



ABATEMENT PROJECT SPECIFICATION

**THERAPEUTIC RECREATION CENTER
3030 G STREET, SE
WASHINGTON, DC 20019**

ECS PROJECT NO. 37:1413 / 01:23603

FOR

MOODY NOLAN DC

NOVEMBER 17, 2014



November 7, 2014

Mr. Roger Watson
Moody Nolan DC
1225 Eye Street, NW
Suite 210
Washington, DC 20005
RWatson@moodynolan.com

ECS Project No. 37:1413/01:23603

Reference: Abatement Project Specification, Therapeutic Recreation Center, 3030 G Street, SE, Washington, DC 20019

Dear Mr. Watson:

ECS Capitol Services, PLLC (ECS) is pleased to provide Moody Nolan DC with an abatement project specification for the above referenced building. This document was prepared in general conformance with ECS Proposal No. 37:739-EP, dated October 21, 2014.

If there are questions regarding this Specification or need further information, please do not hesitate to contact us at (703) 471-8400.

Respectfully,

ECS CAPITOL SERVICES, PLLC


Joanna Vivanco
Consultant


Stephen R. Geraci
Consultant

Enclosures: Specification Sections
Drawing

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**SECTION 13281
HAZARDOUS AND UNIVERSAL WASTE MANAGEMENT**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable parts of DIVISION 1 – GENERAL REQUIREMENTS shall be included in and made a part of this Section.

1.02 WORK INCLUDED

- A. This Section covers the demolition, use, handling, storage, transporting, accumulation and disposal or recycling of hazardous materials/substances that may be encountered within the scope of work by the Contractor during the course of the work. The Contractor is made aware by this Specification that hazardous materials/substances are regulated by several statutes and regulations and require special care. Work under this Section includes the proper removal, packaging, and recycling (or disposal where applicable) of the following:

<u>Fixture Type / Material</u>	<u>Estimated Quantity</u>
Fluorescent Lamps	2,500 LF
Compact Fluorescent Bulbs	97 EA
High-Intensity Discharge Lamps (HIDS)	40 EA
Suspect PCB-containing Lamp Ballasts*	285 EA
Thermostats	25 EA
Lead Acid Emergency Exit Light Batteries	20 EA
Smoke Detection Equipment	Not Quantified
Desktop Computers and Monitors	Not Quantified
Fire Extinguisher	10 EA

<u>Fixture Type / Material</u>	<u>Estimated Quantity</u>
Water Fountains**	2 EA
Air Handler Unit** (HVAC System)	4 EA
Refrigerators**	3 EA
Water Treatment Chemicals	Deminimus Quantity

LF = Linear Feet; EA = Each

- Notes:
- * The Contractor shall have the option of inspecting each ballast as it is removed; Ballasts that are labeled as non-PCB containing may be disposed of as normal construction waste;
 - ** The Contractor shall properly remove and recycle CFCs or other ozone depleting materials;

Where possible, the Contractor is encouraged to recycle materials. If materials are to be recycled, the Contractor shall document proper documentation that the material has been received by a firm that can recycle the materials. Documentation also on the amount of material received by this vendor shall also be included.

CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT QUANTITIES, QUANTITIES PROVIDED ARE ESTIMATES ONLY. CONTRACTOR RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ENTIRE QUANTITY OF MATERIALS LISTED IN SECTION 1.02

1.03 RELATED WORK

- A. Section 13282 Removal and Disposal of Asbestos-Containing Materials
- B. Section 13283 Lead Control Procedures

1.04 CODES AND REGULATIONS

- A. General Applicability of Codes and Regulations, Guidelines and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, guidelines 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.

B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Designer harmless for failure to comply with any applicable work, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

C. Federal Requirements: which govern hazardous material abatement work or hauling and packaging of hazardous waste materials include but are not limited to the following:

1. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, including but not limited to:

- | | |
|-----------------------|---|
| 29 CFR 1910-1990 | - Occupational Safety and Health |
| 29 CFR 1910.134 | - Respiratory Protection |
| 29 CFR 1910.145 | - Specifications for Accident Prevention Signs and Tags |
| 29 CFR 1910.1200 | - Hazardous Communication |
| 29 CFR 1910.20 | - Sub-part C, General Safety and Health Provisions |
| 29 CFR 1926.55 | - Gases, Vapors, Fumes, Dusts, and Mists |
| 29 CFR 1926 Subpart E | - Personal Protective and Life Saving Equipment |
| 29 CFR 1910.1030 | - Bloodborne Pathogens. |

2. EPA: U. S. Environmental Protection Agency, including but not limited to:

- | | |
|----------------------|---|
| 40 CFR 61 | - National Emissions Standards for Hazardous Air Pollutants |
| 40 CFR 9 & 82 | - Protection of Stratospheric Zone (CFCs), Clear Air Act Amendments of 1990 |
| 40 CFR 122 & 125 | - National Pollutant Discharge Elimination System, Clean Water Act |
| 40 CFR 260-272 | - Solid and Hazardous Wastes, Resource Conservation and Recovery Act |
| 40 CFR 165 | - Disposal and Storage of Pesticides and Pesticide Containers |
| 40 CFR Subchapter J, | - Superfund, Emergency Planning, and Parts 300-373 |
| 40 CFR 700-799 | - Community Right-to-Know Programs |
| | - Toxic Substances Control Act (TSCA) |

