

***ASBESTOS ABATEMENT  
PROJECT SPECIFICATIONS***

(Note: asbestos abatement and interior demolition is one combined bid award)

**Site:**

Nassau University Medical Center - Main Building  
2201 Hempstead Turnpike  
East Meadow, New York 11554

**Abatement/Demolition Project Scope:**

Abatement/interior demolition for new 1<sup>st</sup> floor “Primary Care” suite and associated plumbing tie-ins

**Work Area(s):**

1st Floor (main work area: approx. 35,540 sq ft remove all exposed and concealed ACM)  
Ground Level (plumbing tie-ins)  
Basement Level (plumbing tie-ins)

**Client Contact:**

George Araujo  
Nassau University Medical Center  
Phone# (516) 572-3076

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USEPA/NYS DOL Project Designer (Cert #: 11-03918)

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## TERMS & CONDITIONS:

- A. This Project Specification Manual was prepared by Omega Environmental Services Inc. for the Nassau University Medical Center (NUMC) Primary Care Renovation Project. No specific warranties or guarantees are made by Omega Environmental Services, Inc. or its employees, as to the use of any information, product, apparatus, and/or process disclosed herein. Even though every reasonable effort has been employed by Omega personnel to assure that this document is correct, the Contractor shall bring all discrepancies to the immediate attention of Omega.
- B. This Specification document was prepared and developed for specific use on the NUMC Primary Care Renovation Project for removal of all accessible and concealed asbestos-containing material (ACM) in the scope of work area(s). Use of this document on any project except as described herein is prohibited unless prior written permission is obtained from Omega Environmental Services.
- C. This Specification document is provided for the explicit purpose of the Contractor bidding on the work as described herein. Contractor responsible for determining/verifying all quantities of Asbestos-Containing Materials to be abated.
- D. The work described in this document shall comply with the general, supplementary, and other conditions included in the complete set of project documents.

## IMPORTANT NOTES:

- A. **The asbestos abatement Contractor is 100% responsible for removal of all exposed and concealed ACM from the first floor Primary Care Renovation work area such that this space is “asbestos free” at the conclusion of the project (windows excluded).**
- B. All technical questions (e.g. work procedures, filing procedures, safety issues etc.) shall be forwarded to George Araujo, (NUMC EH&S) and Omega Environmental Services [phone: 201-489-8700].
- C. Any accidents requiring medical attention and all DOH, OSHA, Fire Department, or other regulatory agency inspections and/or correspondences shall be reported immediately to EHS Department. Failure to comply with notification/incident reporting requirements at any time during the project shall constitute breach of contract.
- D. **Since abatement and interior demolition is one combined bid package, all means & methods, schedule, and scope confirmation issues are the responsibility of the Abatement/Demolition Prime Contractor. Neither NUMC nor its consultants will get involved with any disputes or delays between the abatement and demolition phases related to missed ACM or other issues. If additional “missed” ACM is discovered in the course of demolition, it is the responsibility of the Prime Contractor to recall the abatement crew at their sole expense and schedule delay to complete proper abatement.**
- E. **Allowing the presence of ACM in the demolition waste stream shall result in automatic termination of contract.**
- F. **24/7 fire-watch to be provided by Abatement Contractor during all abatement activities until Work Area is turned over to General Contractor.**

PROJECT CONTACTS:

OWNER'S REPRESENTATIVE:  
(Asbestos Coordinator)

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ASBESTOS CONSULTANT:

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**(L) SCOPE OF WORK**

**1.1 PROJECT/SITE DESCRIPTION:**

- A. The asbestos abatement Contractor shall remove and dispose of all asbestos containing materials (ACM) from the 1st floor Primary Care renovation main work area and ground/basement plumbing tie-in locations according to NYS DOL, EPA, OSHA, and other published regulations.
- B. The following total estimated quantities of ACM were identified in conjunction with the asbestos building surveys (bidder responsible for field verification of quantities and locations):
- C. The base contract work shall include removal of ACM utilizing procedures described below:

<b>ESTIMATED BASE BID ABATEMENT SCOPE*</b>			
<b>Location(s)</b>	<b>Description of ACM Identified</b>	<b>Estimated QTY</b>	<b>Anticipated Method(s) of Abatement</b>
1 <sup>st</sup> Floor	Spray-on Fireproofing (SSI/ACM: Beams/Columns/Deck Overspray)	35,540 square feet	Full Containment
	VAT/VCT (excluding white 11”tiles in corridors)	30,340 square feet	
	ACM pipe fittings	1,470 fittings	
	ACM pipe fittings	30 fittings	Tent & Glovebag
Ground Level Northwest Wing	Spray-on Fireproofing (SSI/ACM: Beams/Columns/Deck Overspray)	40 square feet	Tent Variance or Full Containment
	ACM pipe fittings	100 fittings	Tent & Glovebag or same as above

\* While the area was checked for other miscellaneous asbestos materials such as gaskets, base molding, and no other accessible ACM was identified pre-project, the bidder should assume a contingency for concealed materials based upon prior job expenses, and reflect the allowance in the bid total.

<b>ADD ALTERNATE ABATEMENT SCOPE</b>			
<b>Location(s)</b>	<b>Description of ACM Identified</b>	<b>Estimated QTY</b>	<b>Anticipated Method(s) of Abatement</b>
<b>Below 1<sup>st</sup> Floor</b>			
Ground Level Southwest Wing	Spray-on Fireproofing* (SSI/ACM: Beams/Columns/Deck Overspray)	370 square feet	Tent Variance or Full Containment
	ACM pipe fittings	100 fittings	Tent & Glovebag or same as above
Basement Level Southwest Wing	Spray-on Fireproofing (SSI/ACM: Beams/Columns/Deck Overspray)	100 square feet	Tent Variance or Full Containment
	ACM pipe fittings	100 fittings	Tent & Glovebag or same as above

\* Multiple mobilizations may be required in conjunction with plumbing sub-contractors.

D. Table Notes:

- a. The above listed estimated quantities of ACM are provided for convenience and bidding purposes. Bidding Contractors are advised to perform for own estimation based upon own field take-offs.
- b. Prior to abatement, selective demolition is required by Contractor to access ACM pipe fittings in wet walls and other concealed materials.
- c. All objects inside the work area that cannot be cleaned shall be disposed of as ACM.
- d. All flooring to be abated down to concrete substrate using manual scraping.
- e. Interior demolition of masonry column enclosures to access SSI (on steel columns) must correspond to *Demolition Specifications*.

E. Project Scheduling

- a. The abatement work schedule shall be approved by NUMC one (1) week prior to start of project.
- b. The 1<sup>st</sup> floor space will be available 24/7.
- c. Ground and basement tie-in spot abatement areas expected to be available 24/7, but Contractor has to be flexible with scheduling in occupied areas.

