

Addendum No. 4 to IFB 14-06CD



CITY OF SOMERVILLE, MASSACHUSETTS
Department of Purchasing
JOSEPH A. CURTATONE
MAYOR

To: All Parties on Record with the City of Somerville as Holding IFB 14-06CD,
Waste Transfer Station Demolition

From: Angela M. Allen, Purchasing Director

Date: July 31, 2013

Re: Environmental Report, Additional Site Visit

Addendum No. 4 to IFB 14-06CD

Please acknowledge receipt of this Addendum by signing below and including this form in your proposal package. Failure to do so may subject the proposer to disqualification.

X

Name of Authorized Signatory
Title of Authorized Signatory

Addendum No. 4 to IFB 14-06CD

Environmental Report:

See the attached reports from Hub Testing.

Additional Site Visit Scheduled:

As noted in Addendum 3, an additional site visit is scheduled for Thursday, August 1st at 11:00 a.m. The walk through will not be mandatory. Attendees wishing to enter the site will be required to sign the attached release and indemnity agreement. Hard copies of the agreement will be available on-site for those who do not bring the signed agreement with them.

Rodent Control:

The following language is hereby added to the scope of work for this bid.

- A. Contractor shall hire a licensed and certified pest control service and have bait boxes or other approved systems in place prior to the start of demolition.
- B. Rodent control system to be employed shall be approved by City of Somerville Inspectional Services Department.

GUIDELINES FOR REMOVAL PIGEON AND BAT GUANO¹:

1. The pigeon and bat guano is concentrated on the fourth floor un-occupied space. Approximately 1,200 sq. ft. by 1 – 3 inches deep. Other areas have lesser amounts, specifically the stair towers, rafters and ledges, the floor underneath these areas including support beams, cross members, horizontal and vertical surfaces of beams and sill areas around windows.
2. Remove guano physically with shovels, scoops, scrapers, wire brushes, HEPA vacuums, etc.) Prior to removal, all materials to be removed (guano, bird feathers, body parts, bones, carcasses, etc.) must be wetted down with amended water², disinfectant, biocide or a water and bleach solution (1:10) to minimize any airborne dust potentially containing any vector borne organisms. It is essential to use HEPA vacuums to remove any "fines" not removed by shoveling or bulk methods. HEPA vacuums are equipped with special filters which are 99.97% efficient in removing monodisperse particles of 0.3 microns in diameter.
3. Provide Material Safety Data Sheets (MSDSs) for biocides to the City of Somerville (Owner) or its Industrial Hygiene contractor/representative.
4. Specify the biocide(s) to be used in the decontamination process. Formaldehyde or formalin is not acceptable for this decontamination process. The intended use of the biocide during the removal of guano and associated contaminated material is to provide disinfection (decontamination) rather than sterilization. Any biocide approved as a tuberculocidal, including bleach in a 1/10 to 1/100 dilution, is sufficient to destroy most organisms associated with guano, with the exception of the fungal spores of *histoplasmosis capsulatum*.
5. If an encapsulant is used, provide an MSDS for the encapsulant to the Owner or its Industrial Hygiene contractor/representative.
6. Provide the name and qualifications for the project supervisor.
7. The Contractor is solely responsible for complete medical examination of all supervisors and workers involved in microbial remediation at the Waste Transfer site. The Contractor should warn workers and supervisors involved in microbial remediation (in writing) of the special risks associated with fungal and bacterial aerosols to workers with immunodeficiency disease, cancer, disorders of immune regulation, or allergic or hypersensitivity disease including atopic conditions.
8. Provide a list of the types of PPE (personal protective equipment) to be used by personnel performing the abatement. At a minimum, personnel should wear protective suits which cover the head and feet, such as disposable tyvek type jumpsuits. Rubber gloves should

¹ <http://www.mass.gov/lwd/labor-standards/massachusetts-workplace-safety-and-health-program/hazard-info/402-health-and-safety-guidelines-for-removal-of-guano.html>

² <http://www.cdc.gov/niosh/docs/2005-109/pdfs/2005-109.pdf>

be taped to the suit at the wrists. Respirators must be worn with filters offering protection equal to or exceeding HEPA protection (High Efficiency Particulate Air). This filter is 99.97% efficient in removing monodisperse particles of 0.3 microns in diameter. National Institute of Occupational Safety & Health (NIOSH) approved particulate filters are the N100, R100 and P100. Detailed information on respiratory protection is available in the Occupational Safety & Health Administration (OSHA) standard 29 CFR 1910.134.

9. Negative Pressure Enclosure/Containment: The Abatement Contractor shall completely isolate containment work areas from the rest of the spaces for the duration of the work by sealing off all ventilation openings, walls, floors, openings, and fixtures in the work areas including, but not limited to, doorways, corridors and windows with a single layer of 6-mil polyethylene sheeting. Polyethylene sheeting shall be secured to existing structures using a method of the contractor's choice that insures the integrity of the barrier for the duration of the work. Additional supports in the form of plywood panels or wood doors, 2- x 4-inch wood studs, or polyvinyl chloride (PVC) piping shall be used as necessary.
10. The Contractor shall establish a negative air pressure differential inside the NPE and monitor the pressure with a manometer capable of recording and printing the readings. No air must flow from inside the NPE to the areas outside. Unless otherwise indicated in these guidelines, the term "outside the work area" shall mean areas within the building that are not in the enclosed work areas. The Contractor shall ensure that air pressure differential is maintained until the Owner's Representative has determined that the work area inside the NPE has passed the post-demolition inspection or shut off at the request of the Owner's Representative.
11. The Contractor shall install and use Negative Air Machines (NAM) with new HEPA filters as part of the exhaust ventilation system to develop and maintain the specified desired air pressure differential inside the work areas relative to the outside areas. HEPA filters and pre-filters for NAMs shall be replaced as required during demolition and at the completion of work. The Contractor shall establish a negative pressure differential inside the NPE relative to adjacent areas before remediation begins. The Contractor shall ensure that the pressure differential is continuously maintained (24-hours a day, 7-days a week, if necessary) until the Owner's Representative has determined that the work area has passed the final post remediation verification. The Contractor shall install and use air filtration devices (NAMs) with HEPA filters as the exhaust ventilation system to develop and maintain a pressure differential inside the NPE. The exhaust ventilation system in the work area shall be capable of maintaining the work area under a minimum negative pressure of -0.02 inches of water (as indicated by a recording manometer).
12. All exhaust air from any NAM unit will be discharged to the exterior of the building, if feasible. Approval from the Owner's Representative is required in advance if discharge is to a location other than outdoors. Seal openings used for discharge of exhaust air with duct-tape and plywood fitted tightly to opening. Exhaust discharge openings may be cut into plywood.

13. The Contractor shall establish bagging and personnel decontamination chambers adjacent to and/or connected to the enclosed work areas. The Contractor shall ensure that employees and visitors enter and exit the enclosed work areas through the personnel decontamination area and that all bagged waste exits through the decontamination unit. The bags or wrappings containing demolished materials shall be thoroughly vacuumed with a HEPA vacuum cleaner in the work area sealed and transferred to the bag decontamination room. There, the bags shall be wiped down/vacuumed free of dust and placed inside another bag, sealed and then transported through the change room to the outside of the building.
14. The Contractor shall provide protective clothing for use by the Owner's Representative. The Contractor shall furnish as many sets of the clothing as necessary for full-time monitoring including that required for afterhours access to work areas. The Contractor shall provide authorized visitors with a set of suitable protective disposable clothing, head gear, gloves, and footwear sized for proper fit, whenever they are authorized to enter the containment by Owner's Representative.
15. Provide the City of Somerville or its Industrial Hygiene contractor/representative with a copy of the abatement contractor's written hazard communication program.
16. The Contractor will be working in a building that was previously an incinerator. The flooring is open in areas where chutes and bins were located. No handrails are present and the structural integrity of the floor has not been confirmed. The Contractor should be aware of their surroundings and take precautions as necessary under OSHA regulations for working at elevation, trips and falls, lock out – tag out and any other applicable OSHA, EPA, MADEP and MADLS regulations.
17. Provide the Owner or its Industrial Hygiene contractor/representative with a copy of the abatement contractor's written respirator program.
18. Specifically list the method(s) by which personnel performing the abatement will be decontaminated: where the decontamination shower and change room will be located, how the runoff water will be contained and disposed of; the type of biocide used for decontamination of equipment and reusable PPE.
19. Specifically list the method(s) by which the waste material will be removed from the work area (e.g. placed into plastic bags of what thickness and composition placed into boxes, etc.).
20. Specifically list the method of removing the waste from the building as well as the path that will be used if the material must be taken through the facility.
21. The Contractor shall remove all wastes promptly from the interior of the buildings and stored in a secure dumpster provided by the Contractor on the Project Site before disposal. The dumpster shall have lockable lids that are closed and locked at all times except when the Contractor is actively transferring waste material to the dumpster.
22. All material transport activities must meet United States Department of Transportation (USDOT), state, and local regulations, as applicable. The Contractor shall have the

responsibility to determine current material handling, transporting, and disposal regulations for the work site.

23. At all times throughout the remediation project, the Contractor shall provide adequate security measures to prevent any unauthorized entry into the enclosed work areas. The work areas shall never, at any time, be left unattended unless access can be positively blocked (for example, locked doors and fences).
24. The Contractor shall provide temporary electrical power and lighting in the work areas, if necessary. The temporary electrical service shall be taken from the building's electrical service within the containment areas. Temporary electrical service for power and lighting shall be installed and maintained in accordance with the National Electrical Code, OSHA regulations, state, and local codes. Provide ground fault protection for temporary electrical service in accordance with local codes.
25. The Contractor at all times shall keep the site and work area free from accumulations of bagged dust material or rubbish caused by its operations and free from any flammable materials or other source of fire hazard. During the performance of the work, the Contractor shall remove all bagged material from and about the work site in strict accordance with the specifications and applicable codes and regulations.
26. Once all the bulk material has been removed, wet cleaning can be used to remove any remaining contamination. Wet cleaning should be done using a 1:10 bleach solution or similar. Surfaces to be cleaned should be damp wiped but not soaked. If any dry material is left, or if wet cleaning is not possible, the remaining material should be vacuumed using a HEPA vacuum. Provide the specifications for the HEPA vacuum to be used. Specifications should include name of manufacturer, capability of the machine, and proof that the machine is in fact equipped with HEPA filtration.
27. The Owners Industrial Hygiene contractor/representative will conduct a walk-thru to verify that the guano has been removed. The contractor should give 24 hour notice to the Owners Industrial Hygiene contractor/representative to facilitate scheduling.
28. List the ultimate destination site for contaminated materials removed. Bags containing contaminated materials must be disposed in a landfill authorized to receive construction debris. Bags must not be opened and must be buried in the landfill. Bags shall not be delivered to waste recycling facilities where unauthorized opening of bags could occur.

Note: Regulations for containerizing of materials containing asbestos and/or lead will supersede these guidelines.

LEAD PAINT

PART 1 - GENERAL

Paint samples were collected sporadically throughout the building to give an indication of the presence of lead based paint. A full lead paint inspection has not been performed in the building. In general, concrete and CMU walls were found to be unpainted. The walls of the office areas were found to be painted with paint that would not be considered lead based per regulations; however low levels of lead should be noted as they may relate to OSHA work practices and standards. Samples collected from metal sources throughout the building were found to be painted with lead based paint. These samples included paint from handrails in the stairwells and paint from the crane and framing. Demolition debris from industrial sites that is contaminated with lead-based paint must be managed as RCRA hazardous waste if a representative sample meets the toxicity characteristic as defined by the EPA. It is the responsibility of the contractor to be sure that hazardous and contaminated materials be handled according to applicable laws and regulations in effect at the time of disturbance, transport or disposal of said hazardous materials. Both worker safety as well as environmental impact should be taken into consideration when handling potentially hazardous waste.