3. DOT: U. S. Department of Transportation, including but not limited to:

49 CFR 100-180 - Department of Transportation

- D. State Requirements: Abide by all state requirements which govern the management, packaging, salvaging, and recycling of hazardous and universal waste.
- E. Local Requirements: Abide by all local requirements which govern the management, packaging, salvaging, and recycling of hazardous and universal waste.
- F. Building Codes: Comply with applicable provision of state and/or local building codes that govern any part of the work.
- G. Reference Standards: Comply with the following applicable reference standards:
 - 1. American National Standards Institute (ANSI):
Z288.2-1992 - Standard for Respiratory Protection

1.05 WORKER PROTECTION

- A. Worker Training: The Contractor must ensure that every person is trained pursuant to the directions in 49 CFR 172.202 who:
 - 1. Prepares hazardous materials for packaging, salvaging, and recycling;
 - 2. Handles, loads, unloads or moves hazardous materials;
 - 3. Fills out forms for the transportation of hazardous materials; or
 - 4. Is in any way responsible or accountable for any hazardous materials at the site.
- B. Contractor personnel must possess all personal licenses, permits, and certifications required to perform their duties.

1.06 SUBMITTALS

Before the start of work, submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.

- A. Copy of licenses for waste hauler.
- B. U.S. EPA Identification Number of waste hauler.

- C. Copy of EPA “Notice of Hazardous Waste Activity” form.
- D. Copy of forms required by local agencies.
- E. Sample of disposal label to be used.
- F. PCB Plan of Action: Provide a PCB Plan of Action addressing all requirements set forth in Section 3.02.B. including qualifications of transporter, methods of packaging, salvaging, and recycling hazardous waste, and a description of the methods to be employed to prevent release to the environment.
- G. Emergency Response Plan: Provide an Emergency Response Plan addressing the steps that will be taken in the event of a hazardous material spill or leak including name, emergency phone numbers, and notification of the closest hazardous material emergency response unit; reporting procedures; and spill controls.

PART 2 - PRODUCTS

2.01 PROTECTIVE CLOTHING

- A. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the work area. Provide a sufficient number for all required changes, for all workers in the work area. Dispose of coveralls as contaminated waste at the end of each day.
- B. Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide four spares for use by Owner’s Representative, Project Monitor and Owner. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean and decontaminate hats before removing them from work area at the end of the project.
- C. Gloves: Provide work gloves to all workers and require that they be worn at all times in the work area. Gloves must be secured to the coveralls using duct tape to protect arms and hands. Do not remove gloves from Work Area. Dispose of as clothing waste at the end of the work.

2.02 WASHING FACILITIES

- A. Provide washing facilities to be used by all workers when exiting the work area.

1. Provide temporary sink with hot and cold water supply. Filter all waste water.
2. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.03 EYEWASH STATION

Where the eyes of employees may be exposed to injurious corrosive materials, suitable facilities for flushing of the eyes shall be provided within the work area for immediate emergency use.

2.04 FIRST AID

Comply with governing regulations and recognized recommendations within the construction industry.

2.05 FIRE EXTINGUISHERS

Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several.

2.06 DISPOSAL BAGS

Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags.

2.07 SMALL QUANTITY STORAGE CONTAINERS

Provide five gallon or less capacity containers for small quantity waste segregation, manufactured with structurally durable materials compatible with the hazardous waste type(s) used.

2.08 DOT HAZARDOUS WASTE DISPOSAL DRUMS

Provide DOT approved Open -Top Drums (55 gallon) in accordance with DOT regulations title 49 CFR Parts 173, 178, and 179.

2.09 DOT HAZARDOUS WASTE LABELS

Provide Hazardous Waste Labels in accordance with DOT regulations Title 49 CFR parts 173, 178, and 179.

PART 3 - EXECUTION

3.01 PROTECTION

- A. Storage: The Contractor shall provide a temporary construction trailer or other secured area as a storage area for tools, equipment and supplies. Waste generated during abatement shall be stored in a separate area provided by the Contractor.
- B. Electrical Service:
 - 1. General: Provide a weatherproof, grounded, temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work. The Contractor shall deactivate and lock out electrical service to the work areas prior to the removal of light fixtures from the ceiling system. The lock out of electrical equipment shall be performed in accordance with 29 CFR 1910.147 "Control of Hazardous Energy (Lockout/Tagout)".
 - 2. Lockout: Lockout all existing power to or through the work area. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area is to be provided from outside of the work area.
- C. Securing Work Area: Secure work area from access by public, occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area.
- D. Demarcation of Work Area: Provide warning signs at each locked door.
- E. Housekeeping: Maintain all surfaces within the Work Area free of accumulations of debris to prevent dispersion and contamination. Give meticulous attention to restricting the spread of debris, keep waste from being distributed over the general area or to other areas in the building. Post appropriate hazard warning signs. Equip personnel engaged in cleaning up scrap and waste with appropriate personal protective clothing.