F. Occupancy Status

The new "Primary Care" wing will be vacated for abatement interior demolition and re-build. However, the 2<sup>nd</sup> floor O.R. Suite immediately above the 1<sup>st</sup> floor work area is operational, as is the remainder of the 1<sup>st</sup> floor and Ground/Basement level plumbing tie-in areas (active hospital). Therefore additional noise and dust control/mitigation measures are important.

1.2 ALLOTTED TIME FRAME TO COMPLETE PROJECT:

All abatement work must be completed within a two (2) month time period from date of notification.

1.3 PROJECT FILING PROCEDURES/ABATEMENT METHODS/VARIANCES:

- A. The project shall be filed with the NYS Department of Labor (NYS DOL) and US EPA, as required the full containment method of abatement (1<sup>st</sup> floor) and/or site-specific tent variance (G & B Levels) is anticipated throughout.
- B. Omega will prepare Variance applications for this project.

1.4 SEQUENCE OF WORK EVENTS:

The work shall be conducted according to the following approximate sequence of events:

<b>General Sequence Of Events</b>
1. NUMC to de-activate utilities (electrical, etc.).
2. Contractor(s) to maintain temporary lighting and power; verify lockout/tagout of utilities in work area(s).
3. Provide OSHA approved ladders and/or scaffolding to access high elevation substrates.
4. Set-up containment and/or tent procedure.
5. Perform selective demolition to access concealed ACM.
6. Wet down materials to be removed.
7. Place material removed in asbestos waste bags – to be doubled and labeled.
8. HEPA vacuum and wet-wipe work area to remove dust and debris.
9. De-mobilize equipment after successful waiting periods and final air test.

1.5 NOTIFICATION AND LICENSING REQUIREMENTS FOR ASBESTOS ABATEMENT:

In addition to compliance with all applicable OSHA, NYS DOL, and federal EPA regulations the following requirements apply:

- a. The EHS office shall receive a copy of all filings 10 days prior to onset of abatement work.
- b. The EHS office shall receive a copy of a written work schedule at least 5 days prior to onset of abatement work.
- c. The Contractor shall submit a copy of the Company Health & Safety Plan including a Fall Protection Plan prior to the onset of any abatement work.
- d. The Contractor shall provide sealed container for asbestos waste. All asbestos waste shall be moved to the container at the conclusion of each shift.
- e. An emergency contact phone list shall be prepared and posted at the job-site.
- f. Special arrangements are required if any fire alarm system control panels, alarms, or other components may be blocked during the abatement project.

1.6 DISCOVERY OF ADDITIONAL CONCEALED INACCESSIBLE ACM (NOT ANTICIPATED):

- A. The abatement Contractor, with assistance from Consultant’s Asbestos Inspector, is required to perform a follow-up inspection at the conclusion of the abatement phase to ensure that the renovation work area structure is “asbestos free” prior to the onset of renovation work.
- B. The Contractor will be required to perform selective demolition work to access/abate concealed ACM in 1<sup>st</sup> floor wet walls and other enclosed areas.**



### 1.7 PROJECT PHASING:

- A. The first floor full containment abatement shall be conducted in one or more phases. Multiple phases may be required to achieve negative pressure and coordinate with plumbing sub-contractor.
- B. Ground and Basement level plumbing tie-in work shall be conducted in tents and/or small containments, exact plumbing tie-in locations to be coordinated in field.

### 1.8 MINIMUM INSURANCE REQUIREMENTS:

In addition to general NUMC bidding requirements, a minimum, Contractor shall provide evidence of the following:

#### A. Required Coverage

- a. Environmental Liability Insurance, including asbestos abatement coverage.
  - Coverage for instant project not less than \$5 million
- b. Commercial General Liability
  - Bodily Injury and Property Damage Limit: \$5,000,000 each occurrence
  - Products/Completed Operations Limit: \$5,000,000 aggregate
- c. Personal Injury and Advertising
  - Injury Limit is \$5,000,000 each organization
  - General Aggregate Limit is \$5,000,000 each project
- d. Automobile/Trucker Motor Vehicle Liability with MCS-90 endorsement
  - Coverage for instant project not less than \$5 million
- e. Excess "Umbrella" Liability
  - Combined Single Limit for Bodily Injury and Property Damage is \$10,000,000 each occurrence
- f. Workers Compensation and Employers' Liability
  - Statutory coverage complying with the State of New York
  - Workers' Compensation Law
- g. Disability Benefits
  - Statutory coverage complying with the State of New York
  - Disability Benefits Law

B. All insurance carriers providing the above coverage for the contractor must be licensed to do so in the State of New York and must be otherwise acceptable to NUMC.

C. Owner must be named as Additional Insured under all policies listed in A1 and A3 above in connection with the work being performed.

D. Completed Operations coverage must be maintained and evidenced for at least two (2) years after completion of the project.

- E. Certificates of Insurance evidencing the insurance coverage's required by A1 through A5 herein must be provided to and approved by NUMC prior to commencing work under the contract.
- G. At least 30 days advance written notice of the cancellation, non-renewal or material change of any of the required coverage must be provided to NUMC.
- H. **NUMC Purchasing Department "Insurance and Bonding" requirements also apply to this scope of work. Since abatement/demolition is one combined bid award, any higher insurance limit requirements for demolition supersede and vice versa. See *Demolition Project Specifications* for details.**
- I. It is expressly understood and agreed by the Contractor that the insurance requirements specified above contemplate the use of occurrence liability forms. If claims-made coverage is evidenced to satisfy any of these requirements the Contractor shall comply with the following requirements:
  - a. If the claims-made coverage terms designate a specific retroactive date, the Contractor shall maintain a retroactive date which is not later than the earlier of (a) the date of the commencement of the term of this Contract, or (b) the original coverage retroactive date for the Contractor's first claims-made policy for each and every coverage provided on a claims-made basis.
  - b. For the duration of this contract if the retroactive date is advanced or if the policy is non-renewed, canceled or is otherwise materially changed, the Contractor agrees to purchase, at its own expense, an Extended Reporting Endorsement. This endorsement must provide for an extended reporting period ("Tail" coverage) in compliance with the minimum standards promulgated by the Insurance Department of the State of New York.
  - c. Upon termination of the services provided to Owner by the Contractor, it is agreed that such claims-made coverage will be maintained without interruption for a period of time equal to the length of any Extended Reporting Period requirement as cited above. If the retroactive date is advanced or if the policy is non-renewed, canceled, or is otherwise materially changed during this period of time, the Contractor agrees to purchase, at its own expense, an Extended Reporting Period Endorsement that is in compliance with the minimum insurance standards promulgated by the Insurance Department of the State of New York as cited above.
- I. **Indemnification:** The Contractor shall defend, indemnify, and hold harmless Owner, Omega Environmental Services, and their officers, employees, and agents from all claims, actions, liabilities, damages, costs and expenses (including, but not limited to, attorneys fees) of every nature and description arising out of or related to the services rendered by the Contractor. The duties and obligations of the Contractor pursuant to this paragraph shall survive the termination or expiration of this Contract and shall not be limited by any provision in this Contract requiring the Contractor to maintain specific insurance coverage.

