and equipment will conform to all electrical safety standards and will be protected by a ground fault interrupter. The Asbestos Abatement Contractor will be responsible for all OSHA lockout/tagout requirements. A copy of the Asbestos Abatement Contractor's lockout/tagout program must be submitted for review prior to asbestos abatement operations.

2.1.3. PREABATEMENT CONSTRUCTION AND OPERATIONS:

Perform all preparatory work for the first work area in accordance with the approved detailed work schedule. Execute the preparatory work in accordance with this specification.

Upon completion of all preparatory work, the Owner's Representative will inspect the work and systems to assure work is in accordance with these Specifications. The Owner's Representative may require that, upon satisfactory inspection, the Contractor's employees perform all major aspects of the approved SOP especially on worker protection, respiratory protection, contingency plans, decontamination procedures and monitoring to demonstrate satisfactory operation. The operating systems for respiratory protection and negative pressure air systems will be demonstrated for performance.

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Upon satisfactory inspection of the installation and systems and satisfactory demonstration of operations the Owner's Representative will notify the Contractor to proceed with abatement work.

2.2. REMOVAL OF ACM AND ACE:

2.2.1. WETTING MATERIALS:

The Asbestos Abatement Contractor will adequately wet and remove all ACM as follows:

1. Spray wetting agent on the asbestos containing materials.
2. After wetting and removal, seal all ACM waste in leaktight two layers of 6-mil polyethylene while wet. For waste material not fitting into containers without additional breaking, put material into leaktight wrapping.
3. Label containers and wrapped material using warning labels as specified by OSHA 29 CFR 1910.1001 or 1926.1101 and the NESHAPS regulations.
4. For ACM being transported off the facility site, label ACM waste containers and wrapped material with the name of the waste generator and the location where the waste was generated.

2.2.2. SITE PREPARATION:

Erect critical barriers at all doors and windows entering the regulated areas. This project will be conducted by establishing critical barriers over all openings into the work area. A three stage wet decontamination unit will be erected for worker entrance and exit into the work area. The Contractor must establish negative air in the containment and maintain a pressure differential of -0.02 inches of water column pressure differential.

2.2.3. PERSONAL PROTECTION:

One (1) layer of disposable clothing air-purifying respirators (PAPR) with NIOSH-approved HEPA cartridges shall be worn by all personnel during removal of the asbestos-containing thermal system insulation.

Provide boots, safety glasses and gloves for all workers. Equipment will meet OSHA requirements for personal protection. Provide all persons entering the work area with disposable full body coveralls, disposable head covers and rubber boots.

2.2.4. FLOOR TILE AND MASTIC:

Those areas normally exposed to heavy foot traffic patterns usually have tiles adhered the tightest. As a matter of good practice in starting the tile removal, those sections which receive the least traffic should be the locations selected for starting the removal of the tile. Since tiles are normally in a 9" x 9" or 12" x 12" dimension, it should be the goal to remove individual tiles as a complete unit to the best extent possible.

Start the removal by carefully wedging the wall scraper in the seam of two adjoining tiles and gradually forcing the edge of one of the tiles up and away from the floor. Do not break off pieces of the tile but continue to force the balance of the tile up by working the scraper beneath the tile and exerting both a forward pressure and a twisting action on the blade to promote release of the tile from the adhesive and the floor.

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When the first tile is removed, place it, without breaking into smaller pieces, in the heavy-duty impermeable waste bag or closed impermeable container which will be used for disposal.

With the removal of the first tile accessibility of the other tiles is improved. Force the wall scraper under the exposed edge of another tile and continue to exert a prying twisting force to the scraper as it is moved under the tile until the tile released from the floor. Again, dispose of the tile, and succeeding tiles, by placing in the heavy-duty bag or closed container without additional breaking.

Some tiles will release quite easily while others require varying degrees of force. Where the adhesive is spread heavily or is quite hard, it may prove easier to force the scraper through the tightly adhered areas by striking the scraper handle with a hammer using blows of moderate force while maintaining the scraper at a 25° to 30° angle to the floor. **Caution:** Use safety goggles.

If some areas are encountered where even the technique detailed in the previous paragraph proves to be inadequate, the removal procedure can be simplified by thoroughly heating the tile(s) with a hot air blower until the heat penetrates through the tile and softens the adhesive.