3.02 REMOVAL

- A. Removal of components/materials: The Contractor shall segregate all materials containing mercury and prevent mercury from being combined with other liquid or solid hazardous or non-hazardous materials.
1. The Contractor shall remove the fluorescent lamps from each fixture and place them in a cardboard shipping container or similar carton. Care is to be exercised so as to not break the lamps.
 2. Broken fluorescent bulbs must be handled, stored, labeled and disposed as hazardous waste.
 3. Mercury-containing materials shall be stored in appropriate containers that are clearly labeled to identify the contents. Appropriate containers are those that will not deteriorate or react with mercury or allow mercury to leak into the environment during normal use handling, and disposal procedures. Regulations for containing and labeling mercury and mercury-containing materials can be found in 49 CFR 172.101.
- B. Removal of components containing PCB's:
1. The Contractor shall remove the light fixtures from the ceiling system and access the ballasts in each fixture. Light ballast that do not have a non-PCB label shall be treated as suspect PCB containing.
 2. The Contractor shall provide DOT and EPA approved 55 gallon steel drums and labels for the packaging of light ballasts. A minimum of two layers of six millimeter polyethylene sheeting shall be placed on the floor beneath the disposal drums. Fluorescent light ballasts and HID capacitors shall be containerized separately.
 3. The Contractor shall place all unlabeled light ballasts in properly labeled steel drums. No more than 200 ballasts are to be placed in each 55 gallon steel drum.
 4. If the Contractor encounters any unlabeled light ballast which has leaked, the Contractor shall remove the contaminated components of the light fixture (if any) and wrap them in two layers of six millimeter polyethylene sheeting. The contaminated components or fixture shall then be placed in the labeled steel drum for proper disposal.
- C. Removal of lead acid emergency, exit light batteries and other materials
1. The Contractor shall properly remove and dispose of all other materials identified.
 2. The Contractor shall provide approved labeled containers for the recycling or disposal of these materials.

3. If the Contractor encounters any battery which has leaked, the Contractor shall remove the contaminated components of the fixture (if any) and wrap them in 2 layers of 6-millimeter polyethylene sheeting. The contaminated components or fixture shall then be placed in the container for proper disposal.

3.03 PRECAUTIONS AND HANDLING SPILLS

- A. Personal Protective Equipment (PPE) shall be worn when working with PCB ballasts and mercury containing equipment. When handling ballast and/or components contaminated by a leaking ballast, and when cleaning up small spillage, workers shall wear acid resistant gloves. When a ballast is being removed from equipment, safety glasses should also be worn.
- B. When leaking PCB's come into contact with heat sources, the PCB material may vaporize. Inhalation of these vapors may cause respiratory problems; therefore, the work area shall be ventilated and proper respiratory protection shall be provide to the worker by the Contractor.
- C. If PCB liquids should get into the eyes, the eyes should be irrigated with water for a minimum of 15 minutes. If PCB's come into contact with an open wound or abrasion, the affected area shall be cleaned with soap and water at least three times. Workers should contact their supervisor immediately. This should be followed up by an examination by the worker's personal physician.
- D. Liquid PCB spills should be cleaned up using rags and/or other absorbent materials. The residual PCB's should be removed using a petroleum solvent. The solvent should be used sparingly on a cloth. Caution shall be exercised when using the solvents, as prolonged breathing of the vapors or contact with the skin should be avoided. Solvent resistant gloves and proper respiratory protection shall be provided to the worker by the Contractor pursuant to the MSDS for the solvent.
- E. Most solvents are highly flammable and shall be kept away from heat and sparks. Solvent containers shall be kept tightly sealed when not in use. Workers shall wear safety glasses and protective gloves when using solvents. The rags, gloves, and absorbent material, when contaminated with solvent, shall be discarded in an impermeable container, i.e., double strength plastic bags.

3.04 PACKAGING AND LABELING

- A. All fluorescent lamps shall be packaged, unbroken, in boxes clearly labeled with the name and address of the generator and a description of the material.
- B. Broken lighting tubes/lamps, if present, shall be cleaned up in accordance with OSHA applicable regulations, placed in double plastic bags sealed with tape, and disposed as hazardous waste as required by the EPA and District of Columbia.

- C. All non-PCB labeled and PCB ballasts shall be segregated and packaged separately in a 55-gallon, open head, steel drum that meets Federal DOT criteria.
- D. The packaging of all PCB ballasts and PCB contaminated components shall be performed in a way that will prevent potential PCB leakage during shipment to the recycler.
- E. If the ballasts are leaking, 6 to 12 inches of absorbent material shall be added to the bottom of the drums before filling with ballasts. Additional absorbent material shall be placed in the interstitial areas between ballasts. Absorbent shall not be used in packaging of non-leaking ballasts.
- F. The drums shall be packed full to prevent materials from shifting during shipment. However, drums shall not be "overpacked." No more than 200 ballasts shall be placed into a single drum and the weight shall not exceed 1,000 pounds.
- G. Place all used disposable protective clothing, plastic, and contaminated rags in the drum.
- H. All drums shall be properly sealed to prevent any leakage.
- I. Each drum holding PCB ballasts and/or PCB contaminated lighting fixture components shall be labeled as follows:
 - 1. On two parallel sides of the container:

"POLYCHLORINATED BIPHENYLS (PCB'S) ORM-E UN2315, BALLASTS."
 - 2. On two opposite sides, use a "THIS END UP" label, with arrows pointing to the top of the drum.
 - 3. If the above labels are not commercially available, the proper marking can be hand or mechanically ink printed. They must, however, be in a sharply contrasting color from the drum, and not be obscured by other labels or attachments.
 - 4. The name and address of the generator and the date the ballasts were removed shall be placed on each drum.

3.05 DETERMINATION OF HAZARDOUS WASTE MATERIALS

- A. All material outlined in the scope of work section as unidentified shall be characterized prior to disposal/recycling. The requirements of RCRA shall be utilized in determining whether a material is hazardous or non-hazardous.

- B. Testing of waste shall be performed by an American Association for Laboratory Accreditation (AALA) accredited laboratory retained by the Contractor. Include the cost of testing in the contract sum and supply all test results to the Owner.