FLUORESCENT LIGHT BULBS

PART 1 - GENERAL

Management and disposal of fluorescent light bulbs and other mercury-containing bulbs are regulated under the Resource Conservation and Recovery Act (RCRA) Universal Waste Rule (UWR) and Subtitle C hazardous waste regulations. This includes: standard linear fluorescents, lamps with green end caps or green marking, compact fluorescents, high intensity discharge (HID), neon and high-pressure sodium lamps used in outdoor lighting.

As of May 1, 2008 the MA DEP's Mercury Management Act "prohibits any person, household, business, school, healthcare facility or state or municipal government from knowingly disposing of a mercury-added product." This includes the straight fluorescent lamps with a "green-cap".

Fluorescent bulbs must be removed INTACT. Once bulbs are removed, they should be packaged in the original box or another protective container. Do not tape tubes together. Packaged used lamps must be clearly labeled as "Universal Waste Lamps" or "Waste Lamps" or "Used Lamps" and must be either be recycled or disposed of in accordance with 310 CMR 30.000.

ASBESTOS REMEDIATION

PART 1 - GENERAL

1.1 SUMMARY OF THE WORK

This data is provided for informational purposes only, and is based on the best information available at the time of specification preparation. The Contract Bidder is responsible for field verifying and to become familiar with existing conditions, quantities, dimensions and all other pertinent information for this project. Failure to do so will not be considered as justification for extra charges or change orders at a later date.

1.1.1 CONTRACT DOCUMENTS AND RELATED REQUIREMENTS

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, coordination with other work and phasing of work. Whenever there is a conflict or overlap of the above references, the more stringent provisions apply. In the event the Asbestos Abatement Contractor discovers an ambiguity or conflict in or between the contract documents and related requirements and codes, that issue must be immediately brought to the attention of the Project Industrial Hygienist for resolution. Any action taken without obtaining such guidance from the Project Industrial Hygienist shall be the sole risk and responsibility of the Abatement Contractor. Related work is covered in other sections of this contract or specifications.

1.1.2 EXTENT OF WORK

It is the intent of this specification to remove all Asbestos Containing Materials from the Waste Transfer Station. This consists of:

- Approximately 130 linear feet of pipe insulation located on the un-occupied section of the second floor. (The pipe insulation contains Chrysotile and Amosite asbestiform mineral.
- Floor tile and associated mastic located in the occupied section of the third floor. There are two layers of floor tile in the office space; 9"x9" green floor tile with red streaks (approximately 600 sqft) and beige floor tile with red streaks over laying the green floor tile in the office and continuing into the bathrooms (approximately 800 sqft). Both floor tiles contain Chrysotile asbestiform mineral as does the mastic associated with the 9"x9" tile.
- Window glazing on the older style windows (all windows other than the manufacturers sealed windows, approximately 20). Window glazing contains Chrysotile asbestiform mineral.
- Heat shields on the pendulum lighting. (Presumed, approximately 25)

The asbestos containing pipe insulation will be removed using glovebag technique. As per MA regulation no final clearance air sampling will be required however final visual inspection will be conducted by the on-site Project Monitor.

The contractor is directed to use two-man teams to perform the glovebag operations. Should multiple teams work at the same time each two-man team will be required to have adequate equipment to perform the glovebag operations.

The floor tile and mastic will be removed under a single containment utilizing barriers, negative air pressure and HEPA filtration, final clearance air sampling will be conducted in the containment and must comply with MA regulation for PCM clearance 453 CMR 6.14 (5)(b)2.

Asbestos containing window glazing will be removed with the windows and the window sections wrapped and discarded as contaminated waste. Windows will be removed from the exterior of the building with the interior sealed with polyethylene sheeting. No final clearance air sampling will be conducted for the window removal aspect of the project however ambient air sampling will be conducted during the removal and a final visual inspection of each window opening will be performed to verify completion of the removal.

It is presumed that heat shields located in the pendulum lighting are asbestos containing. Pendulum lighting was inaccessible during the field inspection. The contractor may remove adequate lighting and coordinate and allow adequate time with Hub Testing to inspect the lighting and sample and document appropriately either the absence of the heat shields or that heat shields do not contain asbestos. There are approximately 25 pendulum lights.

All phasing and coordination of the asbestos removal will be conducted with an approved plan in place and with the tight coordination of the owner and their representative for the abatement, Hub Testing Laboratory, Inc.

1.1.3 TASKS

- A. Work summarized briefly as follows; All asbestos containing pipe insulation, floor tile, window glazing and pendulum light heat shields will be removed prior to demolition. An abatement plan must be submitted to the City and the PIH firm, Hub Testing Laboratory, Inc. prior to any removal activity.
- B. All scheduling, phasing and access to the work areas shall be coordinated with the City and the PIH firm, Hub Testing Laboratory, Inc.
- C. As the building historically was an incinerator and currently has large openings in the floor as well as pits and un-confirmed structural integrity of the flooring all work shall be performed in accordance with all OSHA safety regulations.

- D. Pre-abatement activities include pre-abatement meeting, inspection, notification, permits, submittal approvals, preparations, emergency arrangements and standard operating procedures.
- E. Abatement activities include removal, decontamination and disposal of asbestos containing and asbestos contaminated materials, record keeping, security, and environmental oversight including inspections and monitoring.
- F. Cleaning and decontaminating activities include final inspection, testing and certification of decontamination where appropriate.
- G. As access to the work areas may be in the living spaces of tenant's special consideration will be taken regarding to restricting access to tenants, workman like behavior and scheduling.

1.1.4 CONTRACTORS USE OF PREMISES

- A. Cooperate fully with the City to minimize conflicts and to facilitate the safe and smooth usage of the building. Perform the work in accordance with specifications and approved phasing plans.
- B. Use existing facilities in the buildings strictly within the limits shown in contract documents and **the approval of submitted pre-abatement plan of action**. The location of the temporary waste storage area will be pre-approved by the City and the Project Industrial Hygienist (PIH).

1.2 VARIATION IN QUANTITIES

Variations in quantities of less than 20% will not be considered to affect the submitted price.

1.3 STOP ASBESTOS REMOVAL

- A. If the Project Industrial Hygienist presents a stop asbestos removal order, immediately stop all asbestos removal and initiate fiber reduction activities. Do not resume asbestos removal until authorized in writing by the PIH. A stop asbestos removal order will be issued at any time the PIH determines abatement conditions are not within specification requirements and/or ambient air sample data indicates controls are not effective or work activities could compromise ambient environmental conditions. Stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at abatement sub-contractor's expense. The occurrence of the following events shall be reported in writing to the Owner's Representative and shall require the abatement sub-contractor to immediately stop asbestos removal and initiate fiber reduction activities.
- B. Excessive airborne fibers outside containment area (0.01 f/cc or greater, or levels that are statistically greater than pre-abatement).
- C. Break in either the primary or secondary containment barriers.
- D. Loss of negative air pressure (At or below -0.02 inches of water).
- E. Serious worker injury within the containment area which necessitates interruption of the normal decontamination procedures.

- F. Presence of a fire and/or safety emergency.
- G. Respiratory protection system failure.
- H. Power failure.
- I. Excessive airborne fibers inside containment area (0.5 f/cc or greater when wet methods are employed).

1.4 DEFINITIONS

1.4.1 GENERAL

Definitions and explanations here are neither complete nor exclusive of all terms used in the contract documents, but are general for the work to the extent they are not stated more explicitly in another element of the contract documents. Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.

1.4.2 GLOSSARY

Abatement: A general term used to refer to the various processes used to control asbestos materials in buildings. Three alternative methods for ACM and/or ACE abatement are removal, encapsulation and enclosure.

ACE: Asbestos Contaminated Elements.

ACM: Asbestos Containing Material.

ACS: Asbestos contaminated soil.

Aerosol: Solid or liquid particles, suspended in air.

Aggressive Sampling: EPA defined clearance sampling method using air moving equipment such as fans and leaf blowers to stir the air.

AHERA: Asbestos Hazard Emergency Response Act. Asbestos regulations issued by EPA in 1987.

Air Cell: Type of pipe or duct insulation comprised of corrugated cardboard which frequently contains asbestos combined with cellulose or refractory binders.

Air Monitoring: The process of collecting and analyzing air samples to determine the number of fibers present per cubic centimeter of air. This overall monitoring procedure is also called Air Testing, or Testing.

Air Sample Collection Filter: Membrane filter used to collect fibers/particulate which are counted and/or analyzed. Membrane is usually made of mixed cellulose material for PCM, (phase contrast microscopy) and polycarbonate or mixed cellulose for TEM (transmission electron microscopy).

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

Asbestos: The general name for a group of fibrous mineral form including but not limited to chrysotile, amosite, crocidolite, anthophyllite, actinolite and tremolite.

Asbestos Waste Decontamination Facility: Airlock system consisting of drum/bag washing facilities and temporary storage area for cleaned containers. Used as exit for waste and equipment leaving the abatement area. May be used in an emergency to evacuate personnel.

Asbestos-Containing Material (ACM): Any material containing more than 1% (one percent) by weight of asbestos of any type or mixture.

Asbestos Contaminated Elements (ACE): Building elements such as ceilings, walls, lights and ductwork that are contaminated by asbestos.

Asbestos-Containing Waste Material: Materials removed from an abatement area which is or is suspected of being contaminated with an asbestos-containing material.

Authorized Visitor: Any person approved by the Contracting Officer, the contractor or any government agency which has proven jurisdiction over asbestos-related work.

Barrier: Any surface that seals the work area to inhibit the movement of fibers. Containment Barrier - An airtight barrier, consisting of walls, floors and/or ceilings of sealed plastic sheeting, surrounding and sealing the outer perimeter of the work area. Critical Barrier - The barrier responsible for isolation of the work area from adjacent spaces, typically constructed of polyethylene sheeting secured in place at penetrations such as doors, windows or any other opening into the work area. Primary Barrier - Barriers assembled over critical barrier and exposed directly to decontamination work. Secondary Barrier - Any additional sheeting to collect and provide protection from debris during abatement.

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

Bridging Encapsulant: An encapsulant that forms a discrete layer on the surface of an asbestos matrix.

Bulk Test: The collection and analysis of samples of suspected asbestos materials. A small amount, or bulk, of the material is physically removed from the structure and placed in a rigid airtight container for transportation to an accredited lab for analysis.

Changing Area: Normally the first chamber of the personnel decontamination facilities, i.e., the "clean room".

Clearance Sample: An area sample taken to ascertain airborne fiber levels after removal clean-up and final inspection have been completed. Performed by the PIH consultant.

Count: Refers to "Fiber Count," or the average number of asbestos fibers greater than five microns in length and greater than 3 to 1 aspect ratio.

Disposal Bag: Six mil thick, air-liquid leak proof plastic bag used for transporting asbestos waste from abatement areas to disposal site. Each is labeled in accordance with OSHA and NESHAP regulations.

Drum: A rigid, impermeable container made of cardboard, metal or plastic which can be sealed in an air and watertight manner.

Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix and prevents release of fibers.

Encapsulation: Treatment of ACM with an encapsulant.

Enclosure: The construction of an air-tight, impermeable, permanent barrier around ACM to control the release of asbestos fibers into the air.

Entrance Port: A name sometimes used for the main entrance airlock in an OSHA defined negative air containment area.