Note 1: Handle the hot air blower, tiles, and adhesive carefully to avoid personal burns.

Note 2: Do not handle the heated tiles and adhesive without suitable glove protection for the hands.

As small areas of subfloor are cleared of tile, the adhesive remaining on the floor must be scraped up with the 4" hand scraper until only a thin, smooth film remains. In those area where deposits are heavy or difficult to scrape, the removal can be expedited by heating with the hot air blower prior to scraping. Deposit scrapings in a heavy-duty impermeable trash bag or closed impermeable container. Thoroughly spread approved mastic biodegradable cleaner/solvent onto all mastic with a garden sprayer (Note The solvent used to remove the mastic must have a flash point of >140 degrees F. Submittals for the solvent must include a Material Safety Data Sheet. Let the solution stand for at least 15 minutes. Use an industrial buffer with coarse pads to dislodge the material or a squeegee. Squeegee, or use scrapers to push material into a central location for final mopping and cleanup. Hand-scraping may be done at the Contractor's option, or as required to completely remove all material.

As indicated in previous paragraphs, tiles should be placed immediately in a waste disposal bag or closed impermeable container. Do not attempt to break tiles after they are in the bag.

When all tiles, mastic and sorbent material have been removed from the floor and placed in polyethylene waste bags at least 6-mil thick or closed containers, seal the bags securely for disposal.

"Shot blaster" or "bead blaster" machines will not be allowed to remove the floor tile and mastic.

Alternate removal techniques may be used if approved by the CIH.

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2.2.5 WALL AND CEILING TEXTURE

The asbestos texture will be kept wet and removed by wet scraping or as intact sheetrock and ceiling tile sections utilizing hand tools and a low water volume, short distance power diffusing "Airless" sprayer. The asbestos plaster texture and texture on CMU block will be kept wet and removed utilizing hand tools and a low water volume, short distance power diffusing "Airless" sprayer.

The minimum crew size for the operation is three: one member performs the actual removal, the second directs the spray wand at the work and the third worker collects and contains the wet ACM debris generated during the work. It is recommended that four workers be utilized in the procedure. The fourth person provides support during the work, making sure tools and supplies are readily available, and is on hand in case of emergency. All crew members should be trained in the use of the wet scraping procedure.

The Contractor will erect critical barriers and establish negative air filtration. Rope off work area and place warning signs. Bring the necessary materials into the work area. Have a HEPA vacuum system available at all times. The HEPA vacuum will be used to remove debris which may settle in remote areas such as corners, cracks or crevices in the work area.

Make sure visible ACM debris and dust in the area have been wetted with amended water and cleaned with the proper methods before beginning the procedure to avoid confusion concerning the source of the material.

Cover floor with a minimum of two layers of 6 mil plastic sheeting if flooring is not being removed, and cover wall surfaces with a minimum of two layers of 4 mil plastic sheeting. The top polyethylene sheeting layer may be removed as part of the detail cleaning process after gross removal.

Hard hats, disposable clothing and full-face PAPR respirators will be worn by all persons performing the ACM removal.

Establish negative air filtration in the containment before any removal operations take place.

The containment may be smoke tested to assure the negative pressure inside the containment is adequately sealed. Assemble the smoke tube and bulb. Generate short bursts of smoke in the containment particularly at seams, joints and corners and critical barriers. Observe the direction of the smoke trail. Watch for leaks, and seal any leaks with duct tape.

Wet the plaster and surfacing material adequately to suppress any generation of airborne dust or debris, keeping it wet throughout the entire operation.

As sections of ACM are removed, keep the material wet and shovel debris carefully into the bottom of a disposal bag.

Wipe all cleaned surfaces with a wet rag and put the rag in the bottom of a 6 mil disposal bag.

Rinse and wipe the inside of the disposal bag.

Clean up any debris or water on the floor with wet rags and/or the HEPA vacuum.

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As in any asbestos related project, the work area should be kept free of debris. Any contamination should be cleaned up immediately. When the work day is complete, (or as soon as the project is complete) the work area should be cleaned using wet methods and a HEPA vacuum.

All asbestos material and associated debris should be removed and placed in double layer 6 mil asbestos disposal bags before the end of the work day. Dispose of waste in accordance with regulations for asbestos waste found in these specifications.