3.06 PACKAGING OF WASTE

- A. The definition of HAZARDOUS MATERIALS includes those materials designated by DOT as posing an unreasonable threat to the public and the environment. The term "Hazardous Materials" includes all of the following: (1) Hazardous Substances, (2) Hazardous Wastes, (3) Marine Pollutants, (4) Elevated Temperature Material (5) Materials identified in 49 CFR Part 172.101, and (6) Materials meeting the definitions contained in 49 CFR Part 173.
- B. The Contractor shall ensure that each segregated Hazardous Waste is packaged for transport in appropriate containers and labeled in accordance with DOT regulations (49 CFR 100-180) and EPA's RCRA regulations (40 CFR 261).
- C. IMPORTANT: Do Not Mix Waste Streams - each Waste Type shall be placed in drums/containers containing only an identical type of waste. The Contractor shall take all appropriate care to ensure that incompatible wastes are not mixed.
- D. The Contractor shall ensure that any Hazardous Wastes/Material generated during the course of this work are packaged into containers appropriate to the type of waste, and adequately sealed to prevent leakage or release.
- E. The Contractor shall anticipate the types and quantities of wastes to be generated to avoid time delays.
- F. Sealed and labeled containers shall remain sealed. Do not open previously sealed containers. Do not place additional waste into previously sealed containers.
- G. Strict Prohibition: No liquid hazardous waste shall be dispensed into Roll-Off Containers.
- H. The Contractor shall ensure that all containers of hazardous materials are labeled with appropriate signs, shipping placards, pictograms, etc. in accordance with DOT and OSHA GHS regulations. Adjacent to each label, the Contractor shall enter the date indicating when waste was first placed in each drum (Accumulation Start Date).

3.07 TEMPORARY STORAGE

- A. Partially filled containers of hazardous waste may be stored at the work site for intermittent packaging provided:
 - 1. Each container is properly labeled when it is first placed in service;

2. Each container remains closed at all times except when compatible waste types are added (do not mix waste streams);
3. A designated secure accumulation area is established, and
4. The storage container is secured from public access.

3.08 SHIPPING

- A. A manifest must be prepared when fluorescent lamps and PCB waste and other materials outlined in the scope of work are offered for transport for off-site treatment, storage, and recycling. The waste manifest fulfills requirements for a material's Bill of Lading. Waste Manifests shall be properly completed by the Contractor for each waste shipment and shall list each transportation container including any non-hazardous waste or hazardous materials shipped. The manifest shall contain all information required by applicable Federal, State, and local hazardous waste or materials regulations. The Contractor shall provide all data required for waste transportation, treatment, and recycling, and for completion of hazardous waste or material generator report as required by the regulatory agency of jurisdiction.
- B. To complete the waste document, the information provided shall include, but is not limited to Proper Shipping Name (i.e., ORM-D. UN2315); Total Shipment in Pounds, and the Quantity of Material being shipped.
- C. A shipping label containing the appropriate address information shall be prepared and placed on top of the shipping drum/box and covered with transparent adhesive tape.
- D. Recycling of all specified materials shall be in accordance with all State and Federal regulations.
- E. All fluorescent lamps shall be transported to an approved recycling facility. The Contractor may have the drum(s) and other PCB materials transported to an approved ballast recycling facility which dismantles the ballast, segregates, and packages the PCB components of a ballast for incineration and then reclaims non-contaminated metals. All PCB-contaminated materials remaining after recycling are to be destroyed by incineration.
- F. The Contractor and the Transporter must comply with the DOT Emergency Response Communication Standards applicable to the shipment of hazardous materials.
- G. All recycling sites shall be in compliance with all Federal, State, and local regulations.

3.09 RECYCLING OF NON-HAZARDOUS AND HAZARDOUS MATERIALS

- A. All materials regardless of hazard classification shall be manifested for recycling and shall be recycled in accordance with all applicable Federal, State and local regulations.
 - 1. Contact EPA, State and local authorities to determine specific material recycling requirements.
 - 2. The recycler will be required to properly store and secure waste at all times. No debris shall be left in the yard or in uncovered or unlocked trucks or dumpsters. Incineration of debris is unacceptable.

- B. Recycling of Hazardous Liquid or Solid Wastes:
 - 1. Comply with RCRA, State and local regulations.
 - 2. Retain all project documents provided by the recycling site.
 - 3. At completion of hauling and recycling of each load submit copy of Uniform Hazardous Waste Manifest to the Owner.

13281 – Hazardous and Universal Waste Management
Therapeutic Recreation Center
3030 G Street, SE, Washington, DC

END OF SECTION

SECTION 13282
REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

The BIDDING REQUIREMENTS, CONTRACTING REQUIREMENTS and CONDITIONS OF THE CONTRACT, and applicable parts of DIVISION 1 – GENERAL REQUIREMENTS shall be included in and made a part of this Section.