EDF: Equipment Decontamination Facility.

f/cc: Abbreviation for fibers per cubic centimeter of air and standard measurement units used to measure the level of asbestos contamination in the air.

Filter: A media component used in respirators or other equipment to remove solid or liquid particles from the air.

Fire-stop: Material used to close open parts of a structure and prevent the spread of fire.

Friable Asbestos Containing Material (F-ACM): Material that contain more than 1.0% asbestos by weight, which can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

Glove-bag: A sack (typically constructed of 6 mil transparent polyethylene or polyvinylchloride plastic) with two inward projecting long sleeve gloves, which are designed to enclose an object from which an ACM is to be removed.

High-Efficiency Particulate Air (HEPA) Filter: A filter which removes from the air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean diameter of 0.3 micrometer.

HEPA Filter Vacuum Cleaner: High efficiency particulate air vacuum collection equipment with a HEPA filter system capable of collecting and retaining asbestos fibers.

Lock-Back: Encapsulation of all surfaces involved in abatement at the conclusion of ACM removal and before removal of primary barriers.

MCEF: Mixed cellulose ester filter.

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

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

Negative Pressure System: A local exhaust system, utilizing HEPA filtration capable of maintaining a negative pressure inside the work area and a constant air flow from adjacent areas into the work area and exhausting that air outdoors.

NESHAP: National Emission Standards for Hazardous Air Pollutants.

Non-Friable Asbestos-Containing Material (NF-ACM): Material that contains more than 1% (one percent) asbestos by weight but cannot be crumbled, pulverized, or reduced to powder by hand pressure when dry. Non-friable asbestos materials can release asbestos fibers when power tools such as grinders, drills, sanders, etc. are used on them.

OV: Organic vapor.

PAPR: Powered Air-Purifying Respirator.

PCM: Abbreviation for phase contrast microscopy. Phase contrast microscopy utilizes a light microscope for the purpose of counting fibers. Reference NIOSH 7400 Method.

PDF: Personnel Decontamination Facilities.

Penetrating Encapsulant: Encapsulant that is absorbed by the asbestos matrix without leaving a discrete surface layer.

Personal Air Sampling: Air sample collected with a special battery-powered portable pump unit which is fitted on the body of the monitored person. The collection device (filter cassette) is located within the individual's breathing zone.

Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of a person.

P.I.H.: Project Industrial Hygienist, Agent of the owner, empowered to direct the asbestos abatement.

Plastic Sheetting: Barrier material not as strong as polyethylene.

PLM: Abbreviation for polarized light microscopy with dispersion staining utilizing light microscopy and refractive indices to identify type of asbestos present.

Polyethylene Sheeting: Strong plastic barrier material usually transparent.

Positive/Negative Pressure Fit Test: A negative-pressure respirator fit check, performed by placing the palm of one hand over the exhalation valve and exhaling (positive pressure) and feeling for facepiece-to-face fit leakage or, covering the filters cartridges with the palms of the hand and inhaling (negative pressure) while feeling for face piece-to-face fit leakage.

PDF: Personnel Decontamination Facility, consisting of a clean room, shower room and dirty /equipment room.

Pressure Differential System: System which restricts airflow from adjacent areas into work area and continuously re-filters air from the HEPA filtration machine. Minimal exhaust ventilation is utilized by maintaining a pressure differential of 0.02" of water.

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

QNFT: Quantitative fit test.

Removal: Means removal of ACM and ACE. Accomplished with tools such as scrapers, chisels and nylon brushes.

Removal Encapsulant: A penetrating encapsulant specifically designed for removal of ACM rather than encapsulation.

Renovation: Alteration of a facility or one or more facility components in any way, including the striping or removal of ACM from a facility component. Standards for renovation involving ACM are as defined in NESHAPs 40 CFR 61.145.

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

Respiratory Protection Program Coordinator (RPPC): Individual who is authorized and responsible for all aspects of the contractor's respiratory protection program (RPP).

RPP: Respiratory Protection Program.

RPPC: Respiratory Protection Program Coordinator.

SAR: Supplied Air Respirator.

SCBA: Self-contained breathing apparatus.

Sealant: Another name for encapsulating material. This term also refers to the approved coating which is used to cover brown-coat ceilings after asbestos surfaces have been removed.

Sealed Work Area: Refers to the work area after containment barriers and decontamination facilities have been erected and a negative pressure air system installed.

Showers: Shower stalls installed in the Personnel Decontamination Facilities and used as part of the decontamination process required for every person leaving the sealed work areas. Also used in the Equipment Decontamination Facilities to wash disposal bags.

S.O.P.: Standard Operating Procedures required to be submitted by contractor.

Station Sample or Area Sample: Refers to air samples collected at a specific spot, or station, with high-volume air pumps.

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

TEM: Abbreviation for transmission electron microscopy. TEM is used for the purpose of fiber counting and has the analytical capacity of identifying asbestos fibers.

Testing: One of two types of testing done in relation to asbestos bulk and air testing.

VAT: Vinyl-asbestos floor tile.

VCT: Vinyl composite floor tile

Visible Emissions: Any emission containing particulate asbestos material that are visually detectable without the aid of instruments.

Wet Cleaning: The process of thoroughly eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant.

Wetting Agent: See Surfactant.

Work Area: Area where asbestos related work or removal operations are performed which is defined and isolated to prevent the spread of asbestos dust, fibers or debris, and the entry of unauthorized personnel. Work area is a Regulated Area as defined by OSHA regulation 29 CFR 1926. Also called containment area.

1.4.3 REFERENCED STANDARDS ORGANIZATIONS

The following acronym or abbreviations as referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of contract documents.

AIHA..... American Industrial Hygiene Assoc.
2700 Prosperity Ave., Suite 250
Fairfax, VA 22031

ANSI..... American National Standards Institute
1430 Broadway; New York, NY 10018

ASTM..... American Society for Testing and Materials
1916 Race St.; Philadelphia, PA 19103

CFR..... Code of Federal Regulations
Available from Government Printing Office;
Washington, DC 20420 (usually first published in Federal Register)

EPA..... Environmental Protection Agency
401 M St., S.W.; Washington, DC 20460

MSHA..... Mine Safety and Health Administration (Respiratory Protection Division)
Ballston Tower #3 Department of Labor; Arlington, VA 22203

NIST..... National Institute of Standards and Technology
(U.S. Dept. of Commerce) Gaithersburg, MD 20834

NFPA..... National Fire Protection Association
Batterymarch Park, Quincy, MA 02269

NIOSH..... National Institute of Occupational Safety and Health
4676 Columbia Parkway; Cincinnati, OH

OSHA..... Occupational Safety and Health Administration
(U.S. Dept. of Labor)
Government Printing Office; Washington, DC 20402

UL..... Underwriters Laboratories
333 Pfingsten Rd.; Northbrook, IL 60062

1.5 CODES AND REGULATIONS

1.5.1 GENERAL APPLICABILITY OF CODES, REGULATIONS AND STANDARDS

Except to the extent that more stringent requirements are written directly into the contract documents, all applicable code, 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.

1.5.2 CONTRACTOR RESPONSIBILITY

The Asbestos Abatement Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling 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 examination and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. Contractor shall hold the Owner, General Contractor or PIH 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. Abatement contractor incurs all costs of the sampling/analytical to comply with OSHA regulation.

1.5.3 FEDERAL REQUIREMENTS

- A. Federal requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following regulations.
- B. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA):
 - 1. (Occupational Exposure to) Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules Title 29, Part 1926.1101, Section 58 of the Code of Federal Regulations and Respiratory Protection Title 29, Part 1910.1001, Section 134 of the Code of Federal Regulations Construction Industry Title 29, and Section 103, Part 1926, of the Code

- of Federal Regulations.
- 2. National Emissions Standards for Hazardous Air Pollutants (NESHAP), Section 112 of the Clean Air Act; and those asbestos standards contained in Title 40 Code of Federal Regulations, Part 61, Subpart M.
- 3. Asbestos Hazard Emergency Response Act (AHERA), Public Law 99-519, and Title II, Sec. 201, et.seq., of the Toxic Substances Control Act, 15 USC 2601.
- 4. Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the Code of Federal Regulations.
- 5. Hazard Communication Title 29, Part 1910, Section 1200 of the Code of Federal Regulation.
- 6. Specification for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the Code of Federal Regulations.
- C. U.S. Environmental Protection Agency (EPA):
 - 1. Asbestos Abatement Projects Rule 40 CFR Part 762 CPTS 62044, FRL 2843-9 Federal Register, Vol. 50 No. 134, July 12, 1985 P28530-28540.
 - 2. Regulation for Asbestos, Title 40, Part 61, Sub-part A of the Code of Federal Regulations

1.5.4 STATE REQUIREMENTS

- A. Department of Environmental Protection
10 Commerce Way
Woburn, MA 01801
- B. Commonwealth of Massachusetts
Executive Office Of Labor and Workforce Development
Department of Labor Standards
19 Staniford Street, 2nd Floor
Boston, MA 02114

1.5.5 STANDARDS

- A. Standard which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
 - 1. American National Standards Institute (ANSI)
 - Z9.2-79Fundamental Governing the Design and Operation of Local Exhaust Systems
 - Z88.2 Practices for Respiratory Protection
 - 2. Underwriters Laboratories(UL)
 - 586-90 UL Standard for Safety High-Efficiency, Particulate Air Filters Units, Seventh Edition
- B. Standards which govern encapsulation work include but are not limited to the following:
 - American Society for Testing and Materials (ASTM)
- C. Standards which govern the fire and safety in the asbestos containment areas:

National Fire Protection Association(NFPA)

1. NFPA 241 - Standard for Safeguarding Construction, Alteration and Demolition Operations
2. NFPA 701 - Standard Methods of Fire Tests for Flame-Resistant Textiles and Film
3. NFPA 101 - Life Safety Code

1.5.6 EPA GUIDANCE DOCUMENTS

- A. EPA guidance documents which discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below. These documents are made part of this section by reference. EPA maintains an information number (800)334-8571 and publications can be ordered from (800)424-9065 (554-1404 in Washington, DC).
- B. Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book) EPA 560/5-85-024
- C. Asbestos Waste Management Guidance. EPA 530-SW-85-007.
- D. A Guide to Respiratory Protection for the Asbestos Abatement Industry, **EPA-560-OPTS-86-001.**
- E. (TS 799) 20T July 1990 Guide to Managing Asbestos in Place.

1.5.7 NOTICES

- A. State and Local Agencies: Send written notification as required by state and local regulations including local fire department prior to beginning any work on asbestos-containing materials.
 1. Include the following information in the notification sent to the NESHAPs contact:
 - a. Name and address of Facility.
 - b. Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.
 - c. Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area on other facility components. For facilities in which the amount of friable asbestos materials is less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, explain techniques of estimation.
 - d. Location of the facility being demolished or renovated.
 - e. Scheduled starting and completion dates of demolition or renovation.
 - f. Nature of planned demolition or renovation and method(s) to be used.
 - g. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPs) Asbestos Regulations (40 CFR 61 Subpart M).
 - h. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.
 2. State and Local Agencies: Send written notification as required by state and local regulations prior to beginning any work on asbestos-containing materials as follows: Commonwealth Of Massachusetts - Department of Labor & Workforce

Development\Division Of Occupational Safety and Department of Environmental Protection.

- B. Copies of notifications shall be submitted to the Project Industrial Hygienist for the projects records in the same time frame notification is given to EPA, state, and local authorities.