Workers should pass through a complete three-stage wet decontamination facility prior to exiting the building.

If a disposal bag develops a leak, stop work inside the containment. Catch the water in a plastic disposal bag. Lift and move the bag so that water stops running out. Do not "pump" the bag in a way that would force air out. Twist the bag in the area of the puncture to form a stem, dry the surface and tape it securely closed. Clean up the contaminated water and debris from the floor immediately using wet methods and the HEPA vacuum. Dispose of the waste properly.

2.3. DISPOSAL OF ACM AND ACE WASTE MATERIAL:

2.3.1. GENERAL:

The Asbestos Abatement Contractor will dispose of friable ACM and debris which is packaged in accordance with these specifications at the approved landfill. Dispose of non-friable ACM in accordance with the applicable regulations for friable asbestos. The transporter must be licensed in accordance with the Texas Department of State Health Services Asbestos Rules and Regulations. The truck transporting the waste must have the following noted on the shipping papers, manifests and trucks:

Hazardous Material Proper Shipping Name: hazardous substance solid, N.O.S.

DOT Hazard Class: Class 9 PG. III

Identification Number: NA 2212 (friable waste)

Reportable Quantity: RQ

Name and Address of Generator

2.3.2. PROCEDURES:

Carefully load containerized waste on sealed trucks for transport. Ensure that unauthorized persons do not have access to the material outside of the work area. Take bags from the work area directly through the EDF process to a sealed truck. Double bagged material may be transported in open trucks only if they are first loaded in sealed drums. Label drums with same warning labels as bags. Dispose drums as contaminated, do not attempt to empty them for reuse.

Advise the sanitary landfill operator, at least twenty-four hours in advance of transport, of the quantity of material to be delivered. At the burial site, sealed plastic bags may be carefully

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dumped from the truck. If bags are broken or damaged, leave in the truck and decontaminate entire truck and contents using procedures set forth elsewhere in this section.

2.4. PROJECT DECONTAMINATION:

2.4.1. GENERAL:

The entire work of project decontamination will be performed under the close supervision and monitoring of the Owner's Representative.

2.4.2. WORK AREA CLEARANCE:

Air testing and other requirements which must be met before release of Contractor and reoccupancy of the work area are specified elsewhere in this Section. Air Clearance will be performed utilizing Phase Contrast Microscopy with an airborne level of <0.01 F/cc.

2.4.3. WORK DESCRIPTION:

The work of decontamination includes the decontamination floor and air within the work area and the decontamination and removal of temporary facilities installed prior to abatement work including Primary and Critical Barrier, Decontamination Facilities (PDF and EDF) and Negative Pressure Systems.

The work of decontamination includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the Work Area, or equipment in the Work Area.

2.4.4. PRE-DECONTAMINATION CONDITIONS:

Before decontamination work starts, all ACM and ACE will be removed from the work area and disposed of along with any gross debris generated by the work.

At the start of work for decontamination, the following will be in place:

1. Critical barrier which forms the sole barrier between the work area and other portions of the building or the outside.
2. Critical barrier sheeting over lighting fixtures, ventilation openings, doorways, convectors, speakers and other openings.
3. Decontamination facilities for personnel and equipment in operating condition and negative pressure system in operation.

2.4.5. FIRST CLEANING:

The Asbestos Abatement Contractor will carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and a HEPA filtered vacuum. Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces. Remove all filters in air handling system(s) and dispose of as asbestos containing waste in accordance with requirements of these specifications.

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2.4.6. SECOND CLEANING:

If the Asbestos Project Manager is not satisfied with the first cleaning, the Contractor will perform a second cleaning inside containment. If the containment fails to pass final air clearance criteria, the Contractor will perform additional wet cleaning inside containment.

2.4.7. PRE-CLEARANCE INSPECTION AND TESTING:

The Owner's Representative will perform a thorough and detailed visual inspection at the end of the second cleaning to determine whether there are any signs of visible ACM or dust in the work area. If the visual inspection is satisfactory, the Contractor will then encapsulate all surfaces inside the containment. Final air clearance will be performed in accordance with these Specifications.