## (II.) GENERAL PROCEDURES FOR ASBESTOS ABATEMENT

### 2.1 NEW YORK STATE DEFINITIONS:

The following definitions shall apply to this project:

Abatement: shall mean any and all procedures physically taken to control fiber release from asbestos containing materials. This includes removal, encapsulation, enclosure, and repair.

Airlock: shall mean a system for permitting entrance and exit while restricting air movement between a contaminated area and an uncontaminated area. It consists of two curtained doorways separated by a distance of at least three feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air Sampling: shall mean the process the measuring the fiber content of a known volume of air collected during a specific period of time. The procedure utilized for asbestos follows NIOSH Method 7400 protocol or the provisional transmission electron microscopy (TEM) methods which are utilized for lower detection limits and specific fiber identification.

Amended Water: shall mean water to which surfactant has been added.

Area Air Sampling: shall mean any form of air sampling or monitoring where the sampling device is placed at some stationary location.

Asbestos: shall mean any hydrated mineral silicate separable into commercial usable fibers, including but not limited to chrysotile, amosite, crocodile, tremolite, anthophyllite, and actinolite.

Asbestos Containing Material (ACM): shall mean asbestos containing material or asbestos contaminated objects requiring disposal.

Asbestos Handler Supervisor: shall mean an individual who supervises the handlers during an asbestos project and ensures that proper asbestos abatement procedures as well as individual safety procedures are being adhered to. This individual shall have completed approved training courses and be certified by the NYS DOH.

Asbestos Handling Certificate: shall mean a certificate issued by the Department to an individual who has satisfactorily completed an approved asbestos safety and health program.

Asbestos Inspection Report: shall mean a report on the condition of a building or structure in relation to the presence and condition of asbestos therein.

Asbestos Project: shall mean any form of work performed in connection with the alteration, renovation, modification, or renovation or a building or structure in which friable or asbestos containing material will be disturbed.

Authorized Visitor: shall mean the building owner and his/her representative, and any representative, of a regulatory or other agency having jurisdiction over the project.

Building Owner: shall mean the person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance Building Owner means the person in whom beneficial title is vested.

Clean Room: shall mean an uncontaminated area or room, which is part of the worker decontamination enclosure system with provisions for storage of worker's street clothes and protective equipment.

Clearance Air Monitoring: shall mean the employment of aggressive sampling techniques with a volume of air collected in order to determine the airborne concentration of residual fibers and shall be performed as the final abatement activity.

Curtained Doorway: shall mean a device, which consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached to the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

Decontamination Enclosure System: shall mean a series of connected rooms, separated from the work area and from each other by airlocks, for the decontamination of workers, materials, waste containers, and equipment.

Department: shall mean the NYS Dept. of Labor.

Encapsulant (sealant) or Encapsulating Agent: shall mean liquid material which can be applied to ACM and which temporarily controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). This may also be used to seal surfaces from which ACM has been removed.

Encapsulation: shall mean the coating or spraying of ACM with a sealant.

Enclosure: shall mean the construction of airtight walls and ceilings between ACM and the facility environment, or around surfaces coated with ACM, or any appropriate procedure as determined by the DOL which prevents the release of asbestos fibers.

Equipment Room: shall mean a contaminated area or room, which is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

Fixed Object: shall mean a unit of equipment or furniture in the work area, which cannot be removed from the work area.

Friable Asbestos Material: shall mean any ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand or other mechanical pressure.

HEPA Filter: shall mean a high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers mass median aerodynamic equivalent diameter.

Holding Area: shall mean a chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.

Homogeneous Work Area: shall mean a portion of the work area, which contains one type of ACM and/or where one type of abatement is used.

Large Asbestos Project: shall mean an asbestos project involving the disturbances (e.g. removal, enclosure, & encapsulation) of 260 linear feet or more of friable ACM or 160 square feet or more of friable ACM.

Major Violation: shall mean any action, on the job performance or lack of performance that may place any individual at risk other than the worker who commits the violation.

Minor Violation: shall mean any action, on the job performance or lack of performance that may place the worker at risk.

Movable Object: shall mean a unit of equipment or furniture in the work area, which can be removed from the work area.

Negative Air Pressure Equipment: shall mean a portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside the work area.

NESHAPS: shall mean the National Emission Standards for Hazardous Air Pollutants.

Occupied Area: shall mean an area of the worksite where abatement is not taking place and where personnel or occupants normally function or where workers are not required to use personal protective equipment.

Personal Air Monitoring: shall mean a method used to determine employees' exposure to airborne fibers. The sample is collected outside the respirator in the worker's breathing zone.

Plasticize: shall mean to cover floors and walls with plastic sheeting as herein specified or by using spray plastics as acceptable to the Department.

Removal: shall mean the stripping of any ACM from surfaces or components of a facility or taking out structural components in accordance with 40CFR Subparts A and M.

Respiratory Protection Standard: shall mean respiratory protection provided to workers in accordance with the Personal Protection Requirements of the Department.

Shower Room: shall mean a room between the clean room and equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.

Small Asbestos Project: shall mean an asbestos project involving the disturbance (e.g. removal, enclosure, and encapsulation) of more than 25 and less than 260 linear feet of friable ACM or more than 10 or less than 160 square feet of friable ACM.

Staging Area: shall mean the work area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

Structural Member: shall mean any load supporting member of a facility, such as beams and load supporting walls, or any non-load supporting member, such as ceiling and non-loading supporting walls.  
Surfactant: shall mean a chemical wetting agent added to the water to improve penetration.

Visible Emissions: shall mean visible suspect asbestos containing debris/residue, outside the containment, as determined by the on-site Project Monitor.

Wet Cleaning: shall mean the removal of asbestos fibers from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water.

Work Area: shall mean designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take place.

Worker Decontamination Enclosure System: shall mean that portion of a decontamination enclosure system designed for controlled passage of workers, and other individuals and authorized visitors, consisting of a clean room, a shower room, and equipment room separated from each other and from the work area by airlocks and curtained doorways.

Work Site: shall mean premises where asbestos abatement activity is taking place, and maybe composed of one or more areas.

## 2.2 STANDARD OPERATING PROCEDURES:

- A. The Contractor's standard operating procedure shall include the following:
- a. Tight security from unauthorized entry into the work space.
  - b. Proper protective clothing and respirator protection prior to entering the work area from the outside.
  - c. Safe work practices in the work place, including provisions for inter-room communications, exclusion of eating, drinking, and smoking, or in any way jeopardizing the respirator protection.
  - d. Proper entry/exit practices from the work space to the outside through the showering and decontamination facilities.
  - e. Removing asbestos using wet methods only.
  - f. Packing, labeling, loading, transporting, and disposing of ACM in a manner that minimizes exposure and contamination.
  - g. Emergency evacuation for medical or safety (fire and smoke) so that exposure will be minimized.
  - h. Safety precautions for accidents in the work space including but not limited to electrical shocks and fall hazards associated with scaffolding, slippery surfaces, and entanglements in loose hoses and equipment.
  - i. Provisions for effective supervision, air monitoring, and personnel monitoring for exposure during the work operation.