1.5.8 LICENSES

Maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.5.9 POSTING AND FILING OF REGULATIONS

Maintain one copy of applicable federal, state and location regulations at the job site where workers will have ready, easy and daily exposure to the text.

1.6 PROJECT COORDINATION

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

1.6.1 PERSONNEL

- A. Supervisory Personnel: Shall consist of a qualified general superintendent, and appropriate number of qualified or competent foremen required to complete abatement within contract time.
- B. Non-Supervisory Personnel: Laborers employed for abatement shall meet the minimum qualification criteria described in paragraph C below. Supervisors and laborers will comply with each component of the OSHA Asbestos Standard, 29 CFR 1926.1101.
- C. Minimum qualifications: Asbestos Abatement Contractor assigned Personnel for this project shall meet the following minimum requirements:
 - 1. The Abatement Construction Company: Has completed within the last 3 years, 3 asbestos abatement projects of comparable complexity and dollar value with this project; has not been cited and penalized for major violations of asbestos regulations during the last 3 years; carries liability insurance for asbestos abatement work; is licensed in the state in which this project is located; and has available equipment, materials and supplies in adequate quantity, capacity and number to perform the work of this project. The Abatement Construction Company shall provide explanation of default(s) on any asbestos project in the last 3 years.
 - 2. Superintendent and Foremen: The superintendent and foremen must meet federal, state, and local requirements for training and licensing for asbestos abatement. The on-site Supervisor must be able to effectively communicate with the workers and tenants and must have a minimum of one year experience in Supervising projects with multiple crews.

3. Laborers: Have Specialized training in asbestos abatement which meets state and local requirements, and meet (as a minimum) the training required by AHERA (see Sec 206 of the Toxic Substances Control Act).

1.6.2 CONTINGENCY PLANS AND ARRANGEMENTS

Prepare a contingency plan for emergencies including fire, accident, failure of power, failure of negative air system, failure of supplied air system or any other event that may require modification of standard operating procedures during abatement. Include specific procedures to ensure safe exiting and to provide medical attention in the event of an emergency. Post the telephone numbers and locations of emergency services including fire, ambulance, doctor, hospital, police, power company and telephone company in the clean room of personnel decontamination facilities and/or at the staging area. Notify all these emergency services as to the danger of entering the containment area, and invite them to participate in an informal training program by the qualified I. H. on relevant aspects of asbestos abatement. Provide assistance on developing contingency plans for responding safely and efficiently to any emergency during abatement. Provide and clearly indicate the location of approved fire extinguishers for every 10,000 sq. ft. and train the asbestos crew on the use of the equipment. Standards such as NFPA 241, "Safeguarding Construction, Alteration and Demolition Operations, 1993", shall be followed to ensure a safe environment during construction.

1.6.3 SECURITY

Provide a 24-hour security system, which consists solely of a guard and log book to ensure that every entry to the containment will be logged in and that only properly trained and outfitted workers will be allowed to enter when the work area is not locked. Entrance will be allowed also to any authorized Project Industrial Hygienist, and inspectors from regulatory agencies if properly fitted with protective clothing and respirators. Security during non-working hours shall consist of securing all entrances to the work area by means of a padlock. A copy of the keys or combinations to these locks shall be provided to the Owner and Owners Representative. The abatement contractor shall provide a 24 hour emergency response telephone number to the owner in the event of an engineering control failure within the work area.

1.7 RESPIRATORY PROTECTION

1.7.1. GENERAL:

Provide respiratory protection in accordance with these specifications, the OSHA regulations 29 CFR 1910, Section 1001, 29 CFR 1910.134 and 29 CFR 1926.58, EPA regulations 40 CFR 763.120, 121, ANSI standard Z88.2-1992, CGS Pamphlet G-7 and specification G-7.1, the NIOSH and MSHA standards and the following state and local requirements. In case of conflict, the most stringent requirements are applicable for this project.

1.7.2. RESPIRATORY PROTECTION PROGRAM (RPP):

Develop, implement and maintain a respiratory protection program consisting of the following elements:

- A. Written statement of company policy, including assignment of individual responsibility, accountability, and authority for required activities of the respiratory protection program.
- B. Written standard operating procedures governing the selection and use of respirators.
- C. Respiratory selection (from NIOSH/MSHA approved and certified models) on the basis of hazards to which the worker is exposed.
- D. Medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required.
- E. User training in the proper use and limitations of respirators (as well as a way to evaluate the skill and knowledge obtained by the worker through training).
- F. Respiratory fit testing.
- G. Regular cleaning and disinfecting of respirators.
- H. Routine inspection of respirators during cleaning, and at least once a month and after each use for those respirators designated for emergency use.
- I. Storage of respirators in convenient, clean, and sanitary locations.
- J. Surveillance of work area conditions and degree of employee exposure (e.g., through air monitoring).
- K. Regular inspection and evaluation of the continued effectiveness of the program.
- L. Recognition and resolution of special problems as they affect respirator use (e.g., facial hair, eye glasses, etc.)
- M. Proper respirator use (procedures for donning and doffing respirators when entering and exiting the abatement area).

1.7.3. WRITTEN STATEMENT OF COMPANY POLICY:

Provide a written statement of intent to provide a safe and healthful work place for workers. Written statement shall include assignment of individual responsibility, accountability, enforcement procedures and authority for required activities of the RPP.

1.7.4. THE RPP COORDINATOR:

Responsibility and authority for administering the entire RPP shall be with the Asbestos Abatement Contractor designated and qualified Respiratory Protection Program Coordinator (RPPC). The minimum qualifications of the designated RPPC are:

- A. The RPPC shall write the operating procedures for the RPP and shall be responsible for ensuring coordination and direction of the RPP. RPPC shall ensure that the employees wear the appropriate personal protective equipment and are trained in the use of appropriate methods of exposure control. In addition, the RPPC shall be responsible for purchasing approved respirators, issuing respirators, controlling inventory and recordkeeping. Recordkeeping shall include a list of employees who are trained in respirator use, medical records of each respirator user, results of any pre- or post-training evaluations of workers' knowledge and hands-on skill, documentation of

respirator care and maintenance, verification that respirators have been inspected for defects, airborne concentrations of asbestos and descriptions of any problems encountered during abatement.

1.7.5. WRITTEN RPP PROCEDURE FOR SELECTION AND USE OF RESPIRATORS:

The RPP shall include a written procedure for selection and use of respirators. Procedures shall be written clearly and simply for the workers to understand and use. Provide a copy of this procedure to the Project Industrial hygienist as part of Asbestos Abatement Contractor qualification sheet to be completed and submitted upon notification by the Prime Contractor. Maintain an extra copy at the job site for ready reference by any authorized employee or visitor.

1.7.6. RESPIRATORS FOR ABATEMENT OPERATIONS:

Respiratory protection for abatement operations shall be in compliance with 29 CFR 1926.1101(h.) Respiratory Protection.

1.7.7. SPECIAL CONSIDERATIONS FOR RESPIRATOR WEARERS:

Determine whether an employee is capable of wearing and using a respirator. Submit a certificate for each employee on the abatement job, signed by the examining physician and stating employee is fit to perform all duties as assigned for asbestos abatement.

1.7.8. WORKER AND SUPERVISOR TRAINING:

Provide formal instructions in the proper use of respirators to workers and supervisors. The supervisors shall have a more comprehensive training in addition to the basic worker training. Submit copies of employees' certificates or proof of attendance and a copy of course outline along with name and address of instructor. Furnish proof that instructor has satisfactorily completed the OSHA respirator course or its equivalent.

1.7.9. RESPIRATOR FIT TEST:

- A. Perform a quantitative fit test (QNFT) in accordance with OSHA regulations 29 CFR 1926.58, Appendix C, to determine satisfactory fit with any respirator which creates a negative pressure in the facepiece, such as negative-pressure air-purifying respirator or a SAR fitted with an emergency HEPA filter as back-up. Submit QNFT results for each abatement employee.
- B. Routine donning of respirators with tight fitting facepiece requires negative and positive pressure test to ensure adequate sealing fit. This shall be performed by the wearer prior to each entry into the work area.
- C. Negative pressure test: For SCBA, SAR/SCBA, and SAR, block the end of the breathing tube with the palm of the hand and for negative pressure air-purifying respirators close off

the cartridge(s) or filter(s) by covering with the palms of the hands. The wearer shall inhale gently and hold breath for at least 10 seconds. The facepiece shall collapse slightly without inward leakage of air into the facepiece.

- D. Positive pressure test: For SCBA, SAR/SCBA, SAR and for negative pressure air-purifying respirators, the exhalation valve is closed off and wearer exhales gently for at least 10 seconds. A slightly positive pressure shall be built up inside the facepiece without any outward leakage of air from the facepiece.

1.7.10. CLEANING, DISINFECTION, INSPECTION, REPAIR AND STORAGE:

Respirators shall be cleaned after each use by the wearer at the end of each shift. Collect all respiratory at the change room of the PDF for additional inspection and cleaning. Perform continuous inspection of respirators to identify malfunctions. Inspections shall be performed in accordance with manufacturer's instructions. Repair of respirators and replacement of parts shall be done either by the manufacturer or an individual with special training and certification from the manufacturer. Replacement parts for respirators shall be from the manufacturer of the respirator only. Substitution of parts from a different brand or type of respirator, or unauthorized modification will void the approval of the respirator. Store respirators in a convenient, clean, and sanitary location to ensure proper function when used. Protect against dust, chemicals, sunlight, excessive heat or cold, and mechanical damage. Store thoroughly dried respirators in sealed plastic bags or in containers with tight-fitting lids.

1.7.11. REGULAR PROGRAM EVALUATION AND SPECIAL PROBLEMS OF USE:

- A. The RPPC shall periodically assess the effectiveness of the respiratory protection program during all phases of asbestos abatement operations. Frequent walk-through inspections during abatement activities shall be conducted to monitor and document supervisor and worker compliance with requirements of the program. In addition to general assessment of the overall respiratory protection program, specific evaluations of the respirator cleaning, inspection, maintenance, repair, storage, and use procedures shall be frequently conducted to ensure that the desired results of these operations are consistently achieved.
- B. The following special problems shall be addressed and resolved, if encountered when wearing respirators.
1. Facial hair, including beards, sideburns, moustaches or even a few days of growth of stubble shall not allowed for employees wearing tight fitted facepieces because a proper seal between the facepiece and the face will be prevented.
 2. Ordinary eyeglasses shall not be used with full-face respirators. Special corrective lenses are available from all manufacturers and shall be permanently mounted by an individual designated by the manufacturer as qualified to install accessory items. Eyeglasses and goggles may interfere with the half facepieces. In this case, a full facepiece with special corrective lenses as installed by manufacturer shall be provided. Contact lenses will not be allowed with any type of respirator.
 3. Facial deformities which prevent tight seal are scars, deep skin creases, prominent

cheekbones, severe acne and the lack of teeth or dentures.

1.7.12. PROPER RESPIRATOR USE PROCEDURES:

Establish a well defined procedure for donning and doffing of respirators when entering and exiting the work area through the PDF. Donning and doffing of respiratory protective devices and work clothes shall be accomplished using the “BUDDY” system, involving two employees assisting each other to ensure full and satisfactory compliance with the establish procedures. Established written procedures for proper respirator use shall be in accordance with the requirements described in the EPA/NIOSH publication EPA-560-OPTS-86-001 titled “A Guide to Respiratory Protection for the Asbestos Abatement Industry”. The procedures described in this document for clean room (entry), shower room (entry), equipment room (entry), work area, equipment room (exit), shower room (exit), and clean room (exit) for pressure-demand SAR and pressure-demand SAR/SCBA are made by reference part of this specification.