2.4.8. LOCK-BACK ENCAPSULATION:

With the express permission of the Owner's Representative, the Asbestos Abatement Contractor will perform a lock-back encapsulation of all surfaces from which ACM was removed. Execute in accordance with provisions specified elsewhere and performance requirements as specified in Paragraph 2.2.2 of this Specification. Maintain negative pressure in work area during encapsulation work.

2.5. FINAL AIR CLEARANCE TESTING

2.5.1. GENERAL:

The Asbestos Abatement Contractor will notify the Owner's Representative in advance for the performance of the final visual inspection and testing. The final air clearance will be performed by the Owner's Representative starting after completion of the encapsulation of the containment and the material is dry.

2.5.2. FINAL TESTING:

After a satisfactory final visual inspection and encapsulation, The Owner's Representative, will undertake the final testing. Air samples will be taken and analyzed in accordance with the procedures for PCM specified elsewhere in this section. If release criteria are not met, the contractor will repeat final cleaning and continue decontamination procedure from that point. Additional inspection and testing will be at the expense of the Contractor.

If results of PCM air samples are satisfactory, remove the critical barriers and shut down and remove HEPA units as specified under Abatement Closeout. Any small quantities of residue material found upon removal of the plastic sheeting will be removed with a HEPA filtered vacuum cleaner and localized isolation. If significant quantities, as determined by the Owner's Consultant, are found then the entire area affected will be decontaminated as specified herein for the Final Cleaning.

If release criteria are met the Contractor will perform the abatement closeout and issue the certificate of compliance in accordance with these specifications.

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2.5.3. FINAL TESTING PROCEDURES:

CONTRACTORS RELEASE CRITERIA: Work in an area is complete when the work area is visually clean and airborne fiber levels have been reduced to less than 0.01 fibers/cc by PCM analysis.

AIR MONITORING AND FINAL CLEARANCE SAMPLING: To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the Owner's representative will secure samples and analyze them according to the following procedures:

1. Fibers Counted: "Fibers" referred to in this section will be either all fibers regardless of composition as counted in the NIOSH 7400 method, or asbestos fibers of any size as counted using PCM; and

2.5.4. SCHEDULE OF AIR SAMPLES WITH PCM:

The Owner's Consultant will perform background, perimeter and work area samples during construction and abatement. These samples will be analyzed by PCM.

At least three (3) background samples will be taken before work begins for a baseline measurement. The Owner's Representative will sample at a rate of one sample per 1,000 sq. ft. of work area with a minimum of two area samples for small containment areas. A minimum of 1,250 liters of air will be collected for all baseline and clearance samples.

From start of actual removal of asbestos-containing materials the Owner will take the following samples on a daily basis. The number of samples may vary according to site plan and approval from the CIH.

DAILY SCHEDULE OF AIR SAMPLES

Location Sampled	Number of Samples	Analytical Method	Detection Limit Fibers/cc.	Minimum Volume (Liters)	Rate LPM
Each Work Area	3	PCM	0.02	750	2-15
Outside Each Work	2-3	PCM	0.01	1,000	2-15
Outside Entrance to De-contamination Facility	1	PCM	0.01	1,000	2-15
Outside Bag-out Area	1	PCM	0.01	1,000	2-15
Output Negative Pressure System	1	PCM	0.01	1,000	2-15

If airborne fiber counts exceed allowed limits, additional samples will be taken as necessary to monitor fiber levels.

*At a minimum, five (5) samples will be collected per containment area over the duration of work in that area each day.

2.5.5. LABORATORY TESTING FOR PCM:

The services of a AIHA P.A.T. accredited testing laboratory will be employed by the Owner to perform PCM analysis of the air samples collected prior to final clearance testing. A technician

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will be at the job site, and samples will be analyzed on-site. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner and the Abatement Contractor. The analytical laboratory must be licensed in accordance with State of Texas Civil Statutes Article 4477-3a pg. 295.54 in addition to being AIHA P.A.T. Accredited.