- B. Provide and Asbestos Handler Supervisor to remain on-site for the duration of the project and to be responsible for the following:
  - a. Ensure that individuals are wearing proper personal protective equipment (PPE) and are trained in its use.
  - b. Maintain entry log records and ensure that they are recorded in accordance with the provisions of NYS ICR-56.
  - c. Surveillance of the work area at a minimum once per shift or as required by NYS ICR-56 to ensure that the workers PPE is not torn or ripped and that respiratory protection is worn at all times.
  - d. Ensure that sufficient PPE available on-site.
  - e. Take precautions to prevent heat stress from occurring such as reducing the work rate and providing adequate water breaks.

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

- A. Post multilingual (English, Spanish, & language of work crew) warning signs around the work space and at every point of potential entry from the outside and at the main entrance to the building which can be viewed by the public without obstruction, in accordance with OSHA 29 CFR 1926.58 (K). The size of the sign and lettering shall conform to OSHA requirements.
- B. Provide required labels for all plastic bags and all drums utilized to transport contaminated material to the landfill in accordance with OSHA 29 CFR Parts 171 and 172 of the DOT regulations.
- C. Provide any other signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn people of the hazard from asbestos exposure. Post in a prominent and convenient place for the workers a copy of the latest applicable regulations for OSHA, EPA, NIOSH, and State of New York and any additional items mandated for posting by the aforementioned regulations.
- C. The Contractor shall be responsible for furnishing all permits, and notices, required to perform the scope of work.
- D. Omega Environmental Services will prepare all required variance for the project.

### 2.4 EMERGENCY PRECAUTIONS:

- A. Establish emergency and fire exits from the work area.
- B. Local medical emergency personnel (Hospital and ambulance) must be identified by the Contractor prior to the onset of abatement work and must be posted in a prominent location.
- E. The Contractor shall be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs, precautions shall be taken to reduce airborne fiber concentrations (i.e. misting of the air with water) until the injured person has been removed from the work area.

- F. If any injury occurs, the Contractor shall notify the EHS office, and complete an OSHA-200/300 form if required. **Failure to notify these parties immediately of all injuries requiring medical attention shall be considered a breach of contract.**

#### 2.5 SUBMITTALS DURING THE PROJECT:

- A. The Contractor shall submit copies of the following items to the Project Monitor's office within twenty-five days of completion of the project:
- a. Daily security and safety logs indicating names of person entering work space, date, and time of entry and exit, record of any accident, emergency evacuation, and any other safety and/or health incident.
  - b. Progress logs showing the number of workers, supervisors, hours of work, and tasks completed shall submitted daily to the Project Monitor and the Director of EHS.
  - c. The Project Monitor shall submit a floor plan indicating the Contractor's work progress for review.
  - d. OSHA/personal air sampling records shall be posted on-site within 24 hours.
  - e. Disposal certificates and waste hauler manifests. Contractor will not receive final payment until all waste manifests are received by EHS office.
  - f. Required permits, clearances, and licenses (all worker licenses)
  - g. Copy of minutes from weekly safety meeting

#### 2.6 APPLICABLE STANDARDS:

- A. Applicable standards include, but are not limited to, the following:
- a. Environmental Protection Agency (EPA)  
Region II  
Air and Hazardous Materials Division  
Federal Building, Room 802  
26 Federal Plaza  
New York, NY 10007
  - b. Occupational Safety & Health Admin. (OSHA)  
US Dept. of Labor  
1515 Broadway/Room 3445  
New York, NY 10036  
[asbestos, lead, fall protection, electrical, etc.]
  - c. State of NY Dept. of Environmental Conservation  
Division of Solid Waste Management  
50 Wolf Road  
Albany, NY 11202



d. NYS Dept. of Labor (DOL)  
Asbestos Control Program  
One Hudson Square, 75 Varick Street (7th Floor)  
New York, NY 10013

e. American National Standards Institute (ANSI)  
1430 Broadway  
New York, NY 10018

- B. The Contractor has the responsibility of informing his/her personnel and the Director of EHS of the requirements of these agencies and shall satisfy completely these specifications and all referenced regulations, and as amended.

#### 2.7 BUILDING OWNER/CONTRACTOR RESPONSIBILITIES:

- A. For the purpose of this document the term building owner representative will be synonymous with the Director of EHS.
- B. The Contractor, after receiving award notification from the Director of EHS shall provide notification to all occupants of the work place and immediate adjacent areas of the asbestos project. Information provided in the notification shall include Contractor, project location and size, amount and type of ACM, abatement procedure, dates of expected occurrence and the NYS-DOL telephone number. Postings of this notification shall be in English and Spanish, at eye level, in a conspicuous, well-lit place, at the entrances to the work place and immediate adjacent areas. The notice shall have the heading NOTICE OF ASBESTOS ABATEMENT (minimum size of 1" lettering). The notices shall be posted 10 calendar days prior to the start of the project and shall remain posted until clearance air monitoring is satisfactorily concluded.
- C. All building occupants and staff will vacate the work area.
- D. The Facilities management will be responsible for cleaning or disposal of uncontaminated movable items.
- E. The Facilities management will have person(s) available with access to all areas and knowledge of electrical and air handling equipment. Such personnel shall assist Contractor in case of any power failure or breakdown to shut down air supply systems, to reset and control all protective systems such as alarms, sprinklers, locks, etc.
- F. During this period the Contractor shall be responsible in all areas affected by his/her operation for Maintaining the existing buildings and utility systems such as plumbing and electrical installations.
- G. Should the failure of any utility occur, the owner and manager will not be responsible to the Contractor for the loss of time or other expenses incurred.

#### 2.8 USE OF BUILDING FACILITIES:

- A. The owner shall make available to the Contractor, from existing supplies, all reasonably required amounts of water and electrical power for the project. The Contractor is responsible for all utility connections and removals.
- B. Electric power to all work areas shall be shut down and locked by NUMC Facility Engineers. Safe temporary power and lighting shall be provided by the Contractor in accordance with applicable codes. All power to work areas shall be brought in from outside the area through ground-fault interrupter (GFI) at the source. Stationary electrical equipment within the work area, which must remain in service, shall be adequately enclosed and ventilated.
- C. The Contractor shall provide, at his own expense, all electrical, water, and waste connection hook-ups, extensions, and construction materials, supplies, etc. At the end of each shift the Contractor shall disconnect all hoses within the work zone and place in equipment room. The Contractor shall insure positive shut-off of all water to the work area during non-working hours.
- D. The Director of EHS will designate an existing power box in close proximity to the work area. The Contractor's licensed Electrician shall provide temporary tie-in via cable, outlet boxes, junction boxes, receptacles and lights, all with ground fault interruption. All temporary electrical installation shall be in accordance with OSHA and local regulations. The electric shut down for power panel tie-in will be on off hours and must be coordinated with the Building Engineer. The Contractor shall outline his/her power requirement at the pre-construction meeting.
- E. Contractor shall provide fire protection in accordance with all local and state fire codes.
- F. The Contractor shall provide a digital manometer on-site to demonstrate that the pressure differential of the containment system is 0.02" w.g. or greater.
- G. Contractor shall supply hot shower water necessary for use in the decontamination unit as required by the applicable regulations.
- H. As per OSHA regulations and site requirements (no Contractor use of in-house bathrooms), the Contractor shall provide portable toilet(s) for the abatement crew.