1.8. WORKER PROTECTION:

1.8.1. TRAINING PRIOR TO ENGAGING IN ABATEMENT WORK:

Workers will be trained and be capable of showing accreditation based on the AHERA regulation 40 CFR Part 763 in compliance with the Model Accreditation Plan.

1.8.2. 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.

1.8.3. PROTECTIVE CLOTHING:

Provide boots, hard hats, goggles and gloves for all workers. Equipment shall meet OSHA requirements for personal protection. Provide all persons entering the work area with disposable full body coveralls, including hoods and booties.

1.8.4. ENTERING AND EXITING PROCEDURES:

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

- A. 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.
- B. If utilizing a remote decontamination facility the worker will discard the outside dirty suit in a single chamber change room located near the work area and proceed to the three stage decontamination facility for complete decontamination.

1.8.5. DECONTAMINATION PROCEDURES:

- A. Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area with a half face cartridge type respirator:
 - 1. When exiting area, remove disposable coveralls, and all other clothes disposable headcovers, and disposable footwear covers or boots in the equipment room.
 - 2. Still wearing respirators proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid wetting 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 breathe.
 - 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.

1.8.6. 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.

1.8.7 COMPULSORY:

Workers are to wear their respirators provided to them at all times while within the work area including both negative pressure containment as well as glovebag demarcated area.

- A. Supervisors are to inform workers to the potential for exposure to airborne asbestos fibers.
- B. Workers are responsible for insuring that their respirators fit properly and that it is not worn loosely.
- C. The contractor is to warn workers that failure to wear the respirator or to wear it improperly may have ramifications.

1.9 DECONTAMINATION FACILITIES

1.9.1 DESCRIPTION

Provide each work area with separate personnel and equipment decontamination facilities. Ensure that the PDF are 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 equipment decontamination facilities (EDF).

1.9.2 GENERAL REQUIREMENTS

All persons entering and exiting the work area shall 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 decontamination facility and decontaminate as required by these specifications. Construct walls and ceilings of PDF airtight with at least 6 mil. polyethylene sheeting and attach to existing building components or to a temporary framework. Use a minimum of two layers of 6 mil. polyethylene to cover floor under PDF. Construct doors from overlapping polyethylene sheets so that they overlap adjacent surfaces. Weigh sheets at bottom so that they quickly close after release. Put arrows on sheets showing direction of overlap and travel. If building is partially occupied construct solid barrier on the public site to protect sheeting. All solid temporary barriers constructed to isolate work areas from occupied areas shall be of approved non-combustible or flame resistant materials as described in NFPA 241.

1.9.3 PERSONNEL DECONTAMINATION FACILITIES

PDF at containment area

- A. Provide a PDF consisting of serial arrangement of change room, showers room and equipment room. Provide adequately sized PDF to accommodate the number of employees scheduled for the project. The center chamber of the three chamber PDF shall be fitted with a portable walk through shower stalls as necessary so that all employees will be able to go through the entire decontamination procedure. Construct PDF of opaque or colored polyethylene for privacy. Construct PDF so that it will not allow for parallel routes of exit without showering.
- B. Changing Room of PDF: The changing-room of the PDF must be physically and visually separated from the rest of the building for the purpose of worker changing into protective clothing or dressing into street clothing. Construct using 6 mil minimum thickness polyethylene sheeting to provide an airtight room. Provide a minimum of three, three-foot wide flaps in the doorways constructed from sheet polyethylene. One doorway shall be from the outside and one from the shower. Maintain floor of this room dry and clean at all times. Do not allow overflow from shower into this room. Damp wipe all surfaces twice after each shift change with a disinfectant solution. Provide in this room adequate supply of disposable or recyclable bath towels and protective clothing. Require all persons to remove all street clothes in this room dress in disposable or recyclable protective clothes, and respiratory protection equipment. Ensure that any person entering this room will do so either from the outside with street clothes or from the showers completely naked and thoroughly washed. If a female is required to enter or exit the work area make all

necessary provisions to ensure her privacy throughout the decontamination process.

- C. Showers Room of PDF: The showers room of the PDF provides a completely water tight operational compartment to be used for transit of all persons entering the work area from the changing room, or for showering by all persons headed out of the work area after undressing in the equipment room. Construct each stall and shower walls so that water running down the walls will drip into the pan. Separate this room from the rest of the building and the adjacent tool and changing rooms with air tight walls fabricated of a minimum 6 mil polyethylene. Provide splashproof entrances to changing and equipment rooms with two doors arranged as follows:
 - 1. Provide shower heads and controls, temporary cold and **hot** water and drainage, soap dish and continuous supply of soap and maintain sanitary conditions. Arrange controls so that a single individual can shower without assistance. Pump waste water to filtration drain or storage for use as amended water. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to drain. Change filters as necessary to ensure proper filtration. Locate filters inside shower so that water lost during filter changes drains into shower pan. Hose down all surfaces of the showers room after each shift and clean debris from the shower pan. Dispose off residue as asbestos contaminated waste.
- D. Equipment Room of PDF: The equipment room of the PDF provides an airtight compartment to be used to store work equipment, reusable footwear and warm clothing and as a transit and change station. Separate this room from the work area by a minimum 3' wide flap door of 6 mil polyethylene sheeting. Separate this room from the shower room, the work area and other rooms with airtight walls and ceiling constructed of minimum 6 mil flame-resistant polyethylene sheeting. Damp wipe clean all surfaces of the equipment room after each shift change. Provide an additional floor layer of 6 mil clear polyethylene sheeting per shift change and remove contaminated layer after each shift.

1.9.4 PERSONAL DECONTAMINATION FACILITIES

PDF at Glovebag Operation locations and Window Removal Operations

- A. Provide a remote PDF consisting of serial arrangement of change room, showers room and equipment room.
 - 1. The remote PDF will be located in a location agreed upon by the Owner, Owners representative and the Contractor. The remote PDF will be utilized for all glovebag operation areas.
- B. Each Glovebag operation area and window removal operation area will be equipped with a single chamber change room. The workers will be directed to utilize a HEPA vacuum and clean wet wipes to perform a wipe down of their person. Workers will then discard dirty coveralls in a designated asbestos waste bag and dawn new clean full body coveralls and proceed to the remote decontamination facility for complete decontamination.
- C. No worker will be allowed to leave the glovebag operation area and enter into an adjacent space without first HEPA vacuuming them and donning a clean full body coverall.

1.9.5 EQUIPMENT DECONTAMINATION PROCEDURES

Thoroughly wet-clean all equipment and/or sealed polyethylene bags and pass out of the control area into the decontamination facility. Workers from the building exterior shall enter the decontamination facility and remove cleaned equipment and/or containers for disposal. All cleaned equipment and/or containerized waste shall be immediately removed from the direct vicinity of the work area and transferred to either a holding area for equipment or a waste container for ultimate transport to an asbestos waste facility.

1.10 NEGATIVE PRESSURE FILTRATION SYSTEMS

Asbestos Contractor shall provide enough HEPA filtered negative air units to completely exchange the work air 4 times/hour. Contractor shall 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 inches 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 re-circulate the air in the work area at a rate of 4 room air changes per hour.

1.10.1 SUBMITTALS

Before start of work submit design of negative air system. Submittal shall include number, location and size of HEPA units, points of exhaust, projected airflow within work area, anticipated pressure differential and supporting calculations for sizing. In all cases, submit the following:

- A. Manufacturer's product data on the HEPA units.
- B. Methods of supplying adequate power to the units and designation of panels supplying power.
- C. Description of testing methods for correct airflow and pressure differential and manufacturer's product data on pressure differential monitor.

1.10.2 PRESSURE DIFFERENTIAL

Provide a fully operational negative air system within the containment work area continuously maintaining a pressure differential across work area enclosures of -0.02 inches of water. Demonstrate to the PIH the pressure differential by use of a pressure differential meter or a manometer, before disturbance of any asbestos containing materials.

1.10.3 MONITORING

Continuously monitor and record the pressure differential between the work area and the building outside of the work area. If a strip chart recorder is used for monitoring make the

strip chart record part of the project log. If no strip chart is use the Supervisor will document the negative pressure readings periodically throughout the day.

1.10.4 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 PIH.

1.10.5 DEMONSTRATION OF NEGATIVE AIR SYSTEM OPERATION

- A. Demonstrate the operation of the negative pressure system to the PIH to include, but not be limited to the following:
 - 1. Demonstrate pressure differential system will maintain -0.02" of water.
 - 2. Emergency shut-off will operate in case of fire.
 - 3. Positive motion of air across all areas in which work is to be performed. Use smoke tubes to demonstrate air motion. Use a differential pressure meter or manometer to demonstrate a pressure difference of at least -0.02 inches of water across every barrier separating the Work Area from the balance of the building or outside. Modify the negative pressure system as necessary to successfully demonstrate the above.

1.10.6 USE OF SYSTEM DURING ABATEMENT OPERATIONS

NEGATIVE PRESSURE CONTAINMENTS

- A. Start exhaust units before beginning work (before any ACM is disturbed). After abatement work has begun, run units continually 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.
- B. 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.
- C. 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 make-up air.

1.10.7 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, properly remove and dispose of pre-filters, and seal intake while machine is running with 6 mil. polyethylene bag to prevent environmental contamination from the negative air machine.

1.11 CONTAINMENT BARRIERS AND COVERINGS OF WORK AREA

1.11.1 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 clean-up, 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 to the Owner. Provide fire-stopping and identify all fire barrier penetrations due to abatement work.

1.11.2 PREPARATION PRIOR TO SEALING OFF

Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to erection of temporary plastic sheeting enclosure. Remove all uncontaminated removable furniture, equipment, and/or supplies from the work area before commencing work, or completely cover with two layers of polyethylene sheeting, at least 6 mil. in thickness, securely taped in place with duct tape all non-movable items. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached. 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.

1.11.3 CONTROL ACCESS TO WORK AREA

Permit access to the work area only through the personnel decontamination facilities (PDF). All other means of access shall 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 solid barrier on the public side of the sheeting as required by Massachusetts regulation.

1.11.4 CRITICAL BARRIERS

Completely separate the work area from other portion of the building, and the outside by means of two layers of sheet plastic barriers at least 6 mil. in thickness and duct tape. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, connectors and speakers, and other openings into the work area two layers flame-resistant 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 two layers 6 mil. 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.

1.11.5 PRIMARY BARRIERS

- A. Enclose work areas with two layers of 4 mil. plastic sheeting on walls. Install sheeting so that top layer can be removed independently of bottom layer. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc., which cover any part of the surface to be worked on with the work. Cover all walls in work area including critical sheet plastic barriers with two layers of polyethylene sheeting. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the contract documents.
- B. Stairs and Ramps: Where stairs or ramps are covered with plastic protective materials to guard against contamination as well as slip hazard.

1.11.6 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 shall start immediately after contamination is discovered and work will stop in work area. Decontamination procedures will continue until the area has successfully passed the criteria for clearance under the AHERA regulation and 453 CMR 6.00.

1.12 MONITORING, INSPECTION AND TESTING

1.12.1 GENERAL

- A. Perform throughout abatement work monitoring, inspection and testing inside the work area in accordance with OSHA requirements and these specifications. The PIH shall periodically inspect and review the performance of the Contractor and monitor conditions inside the work area to ensure compliance with these specifications. In addition, the contractor shall personally manage air sample collection, analysis and evaluation for personnel and work area samples to satisfy OSHA requirements. The Asbestos Abatement Contractor Supervisor is responsible for performing post remediation verification prior to the Project Monitor final clearance inspections. Additional inspection and testing requirements are specified in other parts of this section.
- B. The PIH consulting firm and the Project Monitor on behalf of the Owner will manage the necessary monitoring, inspection, testing of the abatement work to ensure that the abatement work proceeds in accordance with these specifications and the abated areas have been successfully cleared of asbestos containing pipe elbows and fittings. The work of the PIH consultant in no way relieves the asbestos 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.