2.5.7. FINAL AIR TESTING REQUIREMENTS:

Final air testing will be performed by Phase Contrast Microscopy (PCM). Final air testing requirements are outlined below:

In each homogeneous work area after completion of all cleaning work, a minimum of three (3) samples will be taken and analyzed as follows:

PHASE CONTRAST MICROSCOPY CLEARANCE CRITERIA

Location Sampled	Number of Samples	Analysis Method	Analytical Sensitivity s/mm ² .	Recommended Volume (Liters)	Rate LPM
Each Work Area	3	PCM	<0.005	1,250	< 15
Work Area Blank	1	PCM	<0.005	0	Open for 30 Seconds
Outside Blank	1	PCM	<0.005	0	Open for 30 Seconds
Laboratory Blank	1	PCM	<0.005	0	Do Not Open

Release Criteria: Decontamination of the work site is complete when every work area sample is at or below 0.01 FIBERS/CC.

2.6. ABATEMENT CLOSEOUT AND CERTIFICATE OF COMPLIANCE:

2.6.1. COMPLETION OF ABATEMENT WORK:

The asbestos abatement contractor will seal negative air machines with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area. Complete asbestos abatement work upon meeting the work area clearance criteria and fulfilling the following:

Remove all equipment, materials, debris from the work site.

Dispose of all asbestos containing waste material as specified elsewhere in this section.

Repair or replace all interior finishes damaged during the course of asbestos abatement work.

Replace all asbestos containing insulation and other ACM with suitable non-asbestos material so that facility is fully functional and safe as prior to abatement if required by these specifications.

Fulfill other project closeout requirements as specified elsewhere in this section.

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2.6.2. CERTIFICATE OF COMPLETION BY CONTRACTORS:

The Contractor will complete and sign a "Certificate of Completion" in accordance with attachment #1 at the completion of the abatement and decontamination of a work area.

Appendix A
Attachments

CERTIFICATE OF COMPLETION

PROJECT: _____ DATE _____

LOCATION: _____

1. I certify that I have personally inspected, monitored and supervised the abatement work of _____
(Specify Work Area or Building)

which took place from _____ to _____.
(Beginning of Work) (End of Work)
2. That throughout the work all applicable regulations and the specifications were observed.
3. That any person who entered this area was protected with the appropriate clothing and respirators systems and that they followed the proper entry and exit procedures and the proper operation procedures throughout the work.
4. That all employees of the contractor engaged in this work were trained in respiratory protection, experienced with abatement work, had proper medical records and were not exposed at any time during the work to asbestos without the benefit of adequate respiratory protection.
5. That I performed and supervised all inspection and testing specified and required by applicable regulations and the specifications.
6. That the condition inside the work area were always safe and the maximum asbestos fiber count never exceeded 0.5 f/cc. Except as describe here:
_____.
7. That the negative pressure air systems were installed and operated properly maintaining the specified negative pressure in the work area throughout the work.