#### 2.9 USE OF THE PREMISES:

- A. The Contractor shall confine his apparatus, the storage of materials, and supplies, and the operation of his workmen to limits established by law, ordinances, and the directions of the manager.
- B. The Contractor shall assure that no exits from the building are obstructed, that appropriate safety barriers are established to prevent access, and that work areas are kept neat, clean, and safe.
- C. All surrounding work, fixtures, soil lines, drains, water lines, gas pipes, electrical conduit, wires, utilities, duct work, railings, etc. which is to remain in place shall be carefully protected and, if disturbed or damaged, shall be repaired or replaced as directed by the manager/owner, at no additional cost.

#### 2.10 PROTECTION AND DAMAGE:

- A. No materials or debris shall be thrown from the roof, windows, or doors of the building. Building waste system shall not be used to remove refuse.

- B. Debris shall be removed from the work site daily. Premises shall be left neat and clean after each work shift, so that work may proceed the next regular workday without interruption.
- C. All tape, mastic, and spray-glue must be removed from site prior to start of the demolition phase.

#### 2.11 RESPIRATOR PROTECTION REQUIREMENTS:

Respirator protection shall be worn by all individuals who may be exposed to asbestos fibers from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring in accordance with these regulations.

- A. All respirator protection shall be OSHA/NIOSH approved in accordance with the provisions of 30 CFR Part 11. All respirator protection shall be provided by the Contractor, and used by workers in conjunction with the written respirator protection program.
- B. The Contractor shall have an approved respirator protection program available for review on-site by regulatory agency inspectors.
- C. The Contractor shall provide respirator fit-test and respirator training documentation for each worker on-site, including up-to date medicals.
- D. Authorized visitors will only be permitted to enter the work area if they present current respirator fit-test and training documentation as well as written permission from a Physician that the individual is medically capable wearing a respirator.

#### 2.12 PROTECTIVE CLOTHING:

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. Provide all workers, foremen, superintendents and authorized visitors and inspectors protective clothing consisting of full-body coveralls, head covers, gloves, and 18" high boot covers or reusable footwear.
  - a. Coveralls: provide disposable full-body coveralls and disposable head covers and requires that all workers in the work area wear them. Provide a sufficient number for all required changes for all workers in the work area.
  - b. Boots: provide work boots with non-skid soles, and where required by OSHA, foot protection for all workers. Provide boots at no cost to workers.
  - c. Hard Hats: provide hard hats for all workers as required by OSHA standards.
  - d. Goggles: provide eye protection for all workers as required by OSHA standards.
  - e. Gloves: provide gloves to all workers, of the type dictated by the Work and OSHA standards
- B. Disposable coveralls shall be discarded as asbestos waste every time the wearer exits the decontamination chamber.

- C. Respirators, disposable coveralls, head covers, foot covers, and gloves shall be provided by the Contractor for the authorized representative who may inspect the work area. Provide two respirators and six respirator filter changes per day.

#### 2.13 PERSONAL/OSHA AIR MONITORING (CONTRACTOR):

- A. The Contractor shall employ a qualified industrial hygiene laboratory to analyze OSHA/personal air samples in accordance with OSHA regulations 1926.58 and 1910.134.
- B. The laboratory utilized to analyze OSHA/personal samples shall be an active participant in good standing in the AIHA PAT Program and ELAP approved.
- C. The Contractor shall provide an OSHA Competent Person (as defined by OSHA 1926.58) to perform the following functions on-site continuously for the duration of the project:
  - a. Monitor the construction and integrity of the containment.
  - b. Control entry/exit into the containment.
  - c. Insure that all workers are adequately trained in the use of respirator protection and personal protective equipment.
  - d. Insure that all workers are using respirator protection and personal protection properly while on-site.
  - e. The competent personal shall check for rips and tears in the work suits and insure that they are replaced when damaged.
- D. OSHA/personal air sampling, as defined in OSHA 1926.58, shall be performed by a qualified hygienist/technician on no less than 20% of the work crew.
- E. Daily (per shift) OSHA/personal air sampling will include personal samples run in the breathing zone of a worker to determine the employee's 8-hour TWA exposure and 30-min. excursion samples to be run during periods of gross removal.
- F. OSHA/personal air samples shall be run using pumps with a flow rate of 1 to 3 lpm. Pump calibration documentation must be available on-site.
- G. Sampling and analysis shall be conducted according to Method NIOSH 7400.
- H. Air sample results shall be posted at the job-site within 24 hours of sample collection.
- I. All costs for OSHA/personal air sampling shall be borne by the Contractor.
- J. The Contractor must submit copies all final laboratory reports to the Consultant as soon as they are available.
- K. The Consultant reserves the right to conduct independent air sampling inside the containment for quality control purposes.

2.14 3<sup>RD</sup> PARTY AIR MONITORING (Project Monitor):

- A. NUMC shall employ the services of an NYS licensed air-monitoring firm to conduct 3rd party asbestos air and project monitoring for the asbestos abatement phase.
- B. All air samples collected by the Air Monitor shall be submitted to an AIHA PAT proficient and NYS DOH ELAP approved laboratory for analysis.
- C. The Air Monitoring/Environmental Consulting Firm shall provide a licensed NYS Project Monitor on-site for the duration of the project.
- D. The Project Monitor shall provide continuous monitoring and inspection to include air sampling according to the protocol described in NYS ICR-56 and EPA NESHAPS regulations to ensure that all areas outside the containment and the ambient air remain free of contamination.
- E. Inspections will include checking the Contractor's standard operating procedures, engineering control systems, respirator protection and decontamination systems, packaging and disposal of asbestos waste, and other aspects of the project which may affect the health and safety of the building occupants and the environment.
- F. The Building Owner shall incur the costs associated with the required air sampling and analysis except for OSHA/personal air sampling. Should any additional testing be required due to Contractor error the Contractor will incur the additional cost.
- G. The air samples will be analyzed by the PCM method according to the protocol described in NYS ICR-56.
- H. Final clearance air sampling will be done by the Air Sampling Technician only after a successful visual inspection conducted by a Project Monitor.
- I. Should the final clearance air sample result exceed the 0.01 fibers/cc level required for final clearance the Contractor will be required to re-clean the work area at his/her own expense. The Project Monitor will then repeat final clearance air sampling. The Building Owner is responsible for the cost of the first final clearance test only. The Contractor is responsible for all costs associated with additional sampling until the area meets expectable limits.
- J. After the work area has achieved final clearance the Contractor may encapsulate the removal substrates and remove the isolation barriers.
- K. The clearance criteria shall apply to each homogeneous work area independently.
- L. The Contractor shall cooperate fully with all aspects of the project monitoring operation.
- M. All parties to this Contract are advised that tampering with testing equipment will be considered to be an attempt at falsifying reports and records to Federal and State agencies.