- C. The Owner shall bear the cost in connection with the laboratory work required above by the Owner's PIH firm for the initial analysis, however the cost of all subsequent laboratory analysis taken because the limits specified were exceeded, shall be borne by the Asbestos Abatement Contractor. The cost of the Owner's, PIH consultant and his services will be born by the Owner except for repeated final inspection and testing that may be required due to unsatisfactory initial results. These repeated final inspections and testing, if required, will be paid for by the Asbestos Abatement Contractor.
- D. Asbestos contractor may request confirmation of above results. This request must be in writing and submitted to the owner. Cost for the confirmation of results will be born by the asbestos 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 PIH.

1.12.2 MONITORING, INSPECTION AND TESTING BY ABATEMENT CONTRACTOR

The abatement contractor is responsible for managing all monitoring, inspection and testing required by these specifications and the OSHA regulation 29 CFR 1926.1101. The contractor is responsible for his/her employees and for providing safe conditions inside the work area for all authorized persons entering a work area. The analytical laboratory that will be used by the abatement contractor to analyze the samples shall be accredited. The Contractor will keep a daily log of personnel and area samples taken and analyzed and make such log available to the PIH. Log shall contain information on the person sampled, tasks being performed during sampling, the date of sample collection the time of sample start and finish, flow rate, sample volume and fibers/cc.

1.13 STANDARD OPERATING PROCEDURES (SOP)

- A. Asbestos Contractor shall have established a standard operating procedure (SOP) in printed form and loose-leaf folder consisting of simplified text, diagrams, sketches and pictures that establish and explain clearly the ways and procedures to be followed during all phases of work by his employees. The SOP must be modified as necessary to address any specific requirements of the project and shall be submitted for review and approval prior to the start of any abatement work. The minimum topics and areas to be covered by the SOP are as follows. The standard operating procedure shall be submitted in writing to the owner retained IH form for advance approval in compliance with Section 1.14
- B. Minimum Personnel Qualifications.
- C. Contingency Plans and Arrangements.
- D. Security and Fire and Safety in the Workplace.
- E. Respiratory Protection Systems and Training.
- F. Worker Protection, Medical Examinations, Recordkeeping, Protective Clothing, entering and Exiting Procedures.
- G. Work Area Limitations.

- H. Decontamination Facilities
- I. Negative Pressure Systems.
- J. Containment Barriers and Coverings of Work Area.
- K. Monitoring, Inspection and Testing.
- L. Removal of ACM and ACE.
- M. Glovebag Application.
- N. Project Decontamination.
- O. Work Area Clearance.
- P. Disposal of ACM and ACE Waste
- Q. Project Close-out.

1.14 SUBMITTALS

1.14.1 PRE-CONSTRUCTION SUBMITTALS

- A. Submit to the building owner and/or their representative (PIH) a minimum of 7 days prior to the pre-construction meeting the following for review and approval. **Conformance to these requirements is a prerequisite for the pre-construction meeting of this project.**
- B. Detailed work schedule for the entire project reflecting contract documents and the phasing and schedule requirements.
- C. Staff organization chart showing all persons to be employed in what capacity. Their identification and qualifications. Provide evidence of qualifications, training and licensing.
- D. Tailor made standard operating procedure for this project with a work schedule, placement of HEPA units, PDF and containment barriers etc. prepared by the sub-contractor, dated and signed. This abatement plan shall be detailed and site specific.
- E. The specifics of the material and equipment to be used for this project with brand names, model numbers, performance characteristics, pictures or diagrams, and number available, for the following:
 - 1. Air supply system, negative pressure air units, HEPA vacuum, air monitoring pumps and calibration devices, pressure differential monitor/recorder and emergency power systems.
 - 2. Waste water filtration system, shower stall and containment barriers.
 - 3. Encapsulant sprayers, low pressure water sprayers, bridging encapsulant, glove-bags, removal tools and fire extinguishers.
 - 4. Respirators and protective clothing.
 - 5. Fire and Safety equipment to be used in the abatement areas.
- F. Name, location and phone number of the landfill, proof that landfill is approved for ACM disposal, the type of trucks for waste transportation, and if a waste disposal sub-contractor will be used, provide name, permits for disposal if applicable, address and phone number of sub-contractor.
- G. Copies of specific notifications and arrangements made with regulatory entities having jurisdiction and the specific contingency arrangements made with local health, fire and safety authorities and any other notifications and arrangements required by the

specification.

- H. Name, location and qualification of the analytical laboratory to be used for the analysis of samples required to meet OSHA regulations 29 CFR 1926.
- I. Qualifications Verification: Submit the following evidence of qualifications. Ensure that all references are current and verifiable by phone numbers provided and documentation submitted.
 - 1. Abatement Construction Company:
 - a. Project Experience. Submit information for projects completed within last 3 years, 3 of which are of comparable complexity and dollar value.
 - b. Submit the following information for project(s) halted, an owner, A/E or I. H. consultant in last 3 years: To include name of project, reason for action, date of action, and a reference name and phone number.
 - c. List all violations of asbestos abatement regulations, including citations, penalties, damages paid, and legal actions taken against the company in last 3 years. Provide full references for easy verification.
 - d. List, with full explanations, default(s) on any asbestos abatement project within the last 3 years.
 - 2. Personnel:

Provide a resume; address each item specifically and completely, provide references, phone numbers, copies of certificates, etc. Provide an affidavit signed by contractor stating that all personnel submitted below have medical records in accordance with OSHA 29 CFR 1926.58 and the company follows a medical surveillance program and recordkeeping in accordance with regulations.

 - a. Superintendent and Foremen: Name, years of abatement experience, years of abatement experience as superintendent and as foreman, certificate of courses of specialized training (must include certificate showing completion of MAP training), and maximum number of laborers supervised in anyone project. Medical certificate and licenses.
 - b. Laborers: Name, years of abatement experience, certificates of training courses in asbestos abatement (must include certificate showing completion of MAP training) and respiratory protection, qualitative/quantitative fit test (y, n), state certification.

1.14.2 SUBMITTALS DURING ABATEMENT

- A. Maintain a daily log at the job site documenting the dates and times of the following: Meetings, purpose, attendees and brief discussion; all persons entering/exiting work area; special or unusual events, such as barrier breeching, equipment failures, emergencies and any cause for stop of work; air monitoring tests and test results; submit complete daily log to the PIH.
- B. The abatement project supervisor shall document the following events during abatement and submit to the PIH:
 - 1. Inspection of work area preparation prior to start of abatement and daily during work.
 - 2. Removal of any polyethylene barriers.

3. Removal and disposal of waste material from work area.
4. Decontamination of equipment. Provide list of item.
5. Disposal of ACM and ACE Waste Materials: Submit copies of all manifests and landfill receipts to the PIH for the Owner on a weekly basis.

1.14.3 SUBMITTALS AT COMPLETION OF ABATEMENT

The abatement sub-contractor shall submit to the PIH an asbestos report consisting of the daily log book and the documentation of events during abatement including the original disposal manifests signed by operator of licensed landfill. All original disposal manifests are due to the Owner within 30(thirty) days after completion of abatement work.

PART 2 - PRODUCTS AND MATERIAL

2.1 MATERIALS AND EQUIPMENT

2.1.1 PREPARATION

- A. Prior to the start of the work sub-contractor shall provide and maintain a sufficient quantity of materials and equipment to assure continuous and efficient work throughout the project. Do not start work unless the following items have been delivered on site and the sub-contractor has submitted verification to the building owner to this effect:
- B. Polyethylene sheeting 6 mil., moisture resistant duct tape capable to continuously seal polyethylene through project abatement duration, glovebags, wood studs, plywood/gypsum wall board, posters, signs and notices as appropriate.
- C. Negative pressure units to provide 4 air changes per hour in work areas plus two reserve units able to replace any malfunctioning HEPA unit without delay, HEPA vacuum cleaners to allow for a minimum of two, two-man teams, low volume air pumps and loaded filter cassettes for air monitoring, differential pressure gauge.
- D. Scrapers, brushes, staple guns, shovels, ladders and scaffolds of suitable height and length (as appropriate), water hose to reach all areas, airless spray equipment, and other hand tools, electric cords, electric power with GFCI protection;.
- E. Impermeable drums and/or 6 mil polyethylene bags for asbestos containing waste; spray adhesive free of methylene chloride.
- F. Respirators, disposable protective clothing, goggles, gloves and footwear.

2.1.2 PACKAGING OF MATERIALS AND EQUIPMENT

Deliver materials to the job site in their original packaging or containers. Store all materials away from damage, weather, and contamination. Protect polyethylene from cold exposure. Do not store flammable material inside buildings. Inspect material regularly for damage, deterioration or contamination. Discard any damaged material. Discard ACM per these specifications. Do not block or hinder use of buildings by other trades, employees and authorized visitors of the Owner in partially occupied buildings by placing material in any unauthorized place.

PART 3 - EXECUTION

3.1 PRE-ABATEMENT ACTIVITIES

3.1.1 PRE-ABATEMENT MEETING

The Project Industrial Hygienist upon receipt, review and substantial approval of all pre-abatement submittals and upon verification by the abatement contractor that all material and equipment required for the project are ready to mobilized, will arrange for a pre-abatement meeting between the abatement contractor, superintendent and foremen, the PIH and the Owner. The purpose of the meeting is to discuss any aspects of the submittals needing clarification or amplification and to discuss any aspects of the project execution and the sequence of operation. The abatement contractor and his employees shall be prepared to provide any supplemental evidence and information to the PIH and Owner pertaining to any aspects of the submittals or the material and equipment. Upon satisfactory resolution of any outstanding items or questions, the Owner will issue a written order to proceed to the Abatement Contractor. No abatement work of any kind described in the following provisions of these specifications shall be initiated prior to the written order to proceed.

3.1.2 PRE-ABATEMENT INSPECTION AND PREPARATIONS

- A. Before any work begins the asbestos abatement contractor will:
 - 1. Conduct a space-by-space inspection and identify potential safety concerns in those spaces where asbestos removal work will occur. Still or video photography may be used to supplement this written inventory.
 - 2. The abatement contractor will notify the owner on systems that need to be shut down at least ten days in advance. The Owner shall coordinate shutdown with abatement contractor.
 - a. Shutdown and seal off all heating, cooling, ventilating or other air handling system serving the work area. The environment of the work area shall be completely isolated from all other air flows in the building. The building owner will assist in 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.

3.1.3 PRE-ABATEMENT CONSTRUCTION AND OPERATIONS

- A. 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.

- B. Secure the approval of the Owner retained PIH firm prior to the start of work for the following:
 - 1. Enclosure, critical barrier, shower, personnel protection and decontamination procedure and exposure control system.
- C. Upon completion of all preparatory work the PIH will inspect the work and systems and will notify the building owner when such work is in accordance with these specifications.
- D. PIH shall document the pre-abatement activities described above and deliver a copy to the building owner.
- E. Upon satisfactory inspection of the installation and systems and satisfactory demonstration of operations the PIH will notify the abatement contractor to proceed with abatement work.