1.02 WORK INCLUDED

- A. It is the responsibility of the Contractor to verify any and all existing conditions and quantities of materials to be removed prior to submittal of Bid. The Contractor shall, at a minimum, submit a Bid based on information and methodologies set forth in this Specification. If the Contractor feels an alternate method of remediation other than described herein would improve the efficiency and cost effectiveness or quality of the final product, the Contractor may submit an alternate Bid based upon those means and methods. Shop drawings and/or other relevant information regarding the alternative methods must be submitted along with the alternate bid. The Owner and/or the Owner's Representative will review alternative methods prescribed in the alternate bid. Alternative methods may not be utilized without written approval from the Owner and/or the Owner's Representative.
- B. The scope of work included in these documents requires the Contractor to provide all labor, equipment, materials, and transportation necessary to complete the environmental abatement, remediation, and testing as specified herein.
- C. The materials identified in the following table contain asbestos, therefore by regulation, and this Specification, require special handling and care. The purpose of this Section and Section 3 is to outline the procedures to be followed during the removal of these materials.
- D. The Contractor shall remove and properly dispose the following estimated quantities of asbestos containing materials in accordance with this Specification. The quantities listed represents estimates only and are not guaranteed. The Contractor shall not use quantities listed herein as a sole basis for preparing bids. Materials identified as Asbestos Containing Materials shall be reviewed completely and thoroughly by bidders during the pre-bid site visit and other viewing times made available by the Owner. It is the responsibility of the bidders to review and confirm all quantities and field conditions, including: locations, surface area, thickness, cross-sectional area, component layers, and substrate conditions. Neither the Owner, Owner's Representative, or the Owner's Agents will be responsible for errors or omissions and/or changes for extra work arising from any bidders' failure to become familiar

with the existing site conditions, requirements of the work, and the results to be produced. By submitting a bid, the bidder further agrees that the description contained herein (i.e., quantities, descriptions, locations, areas, thickness, etc.) are adequate and that the bidder will produce the required results.

E. Asbestos Containing Materials

The Contractor shall remove and properly dispose of the entire quantity of the following asbestos-containing materials:

<u>General Location</u>	<u>Material</u>	<u>Friability</u>	<u>Estimated Quantities</u>
Basement Boiler Room	Boiler Tank Insulation and Cloth Wrap	Friable	150 SF
2nd Floor Open Storage Area	Plaster Ceiling - Black Layer	Friable	500 SF
Stage, Storage Rooms, Bathroom, Gym Offices, Break Room, Fitness Center, Closets	12"x12" Brown Mottled Floor Tile and Associated Black Mastic	Category I Non-Friable	2,700 SF
Janitor Closet By Offices	Black Sink Under Treatment	Category II Non-Friable	1 EA
Senior Center Closet	Grey 12"x12" Floor Tile	Category I Non-Friable	70 SF
<u>Assumed Asbestos Containing Materials*</u>			
Pipes within Chases behind Walls and above Ceiling throughout the Building	Thermal Systems Insulation (TSI) on Pipes/Fittings	Friable	Unknown
Mechanical Room	Boiler Units – Interior Components	Unknown	Unknown (2 Boilers)
Locations requiring a Rated Fire Door and Door Casing	Fire Door Insulation	Friable	2 EA (Labeled)
Showers and Kitchen	Ceramic Tile Mastic/Floor Felt	Category I Non-Friable	Unknown
Mechanical and Electrical Rooms, Electric Systems	Electric Panels: Cement Components	Category II Non-Friable	Unknown

<u>General Location</u>	<u>Material</u>	<u>Friability</u>	<u>Estimated Quantities</u>
Heating and Plumbing Systems	Pipe Flange Gaskets	Unknown	Unknown
HVAC System	Air Handler Units: Interior Components	Unknown	Unknown (2 Units)
Auditorium, Offices, Fitness Center, Recreational Rooms	Chalkboard/Bulletin/Wall Panel Board/Mirror Mastics	Category II Non-Friable	30 EA
Large Recreational Room	Water Fountain Components	Unknown	2 EA
Offices, Recreational Rooms, Fitness Center	Radiators – Cement Boards/Insulation Components	Unknown	16 EA
Storage Room	Hood – Cement Board	Category II Non-Friable	1 EA
Exterior	Air Handling Units – Interior Components	Unknown	Unknown (2 Units)
Behind Interior Finishes, Exterior Veneer and/or Subgrade Walls, and under Ceramic Flooring	Waterproofing Membranes/Mastics	Category II Non-Friable	Unknown

Notes: EA = Each; LF = Linear Feet; SF = Square Feet;

* These materials, if present, could not be reached at the time of the survey. These materials should be presumed to be asbestos-containing materials (ACMs) until determined otherwise.

Identified asbestos-containing floor tile and associated mastic should be assumed to be present under furniture (cabinets, shelves, lockers, HVAC units/radiators and kitchen walk-in refrigerators) and partition walls.

Drawings developed by ECS with approximate ACM locations are attached to this Specification. However, CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES. Any exception taken should be noted with bid submission. Contractor is responsible for the removal of the ACMs identified entirely. Quantities provided are estimates only.

1.03 PRE-EXISTING CONTAMINATION

- A. The Contractor will be responsible for cleaning any pre-existing contamination associated with the identified asbestos containing materials.

1.04 EXPLORATORY DEMOLITION (as Needed)

- A. The Contractor is responsible for conducting exploratory demolition of walls and ceilings to locate any hidden pipeline. The exploratory demolition consists of the removal of a section, no greater than 2' x 2', of walls and ceilings in order to observe wall and ceiling cavities.
- B. In areas where asbestos containing materials are located within wall cavities and ceilings, the Contractor is responsible for conducting demolition of walls and ceilings within containment under negative pressure (minimum negative pressure 0.02 inches of water (0.02" w.g.)) as Class II Work in accordance with federal and local applicable regulations and this Specification. If uncovered TSI is found to be damaged, debris generated from the exploratory demolition shall be considered contaminated and shall be disposed as asbestos-containing materials.