### **(III.) PROJECT SPECIFIC ASBESTOS ABATEMENT PROCEDURES**

#### **3.1 MATERIAL HANDLING:**

- A. Deliver all materials to the job site in their manufacturer's original container with the manufacturer's intact labels and MSDS sheets prior to start of job.
- B. Promptly removes damaged materials from the job site.
- C. The Project Monitor may reject materials and products that do have identification as to manufacturer, grade, quality, and other pertinent information such as MSDS sheets.

#### **3.2 MATERIALS:**

- A. Wetting agent shall be approved for use for asbestos abatement projects.
- B. Acceptable lock-down sealants to be used following asbestos removal shall meet ASTM Standard E84-84, have a fire rating of Class A, and have Underwriter's Laboratory approval for Class 1A and be approved for use in asbestos abatement projects.
- C. Polyethylene sheeting shall be fire retardant with a minimum thickness of 6-mil where the largest size possible is provided to minimize seams.
- D. Asbestos waste bags shall be 6-mil. thick and clearly marked with warning labels as required by OSHA and EPA.
- E. Asbestos warning signs to be posted at the perimeter of the work area shall meet NESHAP and EPA requirements.
- F. High quality tape which is formulated to adhere to polyethylene sheeting shall be utilized.
- G. Spray adhesive in aerosol cans, which is specifically formulated to adhere to polyethylene sheeting, shall be used. Spray glue cans shall be stored in fire-rated cabinet.
- H. Spiral reinforced flex duct shall be used for air filtration units.
- I. Tyvek, Duraguard, or equivalent disposable coveralls shall be used.
- J. Cloth lagging shall be of fiberglass type and no less than 2 oz.

#### **3.3 TOOLS AND EQUIPMENT:**

- A. Air Filtration Devices (AFD's) shall be equipped with High Efficiency Particulate (HEPA) filter systems and shall be approved for use by and lists with Underwriter's Laboratory.
- B. Scaffolding shall be designed and constructed in accordance with OSHA 29 CFR 1926/1910, local building codes, and any other applicable regulations. Non-skid surfaces must be provided on all ladders and surfaces subject to foot traffic. Scaffold ends and joints shall be sealed with tape to prevent infiltration of asbestos fibers. Scaffolding shall be inspected by OSHA competent person.

- C. All vacuum equipment used in the work area shall utilize HEPA filtration systems.
- D. Electric airless sprayers used for application of encapsulant shall be approved for use.
- E. Water sprayers shall be airless or other low pressure devices for amended water application.
- F. Portable showers shall be in good working condition (i.e. not leaking).
- G. Power air misting devices shall be equipped with GFI's and to operate continuously.
- H. All hand power tools used in the work area shall be equipped with HEPA-filtered local exhaust ventilation.
- I. The Contractor shall provide other suitable tools (scrapers, shovels, etc.) for the stripping, removal, encapsulation, and disposal activities associated with the abatement operation. Special tools may be needed for this project to remove the asbestos containing plaster.
- J. A "type A" fire extinguisher shall be provided by the Contractor.
- K. The Contractor shall maintain an adequately stocked first aid kit on-site per OSHA regulations.
- L. Water Service:
  - a. Temporary Water Service Connection: All connections to the NUMC water system shall include back flow protection. After completion of use connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking fittings/valves shall be repaired and/or replaced as required.
  - b. Water Hoses: Use heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each decon.
  - c. Water Heater: Provide UL rated 40 gallon electric water heaters to supply hot water for the personal decontamination shower. Drip pans shall be at least 6" deep and securely fastened to the water heater.
- M. Electrical Service:
  - a. Temporary Power: Provide service to decon subpanel with minimum 60 AMP, 2 pole circuit breaker or fused disconnect connected to the building's main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for the completion of work.
  - b. Temporary Lighting: Contractor shall provide adequate lighting to ensure proper workmanship.
  - c. Ground Fault Protection: Equip all circuits with ground fault circuit interrupters. Locate panel outside containment.
  - d. Wiring: Provide circuits of adequate size and proper characteristics for each use.

- e. Extension Cords: Use only grounded heavy duty extension cords in single lengths.

### 3.4 PERSONNEL DECONTAMINATION UNIT (DECON):

- A. The Contractor shall provide a decontamination unit adjoined to the work area consisting of rooms and airlocks in series as described in NYS FCR-56. Frame construction shall be fire rated 2"x 4" wood studs on 16" centers. Each chamber shall be separated by 3' airlocks to minimize fiber migration from the work area to the ambient air. A personal and waste decon set-up shall be required.
- B. At the entrance to the clean room the Contractor shall construct plywood doors on hinges which can be locked to prevent entry into the work area when the Contractor is not on-site. Asbestos Hazard signs shall be posted on the doors to the personal and waste decon's. All plywood facing occupied space shall be painted white or other suitable color.
- C. The location of the decon must be approved by the Project Monitor if it is to be placed in an occupied area.
- D. The chambers of the decon unit are the following:
  - a. Clean Room: In this room all persons remove street clothes and put on disposable coveralls. Respirators are also stored in this area. No asbestos contaminated boots or other items are permitted in this room. The Contractor shall HEPA-vacuum and wet-wipe the Clean Room at least once per shift.
  - b. Shower Room: This area, which is considered to be contaminated, is used for showering after undressing in the Equipment Room. Hot and the Contractor must provide cold water, shampoo, and soap.
  - c. Equipment Room: Contaminated tools, boots, and work clothing are left in the Equipment Room, which is considered to be contaminated, before entering the shower.
- E. Respirator filters shall be removed in the shower and treated and disposed of as contaminated waste.
- F. There shall be no smoking, eating, or drinking in any contaminated areas (work area, Equipment Room, Shower Room) or **anywhere in building**. Respirators shall be worn in all contaminated areas.
- G. Work boots shall remain in the Equipment Room until the completion of the project at which time they may be decontaminated.
- H. The Contractor shall provide temporary connections for hoses as required for hot and cold shower water. Provisions shall be made to dispose of the shower water as asbestos waste or filter the water to 5 microns and dispose into the sanitary system. Costs for testing of the shower waste water shall be incurred by the Contractor.
- I. Electric service is required for temporary lighting and heating of the Clean Room and Shower Room. The Contractor shall provide all necessary heaters and other temporary electrical fixtures. In addition the Contractor must provide at least two outlets to be used by the Air Monitor for air sampling equipment.