CONTRACTOR/SUPERVISOR

COMPANY NAME

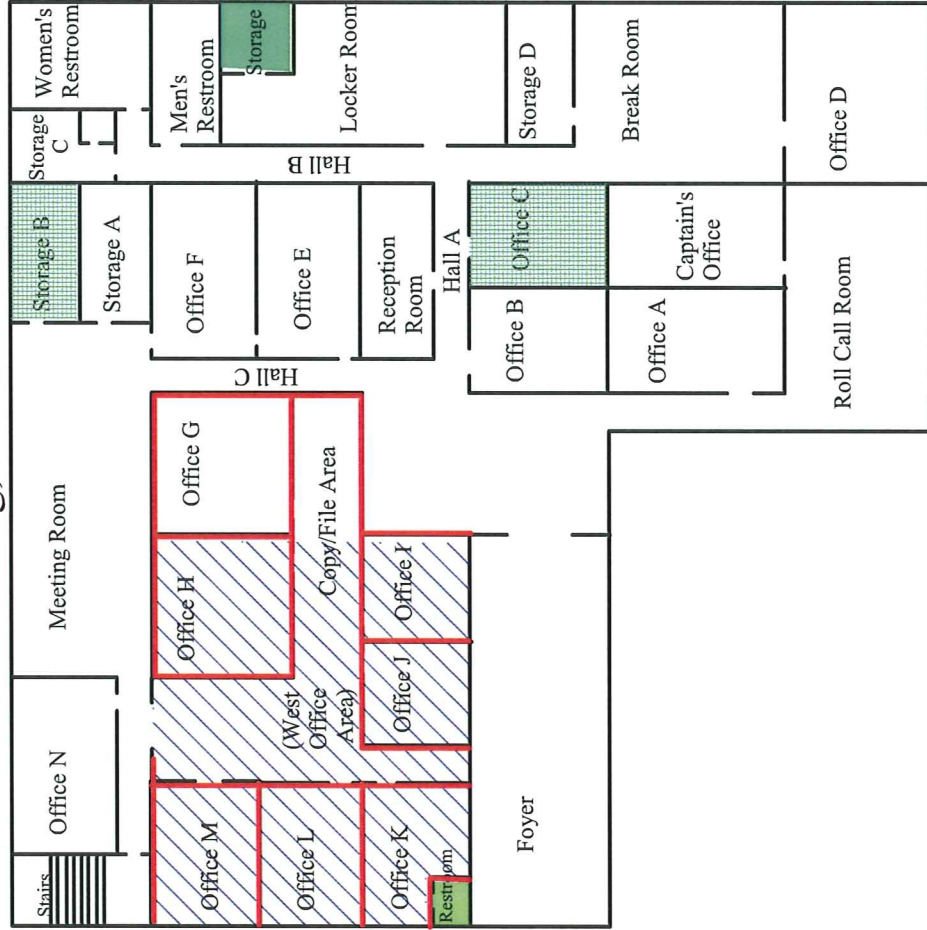
CONTRACTOR ADDRESS

ATTACHMENT #1





Appendix B
Specification Drawings



Site Diagram - Asbestos-Containing Materials Police District #6 Office Building, First Floor



LEGEND

-  ACM Joint Compound
-  ACM Black Mastic under Carpet
-  ACM Mastic under Linoleum
-  ACM 9"x, 9" Green Floor Tile & Mastic

Not Drawn to Scale

*Yung Bramlett
10.5040
12/31/09*

City of Fort Worth
Police District #6
Fort Worth, Texas

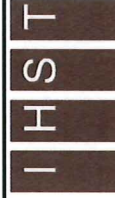
Asbestos Specification

Project # 18019 Drawing #1

Not To Scale

Drawn by: AHG Date: 05/30/08

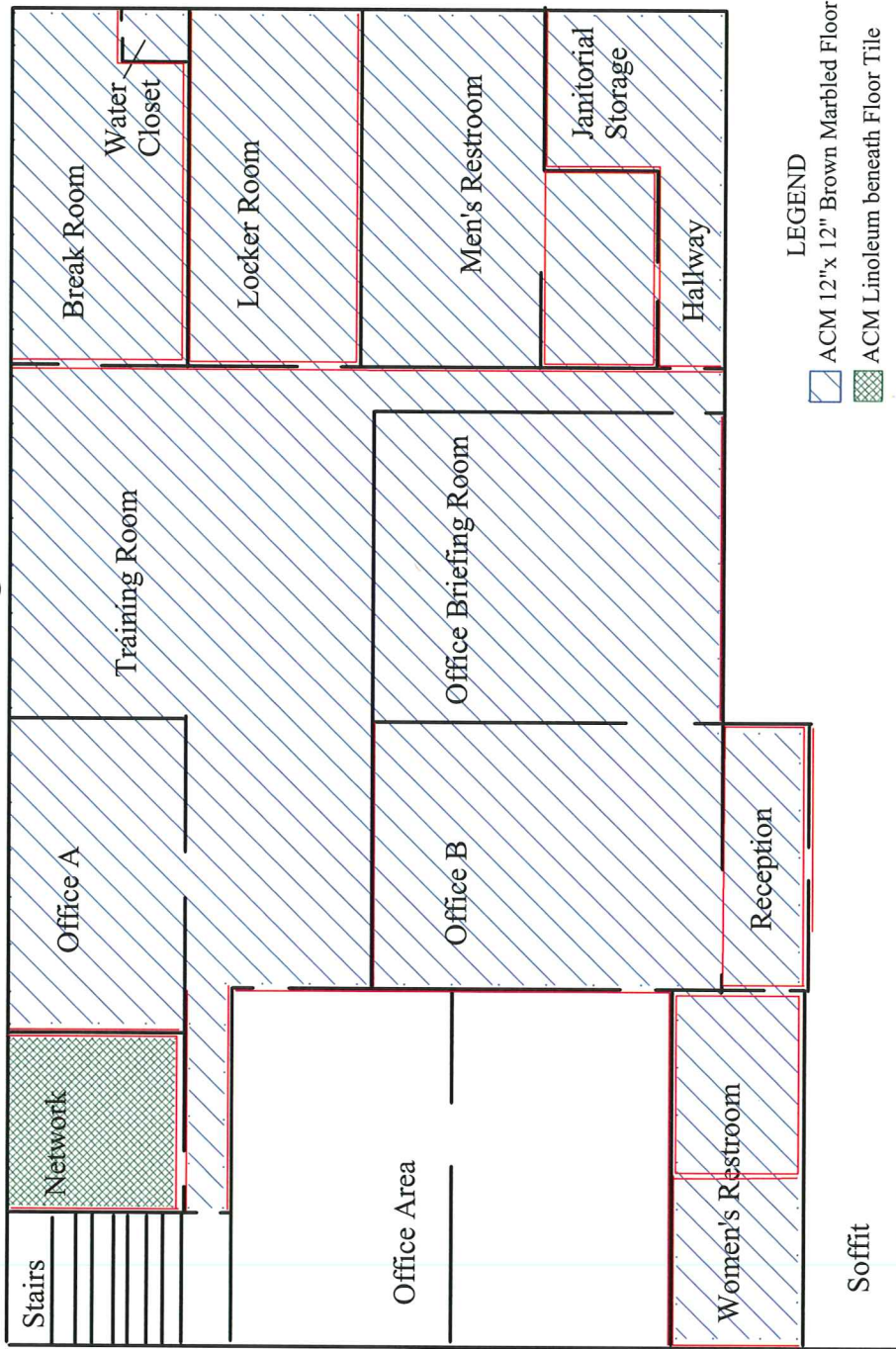
Revised by: Date:



Industrial Hygiene and
Safety Technology, INC.
2235 Keller Way
Carrollton, Texas 75006
TEL (972) 478-7415
FAX (972) 478-7615



Site Diagram - Asbestos-Containing Materials Police District #6 Office Building, Second Floor



LEGEND

- ACM 12"x 12" Brown Marbled Floor Tile
- ACM Linoleum beneath Floor Tile
- ACM in Hot Water Pipe Fittings
- ACM Sheetrock Texture

Not Drawn to Scale

N

City of Fort Worth
NPD #6, Floor 2
Fort Worth, Texas

Asbestos Specification

Project # 18019 Drawing #1

Not To Scale

Drawn by: AHG Date: 06/02/08

Revised by: Date:

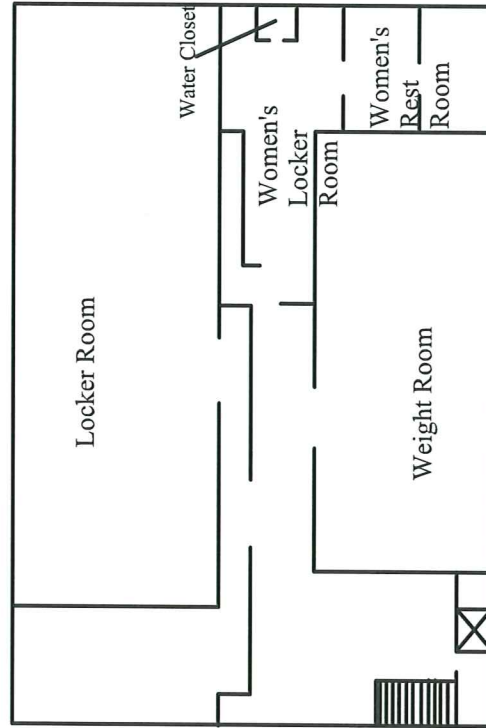
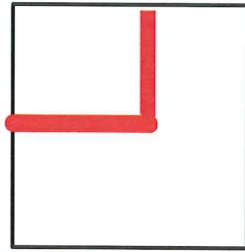


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Gracy Bramlett
10-5040
12/3/09



Site Diagram - Asbestos-Containing Materials
 Police District #6
 Office Building, Basement



LEGEND

ACM TSI



Not Drawn to Scale

Tracy L Bramlett
 10-5040
 12/13/08

City of Fort Worth Police District #6 Fort Worth, Texas	
Asbestos Inspection	
Project # 18019	Drawing #1
Not To Scale	
Drawn by: AHG	Date: 05/30/08
Revised by:	Date:

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