1.05 ADDITIONAL ABATEMENT NOTES

- A. For informational purpose, Asbestos Containing Materials contained herein have been previously determined to contain the following asbestos concentrations:

Material	Amount	Type of Asbestos
Boiler Tank Insulation and Cloth Wrap	2%	Chrysotile
Plaster Ceiling - Black Layer	10%	Chrysotile
12"x12" Brown Mottled Floor Tile and Associated Black Mastic	Floor Tile: 6% Mastic: 7%	Chrysotile Chrysotile
Black Sink Under Treatment	6%	Chrysotile
Grey 12"x12" Floor Tile	8%	Chrysotile

- B. The Contractor shall provide units costs for the removal of the following materials:
 1. TSI (various diameters per linear foot – glove bag removal);
 2. TSI (various diameters per linear foot – removal within containment);
 3. Boilers: interior components;
 4. Fire door insulation (per door);
 5. Ceramic Tile with associated Mastic/Floor Felt (per square foot);
 6. Electrical Panels: cement components;
 7. Pipe Flange Gasket (various diameters – per flange);

8. Air Handler Units: interior components;
9. Chalkboards, Bulletin Boards and Mirrors with associated Mastic (per square foot);
10. Water Fountains: interior components;
11. Radiators: cement boards/mastics/insulation components;
12. Hood: cement board;
13. Exterior Air Handler Units: interior components;
14. Waterproof Membranes/Mastics (per square foot).

Note 1: For unit cost pricing, the Contractor shall assume that all mobilization, insurance, notification, profit etc. are to be included in the unit cost estimate. The Contractor shall assume that the work will be performed during the scope of the contracted asbestos abatement work and not requires a second mobilization, notification or permit.

Note 2: The quantities indicated are for informational purposes only. The Contractor is responsible for verifying all quantities to be removed to complete the scope of work. The Owner's Representative will be present during abatement activities to verify quantities removed. Where actual quantities vary from the estimated quantities herein in this Specification, the Contractor's base bid scope of work may be adjusted based on the actual quantity of materials removed using the submitted unit cost rates.

Note 3: During the performance of the project, the Contractor will be subject to inspection by the Owner's Representative. If the Contractor is found not in compliance with this Specification, the Contractor will stop all work immediately to resolve the violation. Standby time shall be at the contractor's expense.

Note 4: The Contractor shall assume that all materials listed will be removed within containment under negative pressure (minimum neg. pressure 0.02" w.g.). Only certain materials, such as roofing materials, exterior window and door caulk may be removed without a negative pressure containment.

Note 5: For floor tile and mastic removal, the Contractor shall assume under the base bid that multiple layers may be present. In addition, under the base bid, the Contractor shall remove all floor tile and mastic under carpets, partition walls, cabinets, and all other fixture and/or obstructions. The Contractor shall coordinate demolition to access these materials (if required) with the Owner and the general contractors on-site.

Note 6: If areas with carpeted flooring are uncovered, carpet contaminated with asbestos shall be removed and disposed as ACM. In some instances, these materials that are covering asbestos flooring (such as cabinets or carpets) may disposed of as non-asbestos, if it can be demonstrated that these materials are not contaminated by asbestos.

Note 7: When exploratory demolition of hard ceilings and walls is required to expose concealed pipes that may be asbestos-containing, due to unknown condition of these materials, the exploratory demolition shall be performed within containment under

negative pressure as Class I Work in accordance with federal and local applicable regulations and this Specification. During demolition, no visible emissions of dust are allowed. The Contractor must use dust control measures (i.e., water) during demolition. If uncovered pipe insulation is found to be damaged, debris generated from the exploratory demolition shall be considered contaminated and shall be disposed as asbestos-containing material.

Note 8: For pipe/duct/boiler insulation removal, the Contractor will be responsible, under the base bid estimate, to clean and decontaminate any areas where pipe/duct/boiler insulation is to be removed.

Note 9: The Abatement Contractor shall coordinate with the Mechanical, Electrical, Plumbing, and General Contractors to ensure that all appropriate systems that will be impacted by the Work have been properly decommissioned prior to the start of any work.

Note 10: The Abatement Contractor shall coordinate with the General Contractor selected for this project to verify that the structure will support the planned activities and comply with local building codes and OSHA requirements.

1.06 RELATED WORK

- A. Section 13281 Hazardous and Universal Waste Management
- B. Section 13283 Lead Control Procedures

1.07 CODES AND REGULATIONS

- A. General Applicability of Codes, Regulations and Standards : Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes and regulations 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.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Designer harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the contractor, the contractor's employees, or subcontractors.

C. Federal Requirements: Abide by all Federal requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials including, but not limited to, the following:

1. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration including but not limited to:

29 CFR 1910.1001	- Asbestos, Tremolite, Anthophyllite, Actinolite; 29
CFR 1926.1101	- Asbestos in Construction
29 CFR 1910.134	- Respiratory Protection;
29 CFR 1926.103	- Respiratory Protection;
29 CFR 1910.146	- Permit Required Confined Space;
29 CFR 1926.20	- General Safety and Health Provisions;
29 CFR 1926.21	- Safety Training and Education;
29 CFR 1926.23	- First Aid;
29 CFR 1926.24	- Fire Protection;
29 CFR 1926.25	- Housekeeping;
29 CFR 1926.28	- Personal Protective Equipment;
29 CFR 1926.51	- Sanitation;
29 CFR 1926.55	- Gases, Vapors, Fumes, Dusts, and Mists;
29 CFR 1926.56	- Illumination;
29 CFR 1926.57	- Ventilation;
29 CFR 1926.59	- Hazard Communication;
29 CFR 1910.1200	- Hazard Communication;
29 CFR 1926.200	- Accident Prevention Signs and Tags;
29 CFR 1926.300, 301, 302	- Hand and Power Tools;
29 CFR 1926.451	- Scaffolding;
29 CFR 1926.500, 502, 503	- Fall Protection;
29 CFR Subpart E	- Personal Protective and Life Saving Equipment