### 3.5 DECONTAMINATION SEQUENCE:

- A. All workers and other persons who will enter the work area shall remove street clothes, put on clean coveralls, and respirator in the Clean Room. Workers shall then pass through the showers to the Equipment Room.
- B. The workers shall then proceed to the work area.
- C. Before exiting the work area, the worker shall remove all gross contamination and debris from the coveralls. This is accomplished by one worker assisting another in brushing each other off or vacuuming with HEPA filter equipment vacuums approved for asbestos clean-up.
- D. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment. Contaminated extra clothing may be placed in a bag for disposal with other material.
- E. Any additional clothing such as work boots, and equipment shall be left in the Equipment Room. Contractor shall provide workers with additional warm garments as required by climatic conditions. These must be treated as contaminated clothing and left in the Equipment Room and disposed of at the end of the project.
- F. The worker then proceeds immediately into the Shower Room. Respirator protection equipment shall be removed after the worker has completely showered to prevent inhalation of fibers.
- G. After showering, the worker moves proceeds to the Clean Room and dresses in either new coveralls for another entry or street clothes if exiting.
- H. Everyone entering the work area must follow this procedure completely every time he/she enters and exits the work area.
- I. The Contractor, in order to prevent contamination of the environment, shall be responsible for controlling access at the work site and shall maintain a daily log of personnel entering the work area. A list of names of workers shall be posted with their start and stop times for each day.
- J. The worker decontamination enclosure system shall be wet cleaned/HEPA vacuumed at least once after each shift change.

### 3.6 WASTE DECONTAMINATION FACILITY:

- A. The waste decon shall be constructed prior to commencement of abatement according to NYS ICR-56 requirements.
- B. The waste decon shall consist of two totally enclosed chambers according to the following:
  - a. The Clean-up Room shall be constructed with an airlock leading to the work area and an airlock leading to the holding area.
  - b. The holding area shall be constructed with an airlock leading to the washroom and a lockable door to the outside.

- C. The waste decon shall be wet wiped and HEPA vacuumed upon completion of waste bag-out.

### 3.7 MAINTENANCE OF DECONTAMINATION ENCLOSURE SYSTEMS & BARRIERS:

The following procedures shall be followed during the abatement:

- A. All isolation barriers shall be inspected for integrity by the Contractor Supervisor at least twice per shift.
- B. Smoke testing shall be used to evaluate the integrity of the enclosure before removal work begins and at least once per shift.
- C. Damaged areas of the containment shall be repaired immediately.
- D. At any time during the abatement, if visible emissions are observed, or elevated asbestos fiber counts outside the work area are measured, or if damage occurs to the isolation barriers, abatement shall stop. The source of contamination shall be identified, the integrity of the barriers shall be restored, and any visible residue shall be cleaned up using HEPA-vacuuming and wet wiping.
- E. Inspections and observations shall be documented in the daily project log by the Supervisor and Project Monitor.

### 3.8 HVAC AND ELECTRIC POWER LOCKOUT:

Prior to the start of any prep work licensed Hospital Electricians, Plumbers, and other Tradesman shall:

- A. Disable all ventilation systems or other systems bringing air into, exhausting air out of, the work area. De-activate the systems by disconnecting wires, by lockable switch, or by other means to ensure against accidental re-start of the system.
- B. The owner shall deactivate power to the work area by switching off all breakers and switching and locking and tagging-out the entire panel. The Contractor prior to start of work shall verify the electrical lockout.
- C. Lock out power to circuits running through the work area whenever possible by switching off and removing breakers from the panel. If circuits must remain live, the Project Monitor shall notify the Contractor such that a variance from the NYS DOL regulations may be obtained. If circuits must remain live, the Contractor shall protect all conduit and wires and label all active circuits.
- D. Abatement/Demolition Contractor shall verify all utility de-activation prior to start of work.

### 3.9 PROCEDURE FOR REMOVAL OF ACM

#### A. Description of Abatement Operation

- a. The removal work shall be conducted according to the following sequence of events:
  1. Restrict area and post asbestos hazard signs
  2. Construct worker and waste decon
  3. Seal off all openings (isolation/critical barriers)
  4. Pre-clean work area
  5. Cover walls and floor with two layers of 6-mil poly
  6. Conduct removal of ACM (using manual methods) HEPA filtered local exhaust shall be utilized
  7. Bag-out asbestos waste
  8. Conduct cleanings
  9. Conduct final inspection (Omega)
  10. Conduct final clearance air sampling
  11. Dismantle containment
- b. The Contractor shall post bi-lingual (English/Spanish) signs at all entrances and the perimeter of the work area at intervals of 25 feet or less. The signs shall be posted such that a person may easily read the following:

**DANGER**

**ASBESTOS  
CANCER AND LUNG DISEASE HAZARD  
AUTHORIZED PERSONNEL ONLY  
RESPIRATORS AND PROTECTIVE  
CLOTHING  
ARE REQUIRED IN THIS AREA**

- c. Isolation of the work area heating and ventilation systems shall be carried out first to prevent contamination/fiber migration to other areas of the building. This will involve sealing all outside openings to the various levels hallway (isolation barriers) and covering walls and ceilings with poly.
- d. The clean side of the isolation barriers shall be monitored by the Project Monitor. If at any time the airborne concentrations of fibers exceed 0.01 fibers/cc, the Contractor shall stop all operations and shall be required to clean all areas as directed by the Project Monitor.
- e. All poly sheeting shall be attached to walls, floors, and permanent equipment with high quality duct tape and/or glue and/or mechanical support to protect from water damage and prevent asbestos from settling on walls, floors, and other surfaces.
- f. The Contractor shall detach and clean all removable electrical, heating, and ventilation equipment and other items connected to asbestos surfaces. These items shall be cleaned / decontaminated and returned to their proper place when the project is completed.

- g. The Contractor shall remove all HVAC filters within the work area and dispose of them as asbestos-containing waste.
- h. Removal operations shall not begin until the work area has been inspected and approved by the Project Monitor.
- i. Removal of ACM shall be conducted in small sections by two-person teams.
- j. The wet ACM, which has been removed, shall be immediately packed and sealed into asbestos waste bags.

B. Waste Bag-out

- a. All ACM and ACM-waste shall be properly packaged according to the following:
- b. Workers clean the outside of the bags and equipment in the waste decon washroom using HEPA-vacuuming and wet wiping. The workers shall then place the cleaned bag inside a second bag prior to passing into the clean area.
- c. Waste bags must be directly loaded into the asbestos waste dumpster.

C. Final Cleaning

- a. After completion of the removal operation all surfaces from which asbestos has been removed (i.e. the concrete sub-floor) shall be cleaned to remove all visible ACM. Power washing is not permitted since it may result in water damage inside the building.
- b. All free water in the work area will be cleaned up.
- c. Plastic sheeting used to protect floors and walls shall be carefully removed and packaged for disposal.