3.2 REMOVAL OF ACM

3.2.1 WETTING MATERIALS

- A. Thoroughly and adequately wet and remove all ACM pipe insulation as follows:
 - 1. Surfactant (Amended Water): All water used for wetting of asbestos containing and contaminated materials during removal and cleaning operations shall be amended through the addition of a surfactant mixed and applied in accordance with manufacturer's instructions.
 - 2. Spray wetting agent on ACM. Inside glovebag, perforate outer covering of any pipe insulation which has been painted and/or jacketed in order to allow penetration of amended water or wetting agent, to minimize dispersal of asbestos fibers into the air.
 - 3. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions.
 - 4. For floor tile removal, mist the area and wet the floor to allow removal to be conducted in a wet condition.
 - 5. After wetting, seal all ACM waste in leak-tight containers while wet. For waste material not fitting into containers without additional breaking, put material into leak-tight wrapping. Floor tiles must be packaged in woven poly sacks similar to burlap bags or lined waste drums. Inner lining cannot be broken and must remain as an air tight seal.
 - 6. Label containers and wrapped material using warning labels as specified by OSHA 29 CFR 1910.1001 or 1926.1101.
 - 7. 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 as per NESHAPS.

3.2.3 REMOVAL OF ACM PIPE INSULATION USING GLOVEBAG TECHNIQUE

Glovebag procedures for removal of pipe insulation shall be conducted using commercially available glovebags of six mil clear polyethylene or equivalent, appropriately sized for the project. Negative air pressure may be provided by HEPA vacuum cleaning equipment. Glovebags may not be altered.

- A. Each employee shall don an appropriate HEPA filtered respirator approved for asbestos and check the fit using the positive/negative fit check.
- B. Each employee shall don a disposable full-body suit including hood and boots, boots shall not be cut from the suit.
- C. All necessary tools and materials shall be brought into the work area before the glovebag procedure begins.
- D. The air sampling professional shall collect the following air samples in glovebag area:
 - 1) Area air samples prior to the glovebag operation.
 - 2) Area air samples during the glovebag operation.
- E. Glovebag procedures shall be performed by a minimum of two licensed asbestos workers trained in glovebag procedures and equipped with full personal protective equipment. Full personal protective equipment means the entire body is covered with disposable clothing including head, torso, arms, legs and feet. Hands may be left exposed to provide greater mobility. Respirator protection shall be provided and shall consist of a minimum of an air purifying respirator with a HEPA filter.
- F. Place the inspected glove bag with the tools in it around the pipe. Snug it up to the bottom of the slits in the sides. Holding the upper end tight, seal the two ends of the glove bag with several secure wraps of duct tape, securely attaching the ends to the pipe. At this point, you should have about 6" of bag above the top of the pipe. Tape the slit above the two points of attachment with duct tape. This will produce a crown effect so you can work on top of the pipe. Fold over neatly several times the horizontal slit along the top of the bag using about a one inch fold each time, staple it securely and then tape it several times with duct tape, effecting an air-tight bag attached to the pipe.
- G. A HEPA vacuum will be inserted into each glovebag and used to evacuate the air and aid in cleaning of the bag.
- H. The integrity of the glovebag seal shall be smoke tested. The contents of a smoke tube shall be injected through the water port access of the bag. After sealing the access, the bag shall be manipulated and squeezed gently to check for leakage points, which are then taped airtight.
- I. The spray tip of a hand held sprayer filled with amended water will be inserted into water port access of the glovebag and used to wet the asbestos containing material.
- J. The ACBM within the secured glovebag shall be wetted with amended water prior to removal.
- K. Have one person place his hands into the long-sleeved gloves while the second person directs the water spray at the work. Use talcum powder for the sleeves/gloves to absorb perspiration as necessary.
- L. After the insulation has been removed, the unprotected pipe shall be sprayed with amended water and scrubbed with a bristle or nylon brush to remove all visible ACBM.

The pipe, the interior of the bag, the protected insulation to remain and the tools shall then be sprayed with amended water and washed clean. The enclosed atmosphere shall be misted, and sufficient time shall be allowed for the mist to settle.

- M. When the work is complete, spray the upper portion of the bag and clean-push all residue into the bottom of the bag with the other waste material. Be very thorough. Use adequate water.
- N. Put all tools, after washing them off in the bag, in one of the sleeves of glove bag and turn it inside out, drawing it outside of the bag. Twist the sleeve tightly several times to seal it and tape it several tight turns with duct tape. Cut through the middle of the duct tape and remove the sleeve. Put the sleeve in the next glove bag or put it in a bucket of water to decontaminate the tools after cutting the sleeve open.
- O. A HEPA vacuum shall be used for evacuation of the glovebag in preparation for removal of the bag from the pipe or duct, for clean-up in the event of a spill, and for post project clean-up.
- P. With the glovebag collapsed and the ACBM in the bottom of the bag, the bag shall be twisted several times and taped to seal that section during bag removal.
- Q. Slip a six mil polyethylene appropriately labeled asbestos disposal bag over the glovebag while it is still attached to the pipe. Remove the tape securing the ends, and slit open the top of the glove bag and carefully fold it down into the disposal bag.
- R. The asbestos-contaminated waste, the clean-up materials, and protective clothing shall be wetted sufficiently, double-bagged minimizing air content, sealed separately, and disposed of in conformance with other sections of this specification.

3.2.4 REMOVAL OF VINYL ASBESTOS FLOOR TILE (VAT) AND MASTIC

- A. Remove vinyl-asbestos floor tile (VAT) and mastic in accordance with these specifications and with DLS, DEP, OSHA and EPA regulations.
- B. Remove VAT so that it does not become friable during removal. After removal of VAT and mastic, proceed with decontamination and final inspection and testing of the work area as specified elsewhere in this section.
- C. Removal of VAT shall be performed with wet methods and hand scrapers. Heating or the application of dry ice may be used with pre-approval. Power tools grinders or other machines which may produce any dust during removal of VAT and mastic are not allowed.
- D. Removal of mastic will be conducted with low odor mastic remover. At the contractors discretion flooring substrate may be removed and discarded as asbestos contaminated in lieu of mastic removal.

3.2.5 REMOVAL OF ACM WINDOW GLAZING

- A. Window glazing on the older style windows is asbestos containing. Newer windows

which are factory sealed do not contain asbestos contaminated caulking or glazing.

B. Isolation of the work area:

1. Seal all appropriate window openings with two layers of 6 mil poly sheeting from the interior of the building.
2. Apply critical barriers and signs to exterior doors which may provide access to the cordoned off outside work space.
 - a. A Drop cloth shall be provided exterior to the building and shall extend twenty feet from the building, sealed to the building to prevent any debris from falling onto the ground.
 - b. Doors with critical barriers where applicable shall be locked from the public side if they can be opened from the Asbestos Abatement side as they may provide emergency exits to abatement workers from the outside of the building.

C. Method of Removal - Window Glazing Compounds

1. Provide a critical barrier on the interior of the window wall to be abated. This shall be comprised of two layers of 6 mil. poly sealed to the ceiling floor and walls. Removal of the window walls shall be from the exterior of the building.
2. A drop cloth for ground cover shall be placed tight to the building and extend twenty feet (20') out from the building running the length of the curtain wall sealed to the building with duct tape. Sheets of 6 mil. polyethylene shall be used to provide the ground cover.
3. As necessary plywood shall be used below the poly sheeting on the ground to supply a firm surface for staging and packaging of waste.
4. Workers shall wear disposable protective clothing, respiratory protection and eye/hand protection as necessary.
5. Provide a remote decontamination facility for the workers to shower at the completion of a shift or at breaks in the work.
6. All work shall be performed from the exterior of the building under low wind conditions and using amended water to adequately wet the materials.
7. Clean all openings completely using scrapers, HEPA vacuums and wet cleaning methods.
8. The use of staging or lifts will be necessary to access all sections of the components to be removed. Fall protection shall be observed in accordance with all relative OSHA regulations.
9. Window panels shall be lowered to the ground cover and wrapped in two layers of 6 mil poly, sealed with duct tape and labeled appropriately for disposal as asbestos containing/contaminated building material.
10. All asbestos waste, drop cloths, critical barriers, disposable clothing, etc. shall be properly containerized and disposed of as ACM.

3.2.6 DELIVERY AND STORAGE

- A. Deliver materials to the job site in original, new and unopened packages and containers**

bearing manufacturer's name and label, and following information:

1. Name or title of material
2. Manufacturers stock number and date of manufacture
3. Manufacturer's name
4. Thinning instructions
5. Application instructions

- B. Deliver materials together with a copy of the OSHA Material Safety Data Sheet for the material. MSDS shall be received and reviewed prior to approval of materials to be used.

3.3 DISPOSAL OF ACM AND WASTE MATERIAL

3.3.1 GENERAL

Dispose ACM and debris which is packaged in accordance with these specifications at the approved landfill. Ensure ACM transport vehicles are properly marked per NESHAPs requirements. Location for a waste trailer or dumpster shall be coordinated with and approved by the owner and PIH.

3.3.2 PROCEDURES

- A. Carefully load containerized (double bagged and /or drummed) waste on sealed trucks for transport. The truck or dumpster shall be lined with poly before loading with waste bags. Ensure that unauthorized persons do not have access to the material outside of the work area. Take bags or drums from the work area directly to a designated area within the building as necessary prior to loading in waste containers for transport to the waste facility.
- B. Advise the sanitary landfill operator, at least twenty-four hour in advance of transport, of the quantity of material to be delivered. If bags are broken or damaged, leave in the truck and decontaminate entire truck and contents using procedures set forth elsewhere in this section.

3.4 PROJECT DECONTAMINATION

3.4.1 GENERAL

The entire work of project decontamination shall be performed under the close supervision and monitoring of the PIH.

3.4.2 WORK AREA CLEARANCE

Air testing and other requirements which must be met before release of abatement contractor are specified elsewhere in this document.

3.4.3 WORK DESCRIPTION

- A. The work of decontamination includes the decontamination of the air within the contained work area (negative pressure containment, glovebags and window barriers) and the decontamination and removal of temporary facilities installed prior to abatement work including Primary and Critical Barrier, Decontamination Facilities (PDF) and Negative Pressure Systems.
- B. The work of decontamination includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the contained work area (negative pressure containment and glovebags), and all abated window framing.
- C. The work of glovebag removal includes the removal of all hard packed elbows and fittings and pipe runs located in the un-occupied section of the second floor.
- D. The work or removal within a negative pressure containment includes the removal of all floor tile and mastic in the occupied section of the third floor.

3.4.4 PRE-DECONTAMINATION CONDITIONS INSIDE NEGATIVE PRESSURE CONTAINMENT

- A. Before decontamination work starts, all ACM from the work area shall be removed, all waste collected and removed, and disposed of along with any gross debris generated by the work.
- B. At the start of work for decontamination, the following will be in place:
 - 1. Primary barrier consisting of two layers of polyethylene sheeting on walls.
 - 2. Critical barrier which form the sole barrier between the work area and other portion of the building or the outside.
 - 3. Critical barrier sheeting over lighting fixtures and clocks, ventilation openings, doorways, connectors, speakers and other openings.
 - 4. Decontamination facilities in operating condition and negative pressure system in operation.

3.4.5 FIRST CLEANING

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/or 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. Recyclable cleaning cloths shall be disposed in appropriately marked containers. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces as well as no other debris or residue. Remove all filters in air handling system(s) and dispose of as asbestos containing waste in accordance with requirements of these specifications. Maintain negative pressure system in operation for the entire 24 hour period.

3.4.7 SECOND CLEANING:

- A. Perform a thorough cleaning of all surfaces of the work area. Clean to a point in which there is no accumulation or signs of visible debris, ACM or dust in the work area.