2. DOT: U. S. Department of Transportation, including but not limited to:

49 CFR 171 and 172	- Hazardous Substances;
49 CFR 171-180	- General Awareness and Training Requirements for Handlers, Loaders and Drivers;
49 CFR 171-180	- Editorial and Technical Revisions

3. EPA: U. S. Environmental Protection Agency including but not limited to:

40 CFR 61-SUBPART A	- General Provisions
40 CFR 61-SUBPART M	- National Emission Standard for Asbestos

40 CFR 61-Appendix A to - Interpretive Rule Governing Roof Removal
SUBPART M Operations
40 CFR 763 - Asbestos Containing Material in
 Schools

- D. Local Requirements: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.
- E. Building Codes: Comply with applicable provision of state and/or local building codes that govern any part of the work, including but not limited to the following:
1. BOCA Chapter 33 Site Work, Demolition, and Construction with special attention to:
 - a. BOCA 3304 Protection of the Public
 - b. BOCA 3307 Health Hazards

1.08 REFERENCE STANDARDS

- A. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in the Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006 (202) 626-7300
AIHA	American Industrial Hygiene Assoc. 2700 Prosperity Ave., Suite 250 Fairfax, VA 22031 (703) 849-8888
ANSI	American National Standards Institute 1899 C Street, NW, 11 th Floor Washington, DC 20036
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329 (404) 636-8400
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959 (610) 832-9585

NFPA National Fire Protection Assoc.
 One Batterymarch Park
 P.O. Box 9101
 Quincy, MA 02269-9101 (617) 770-3000 (800) 344-3555

UL Underwriters Laboratories
 333 Pfingsten Rd.
 Northbrook, IL 60062 (708) 272-8800

- B. Federal Government Agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government.

CFR Code of Federal Regulations

CPSC Consumer Product Safety Commission

DOC Department of Commerce

DOT Department of Transportation

EPA Environmental Protection Agency

NIST National Institute of Standards and Technology
(U.S. Department of Commerce)

OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)

1.09 DEFINITIONS

- A. Accreditation: A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.
- B. Accredited Laboratory: A laboratory that has been evaluated and given approval to perform a specified measurement or task (such as the National Voluntary Laboratory Accreditation Program), usually for a specific property or analyze for a specified period of time.
- C. Accredited Training Provider: A training provider that meets the standards established by EPA to provide training under the EPA model accreditation plan.

- D. Adequately Wet: To sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from the asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.
- E. Air Sampling: Sampling of asbestos concentrations within the asbestos control area and inside the physical boundaries which is representative of the airborne asbestos concentrations which may reach the breathing zone of personnel potentially exposed to asbestos. The PM shall be responsible for all area monitoring.
- F. Amended Water: Water containing a wetting agent or surfactant with a maximum surface tension of 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.
- G. Area Monitoring: Sampling of asbestos concentrations within the asbestos control area and inside the physical boundaries which is representative of the airborne asbestos concentrations which may reach the breathing zone of personnel potentially exposed to asbestos. The Owner's Agent/Representative shall be responsible for all area monitoring.
- H. Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least one percent.
- I. Asbestos Control Area: That area where asbestos removal operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.
- J. Asbestos-Containing Material (ACM): Any material containing more than 1% asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.
- K. Asbestos-Containing Waste Material: Any waste that contains asbestos. This term includes filters or other materials contaminated with asbestos. This term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
- L. Asbestos Debris: Pieces of ACM that can be identified by color, texture, or composition, or dust, if the dust is determined by an accredited inspector to be ACM.
- M. Asbestos Fibers: Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

- N. Background: The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.
- O. Blank: A non-exposed sample of the medium used for testing, such as a wipe or filter, which is analyzed like other samples to determine whether (1) samples are contaminated with asbestos before samples are collected (e.g., at the factory, or at the testing site), (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the laboratory).
- P. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches around the nose and mouth of the face.
- Q. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.
- R. CFR - The Code of Federal Regulations: The basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.
- S. Change Rooms and Shower Facilities: Rooms equipped with separate storage facilities for clean protective work clothing and equipment and for street clothes which prevent cross-contamination with a shower facility in between.
- T. Competent Person: An individual who meets the requirements of OSHA as a "competent person" for the specific activity involved in the work. The "competent person" must meet the requirements of 29 CFR 1926.32(f), and 29 CFR 1926.1101.
- U. Containment: A process to protect workers and the environment by controlling exposures to asbestos dust and debris created during abatement.
- V. Decontamination Room: Room for removal of contaminated personal protective equipment (PPE).
- W. Detection Limit: The minimum concentration of a component that a method can reliably measure.
- X. Eight Hour Time Weighted Average (TWA): Airborne concentration of asbestos to which an employee is exposed, averaged over an 8-hour time work day.
- Y. Encapsulants: Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.