3.10 APPLICATION OF LOCKDOWN SEALANT AFTER ASBESTOS REMOVAL:

- A. At the completion of asbestos removal and before application of lockdown sealant, a visual inspection and air sampling shall be conducted to determine that all removal has been completed.
- B. The sealant may be applied by a one or two coat system and shall be approved for use.
- C. The sealant shall be applied by an electric airless spray gun.
- D. The Project Monitor shall observe the entire clean-up operation.

3.11 REMOVAL AND STORAGE OF CONTAMINATED WASTE:

- A. All routes through the building to be used for transportation of waste shall be protected to avoid contamination. The waste shall exit the building via the utility tunnel exit.
- B. All waste shall be transported through the building (in enclosed carts) according to the route specified by the Project Monitor.

- C. At no time shall random removal of waste from the work area be allowed.
- D. No material shall be dropped inside the work area.
- E. The building waste removal system shall not be used by the Contractor.
- F. The work site and all access routes shall be cleaned daily by the Contractor.
- J. All ACM shall be packaged and sealed in leak-proof containers according to the following:
  - a. The Contractor shall double bag all waste material utilizing 6 mil. polyethylene bags which should not be overfilled. Air inside the bags shall be evacuated with the HEPA-vacuum. The top of the bags shall be twisted and tied in order to achieve a seal.
  - b. Contamination material with sharp edges (metal lather, duct work, ceiling grid, etc.) shall be cut to size and placed in plastic lined boxes which are subsequently bagged.
  - c. All bags shall be marked with pre-printed labels as prescribed Section 61.150 of the EPA regulations, OSHA regulations, and DOT regulation.
- K. No asbestos waste bags shall be stored on-site. The Contractor at the conclusion of each shift must schedule a waste pick-up.

### 3.12 FINAL CLEAN-UP OF WORK AREA:

- A. The following clean-up operation must be conducted:
  - a. AFD's shall continue to operate. All layers of floor and wall poly should be removed from the work area.
  - b. Wet wipe all surfaces inside the work area twice. All HVAC units and other stationary objects inside the work area shall be thoroughly cleaned using wet wiping and HEPA-vacuuming.
  - c. A complete visual inspection of the work area shall be conducted.
  - d. Clearance air monitoring shall be considered satisfactory when every sample is less than 0.01 fibers/cc or less than the background air concentration.
  - e. If the test results exceed the clearance limit clean-up and testing shall be repeated until compliance is achieved.
  - f. The work area must be free of all visible asbestos dust/residue.

### 3.13 TRANSPORTATION AND DISPOSAL OF ASBESTOS CONTAMINATED WASTE:

- A. All ACM, ACM-wastes, and plastic, disposable equipment, and supplies shall be disposed of as contaminated waste in accordance with EPA NESHAPS regulations.
- B. Each asbestos waste bag shall be labeled individually with Generator ID as required which shall be inspected by the Project Monitor.
- C. The waste bags will be counted by both the Contractor Supervisor and the Project Monitor.
- D. Any asbestos waste Hauling Firms sub-contracted must be pre-approved by the Project Monitor and must possess a valid DEC number.
- E. No backhauling or return trips are permitted.
- F. The asbestos waste disposal site selected by the Contractor must be pre-approved by the Project Monitor and the Owner.
- G. Final or progress applications for payments will not be processed unless all hazardous waste manifests generated to date have been received and reviewed by the Project Monitor.

## **(IV.) CONSTRUCTION SAFETY REQUIREMENTS**

### **4.1 SUBMITTAL OF COMPANY HEALTH & SAFETY POLICY:**

At least 5 days prior to the start of work the Contractor shall submit a copy of the Company Health & Safety Policy to the Director of EHS office for review and approval. A duplicate copy of the policy shall be maintained at the job-site available for review by OSHA Inspectors and other interested parties.

### **4.2 FALL HAZARD PROTECTION:**

- A. As part of the general Health & Safety Plan described above, the Contractor shall submit a Fall Hazard Protection Plan.
- B. Fall Hazard Protection Plan must include the following elements:
  - a. Use of protective head and foot wear
  - b. Use of safety lines/harnesses
  - c. Use and qualifications of fall hazard watch person
  - d. Description of guardrails used on scaffolding and manlifts
  - e. Ladder safety (all ladders must be OSHA approved and have inspection stickers displayed)

### **4.3 MSDS SHEETS/CHEMICAL HAZARDS:**

- A. The Contractor shall maintain a copy of the MSDS sheet for all potentially hazardous substances at the job-site as required by OSHA regulations.
- B. The use of regulated solvents such as methylene chloride is strictly prohibited on asbestos projects.
- C. Copies of MSDS's shall be provided to EHS one week prior to the start of the abatement.

### **4.4 NOISE AND DUST CONTROL:**

- A. Noise Control
  - a. The noise level at the perimeter of the work area shall not exceed 85 DbA (OSHA action level for noise) at any time during the project and shall be maintained below 65 DbA (community noise standard) on a continuous basis. If the noise level in the work area exceeds 85 DbA the work crew shall utilize hearing protection.
  - b. If the noise levels associated with the project continually exceed the levels described above, sound barriers or other suitable engineering controls shall be implemented.
- B. Dust Control

The Contractor shall not generate a nuisance dust hazard outside the perimeter of the work area. A nuisance hazard is defined as a visible emission of dust which prevents neighboring occupants from

engaging in their normal routine. If a nuisance dust hazard is shown to exist additional secondary dust barriers shall be constructed.



#### 4.5 FIRE AND ELECTRICAL SAFETY:

##### A. Fire Safety

The Contractor shall have working fire extinguishers at the job-site available for use.

##### B. Electrical Safety

- a. The Contractor is responsible for verifying that all electrical lines running through the work area are inactive and locked & tagged prior to the start of work.
- b. All Contractor electrical equipment shall be equipped with GFIC's as required by OSHA regulations.
- c. The Contractor's equipment shall be inspected prior to the onset of work. Any equipment observed to have bare wires or other deficiencies shall be removed from the site immediately.

#### 4.6 INCIDENT REPORTING:

In addition to completion of an OSHA-200/300 form the Contractor shall immediately report all accidents, fires, and other incidents to the EHS office. Failure to notify the above offices of such incidents shall constitute breach of contract.

**(V.) FINAL INSPECTION/CERTIFICATION**

**5.1 FINAL WALK-THROUGH/INSPECTION:**

- A. After the completion of the asbestos abatement work in each work area a final inspection shall be conducted, where the following parties are requested to attend:
  - a. Abatement Contractor Representative.
  - b. Project Monitor.
  - c. Director of EHS and or representative.
- B. The above listed parties shall verify that all pipes and other substrates are asbestos free prior to the onset of renovation work.

**5.2 CONTRACTOR RESPONSIBILITY TO CORRECT DEFICIENCIES:**

Any ACM discovered in the work areas after the completion of the asbestos abatement phase shall be properly removed by the asbestos Contractor at his/her sole expense under the terms of the original contract (i.e. no change orders).

Attachment “A”  
Abatement Plans