Immediately following the cleaning, remove and containerize all poly sheeting which comprises the primary barriers, leaving only the following barrier and facilities.

- B. Critical barrier which forms the sole barrier between the work area and other portions of the building or the outside.
- C. Critical barrier sheeting over lighting fixtures and clocks, ventilation openings, doorways, connectors, speakers and other openings.
- D. Decontamination facilities for personnel in operating condition.
- E. Negative pressure system in continuous operation.

3.5 FINAL INSPECTION AND TESTING

3.5.1 GENERAL

Notify the PIH with adequate time in advance for the performance of the final visual inspection and testing. The final visual inspection will be performed by the PIH and the asbestos abatement contractor Supervisor. Final aggressive clearance sampling will be performed by the PIH. Adequate power will be supplied by the asbestos abatement contractor to aid in the collection of final clearance air samples.

3.5.2 FINAL INSPECTION

A. Negative Pressure Containment

Final inspection will include the entire work area (negative pressure containment, glovebags or window openings and barrier), the personnel decontamination facilities, all plastic sheeting, seals over ventilation openings, doorways, windows and other openings. If any debris, residue on surfaces, dust or other matter is noted the area will not pass the final visual inspection and will be re-cleaned until the criteria of “no visible debris” is met as per MA CMR 453 CMR 6.14(5)(a). Dust samples may be collected and analyzed at the discretion of the PIH to confirm visual finding. When the area is visually clean the final testing will commence.

B. Glovebag Area

Final inspection will include the pipe and all other areas within the glovebag. Glovebags will not be removed until each is inspected. If final visual inspection does not yield a “no visible debris” criterion areas will be re-cleaned until such criteria is met.

C. Window Glazing

Final inspection will include the window opening and barrier inside the window opening and area around the window opening. If final visual inspection does not yield a “no visible debris” criterion areas will be re-cleaned until such criteria is met.

3.5.3 FINAL TESTING OF NEGATIVE PRESSURE CONTAINMENT

- A.** After a satisfactory final visual inspection the PIH will undertake the final testing. Air samples will be taken and analyzed in accordance with the procedures for PCM as specified elsewhere in this section. If release criteria are not met, the sub-contractor shall repeat final cleaning and continue decontamination procedure from that point. Additional inspection and testing will be at the expense of the asbestos abatement contractor.

3.5.4 FINAL TESTING PROCEDURES

A. Asbestos Contractors Release Criteria:

1. Work in a negative pressure containment is complete when the work area is visually clean and airborne fiber levels are compliant with the criteria of 453 CMR 6.14(5)(b)2

B. Air Monitoring and Final Clearance Sampling: To determine if the elevated airborne fiber counts anticipated during abatement operations have been reduced to the specified level, the PIH will secure samples and analyze them according to the following procedures:

1. **Fibers Counted:** “Fibers” referred to in this section shall be all fibers regardless of composition as counted and defined in the NIOSH 7400 Method.
2. **Aggressive Sampling:** All final air testing samples will be taken using aggressive sampling techniques. Before sampling pump are started, the exhaust from forced air equipment (leaf blower) will be swept against all walls, ceilings, floors, ledges and other surfaces in the contained area. One 20-inch diameter fan per 10,000 cubic feet

of room volume will be placed in a central location, directed toward ceiling and operated at low speed for the entire period of sample collection. Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors or vents. After air sampling pumps have been shut off, fans shall be shut off. The negative air system will continue to operate.

3.5.5 SCHEDULE OF AIR SAMPLES WITH PCM

- A. The PIH consultant will perform background, perimeter and work area sampling before and during abatement, and clearance samples. NIOSH 7400 method will be utilized.
- B. Final clearance sampling will be conducted using aggressive sampling technique. Final clearance samples will be taken in accordance with MA regulation CMR 6.14(5)(b)2.

3.5.6 LABORATORY TESTING FOR PCM

The services of a Massachusetts certified laboratory will be employed by the building owner to perform laboratory analysis of the air samples. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner.

3.6 ABATEMENT CLOSE-OUT AND CERTIFICATE OF COMPLIANCE

3.6.1 COMPLETION OF ABATEMENT WORK

- A. After being notified of the air sample results having passed the clearance standard, seal the negative air machines with 6 mil. polyethylene sheet and duct tape to form a tight seal at intake end before being moved from the negative pressure containment.
- B. Remove all equipment, materials, debris from the work site.
- C. Dispose of all as asbestos containing waste material as specified elsewhere in this section.
- D. Submit copies of all personal and ambient air sample data collected to the owner retained PIH.
- E. Submit the WSR to the owner with a copy to the Owner retained PIH Firm.

*** E N D ***

BALLASTS AND TRANSFORMERS

PART 1 - GENERAL

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, coordination with other work and phasing of work.

1.1 SUMMARY OF THE WORK

This data is provided for informational purposes only, and is based on the best information available at the time of specification preparation. The Contract Bidder is responsible for field verifying and to become familiar with existing conditions, quantities, dimensions and all other pertinent information for this project. Failure to do so will not be considered as justification for extra charges or change orders at a later date.

This section applies to the verification of ballasts and handling of Polychlorinated Biphenyls (PCB) containing light ballasts which will need to be removed, transported and disposed of in off-site Environmental Protection Agency (EPA) approved facilities. The Contractor shall provide all work herein and it is the Contractor's responsibility to check with state solid and hazardous waste agencies to ensure that wastes are handled properly.

1.2 CONTRACT DOCUMENTS AND RELATED REQUIREMENTS

Ballasts manufactured prior to 1979 can contain capacitors with Polychlorinated Biphenyls (PCB's). The EPA regulates PCB's under the Toxic Substances and Control Act (TSCA).

A. The lighting in the Waste Transfer Station consists of three styles of lighting. Strip lights with fluorescent bulbs, bay pendant lights and standard office fluorescent lighting.

1. The strip lights with fluorescent bulbs are located in the tipping room floor, pit areas, 3rd floor un-occupied area and maintenance garage. There are approximately 38 lights. This style lighting commonly has ballasts. Due to the height of the lighting they could not be inspected.
2. The Pendant lighting is located in the older un-occupied areas and stairwells. There are approximately 20 Pendant lights. There does not appear to be ballasts associated with the pendent style lighting however this could not be confirmed due to the height of the lighting. There is presumable asbestos containing heat shields in the lighting which is covered under the Asbestos Abatement specification.
3. The standard office fluorescent lighting is located in the Waste Management spaces and bathrooms. The office style fluorescent lighting were inspected and contain the wording "No PCB".

B. Transformers located in the Waste Transfer Station are dry transformers and do not contain PCB.

1.3 SCOPE OF WORK

- A. The fixtures where verification of PCB containing light ballasts could not be performed will be taken down and stacked in a staging area.
- B. Ballasts will be disconnected and inspected to determine if they are PCB containing.
 - 1. If the following wording is identified, “No PCB”, “does not contain PCB” or “PCB free”, then the ballasts may be discarded as regular waste.
 - 2. If no wording is present or ballasts are marked as “PCB containing”, ballasts must be set aside for disposal.
- C. Clean any PCB contamination or fixtures surfaces.
- D. Place all PCB ballasts and PCB contaminated items in the approved containers for each type of waste stream.
- E. Packaging and labeling the drums according to federal, state, and local regulations.
 - 1. A record for each drum used to store PCB-containing ballasts should be maintained and include:
 - o The number of ballasts in the drum;
 - o The condition of the ballasts - leaking or non-leaking;
 - o The date the ballasts were placed in the drum;
 - o The destination of the ballasts;
 - o The name of the contractor packing the drum; and
 - o The name and address of the waste generator.
- F. Transportation of all PCB Articles, Items and Container to EPA approved appropriate off-site disposal facility. Treatment facility shall be approved for disposal of PCB waste prior it’s transportation.
- G. Prepare manifests and other related documentation and ensure submittal to appropriate authorities
 - 1. At a minimum, provide the properly filled out Uniform Hazardous Waste Manifest from the transporter and certificate of destruction from the disposal facility.
- H. Contractor shall pay all necessary fees and permits related to the removal, handling, transportation and disposal of PCB ballasts and PCB contaminated items.
- I. General Contractor shall dispose of remaining fixtures after ballasts are removed as general construction waste.

TSCA Disposal Requirements for Fluorescent Light Ballasts

PCB Capacitor	PCB Potting Material	Labeling, Transportation and Manifesting for Disposal	Disposal Reference in §761	Disposal Options
"No PCBs" label		Not regulated under TSCA	N/A	Not regulated under TSCA
None	< 50 ppm	Not regulated under TSCA	N/A	Not regulated under TSCA
Intact and non-leaking or none	≥ 50 ppm	Is a PCB bulk product waste. No labeling is required. Manifesting is required for disposal in accordance with §761.62(a); is not required under §761.62(b); may be required under §761.62(c).	.50(b)(2)(ii) .62(a)-(c)	TSCA Incinerator, TSCA/RCRA Landfill, Alternate Destruction Method, Decontamination (§761.65(d) storage approval may be required), Coordinated approval, State approved landfill (leach test required), Risk-based approval
Intact and non-leaking	< 50 ppm	No labeling or manifesting required	.50(b)(2)(i) .60(b)(2)(ii)	As municipal solid waste 40 CFR 761 sub part D options
Leaking	< 50 ppm or ≥ 50 ppm	Disposal as PCB bulk product waste. No labeling is required. Manifesting is required for disposal in accordance with §761.62(a); may be required under §761.62(c).	.62(a) or (c)	TSCA Incinerator TSCA/RCRA Landfill Alternate Destruction Method Decontamination (§761.65(d) storage approval may be required) Coordinated approval Risk-based approval

RELEASE AND INDEMNITY AGREEMENT

In consideration of the CITY OF SOMERVILLE'S granting _____, its officers, employees, agents, representatives and invitees, if applicable (hereinafter "the Entity") the permission to enter the former waste transfer facility and incinerator located at 10 Poplar Street, Somerville (hereinafter referred to as "the Property") to visually inspect the facility ("the Work") on August 1, 2013 from 11:00 AM to 12:00/PM, the Entity hereby agrees as follows:

The Entity acknowledges that entering the Property involves certain inherent risks due to the presence of environmental contamination and other hazards in, on and about the Property. The Entity hereby assumes all such risks, as well as any other risks involved in entering the Property.

The Entity shall reimburse, make good or pay for the full amount of damage, loss or injury to property owned or controlled by the City of Somerville which results from the Work or any additional work or activities undertaken or to be undertaken by the Entity, its officers, employees, agents or representatives while in or upon the aforementioned Property;

The Entity hereby releases and covenants to hold harmless the City of Somerville, its officers and employees of and from any and all actions, causes of action, claims, demands, damages, costs, loss of service, expenses and compensation, on account of or in any way arising out of, directly or indirectly, personal injuries or property damage resulting or to result from any act or omission related to the Work as defined herein, as well as any other work or activities undertaken or to be undertaken by the Entity, its officers, employees, agents and representatives, in or upon the aforementioned Property; and

The Entity agrees to protect and defend and to indemnify, reimburse, or make good to the City of Somerville, its officers and employees, any loss, damage, or cost, including attorneys fees, that the City of Somerville, its officers and employees may have to pay if any claim arises from any act or omission related to the Work or any other work or activities undertaken or to be undertaken by the Entity, its officers, employees, agents and representatives in and upon the aforementioned Property.

By my signature below, I hereby certify and affirm that I have the authority to sign this instrument on behalf of the Entity and those who will participate in the work.

Signature
Print Name: _____
Title: _____
Address: _____

Phone: _____

Date