1. Removal Encapsulant (can be used as a wetting agent).
 2. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material).
 3. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage).
 4. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).
- Z. Engineering Controls: Measures other than respiratory protection or administrative control that are implemented at the work site to contain, control, and/or otherwise reduce exposure to asbestos-contaminated dust and debris. The measures include process and product substitution, isolation, and ventilation.
- AA. Exposure Monitoring: The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. asbestos) to which he/she is exposed.
- BB. Federal Register: A document published daily by the Federal government that contains either proposed or final regulations.
- CC. Friable Asbestos Material: One percent asbestos containing material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- DD. Glovebag Technique: Those asbestos removal and control techniques put forth in 29 CFR 1926.1101 Appendix G.
- EE. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.
- FF. Intact: ACM that has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.
- GG. Leak-tight: That solids or liquids cannot escape or spill out. It also means dust-tight.
- HH. Negative Pressure Enclosure (NPE): A pressure differential and ventilation system where the work area is maintained at a negative pressure relative to air pressure outside the work area.
- II. Non-friable Asbestos Material: Material that contains asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. It is understood that asbestos

fibers may be released under other conditions such as demolition, removal, or mishap.

- JJ. Permissible Exposure Limit (PEL) (for asbestos fibers): 0.1 fibers per cubic centimeter of air as an 8 hour time weighted averaged as determined by 29 CFR 1926.1101.
- KK. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.
- LL. Personal Samples (for sampling asbestos fibers): Air samples collected from within the breathing zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 2.5 liters/minute of air.
- MM. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
- NN. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- OO. Surfacing Material: Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).
- PP. Thermal System Insulation (TSI): Insulation applied to pipes, fittings, boilers, breeching, tanks, ducts or other components to prevent heat loss or gain.
- QQ. Visible Emissions: Any emissions containing particulate material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
- RR. Wetting Agent: A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at most 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.
- SS. Work Area: The area where asbestos abatement or related work is performed which is defined and/or isolated to prevent the spread of asbestos fibers, or debris, and entry by unauthorized personnel.
- TT. Work Practice: A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

1.10 SUB-CONTRACTING REQUIREMENTS

- A. In the event that the Contractor sub-contracts a portion of the Work, the sub-contractor to the Contractor must meet all requirements of the Contractor specified herein and within related contract documents. All sub-contractors must be approved, in writing, by the Owner and Owner's Representative prior to the Contractor and sub-contractor entering into an agreement to perform work on-site.

1.11 NOTIFICATION TO CONTRACTOR

- A. Asbestos-Containing Materials
 - 1. The Work included within this Specification involves the disturbance of asbestos-containing materials (ACMs). All ACMs known to be present at the work-site is presented in Section 1.02 of this Specification. The discovery of additional ACMs by the Contractor shall require immediate notification to the Owner's Representative, the employees of all other trades present on-site, and superintendent or foreman assigned to the project. All newly discovered ACMs will be bulk sampled by the Owner's Representative. No newly discovered ACMs are to be disturbed until instructed as such by the Owner's Representative.
 - 2. Removing or otherwise disturbing ACMs may release asbestos fibers into building's atmosphere creating a health risk to all building occupants. The Contractor shall inform all laborers, supervisors, foreman, superintendents, and other employees of the location of ACMs within the building and ensure care is taken while working around the ACMs to ensure the materials are not disturbed and be certain all employees on-site are informed of proper work procedures following an unplanned disturbance.
 - 3. The Contractor shall ensure that during his work any encounter or disturbance to ACMs will be performed in accordance with all applicable regulations and requirements set forth herein.

1.12 COORDINATION

- A. Coordinate the abatement/remediation of the materials listed within this Specification with other sub-contractors on-site in order to maintain efficient and orderly completion of the Work.
 - 1. Scheduling of operations shall be in a manner required to achieve the most satisfactory results where the completion of one aspect of the Work is essential to the commencement of work involving other components.

B. Notifications

1. It is the Work of the Contractor to inform all employees and contractors on-site the nature of the asbestos work, location of ACMs, applicable regulations, and any relevant requirements listed in this Specification. Notification prior to the start of work must be made to:
 - a. Employees performing environmental remediation/abatement,
 - b. Employees who will be in the work area during the performance of environmental remediation/abatement, and;
 - c. Employers of employees who work and/or will be working in areas adjacent to the environmental remediation/abatement while the work is in progress.
2. Contractor is responsible for submitting notification of emergency service agencies including fire, ambulance, police or other agency that may service the work site in case of an emergency. Methods of entering work area and emergency entry and exit locations must be made available to all emergency service agencies.
3. Notifications of Emergency: Any employee or visitor to the job site may notify emergency service agencies at any time without change to the Contract and/or Contract Sum.
4. 30-Day Notice: If the building is occupied during abatement activities, the Owner shall notify the occupants thirty (30) days prior to commencement of work.
5. Notify Federal and State Agencies: The Contractor shall notify the EPA Region III and the District of Columbia of the pending Asbestos Abatement Work in writing ten (10) working days prior to commencement of work and is responsible for all permits and fees associated with the project notification.
6. 3-Day Posting of Notification: The Contractor shall post notification signs of the abatement work, at all building entrances, three (3) days prior to commencement of work.

C. Emergency Directory

1. Develop a directory of all emergency contacts involved in the project. Include the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site. List business name, contact person, normal business and emergency telephone, mobile phone and fax numbers and addresses of:
 - a. Owner, Owner's Representative, and Project Administrator.
 - b. Contractor's General Superintendent, supervisory personnel and Contractor's home office.
 - c. Environmental Remediation Sub-Contractor's Superintendent, supervisory personnel and Contractor's home office.
 - d. Emergency services including but not limited to fire, ambulance, doctor, hospital, police, power and gas companies, telephone company.
 - e. Local, state, and federal agencies with jurisdiction over the project.

2. Post copies of the Emergency Directory adjacent to the entrance to clean room of Decontamination Unit.
- D. Alternate Procedures: Contractor shall comply with procedures specified in all applicable regulations and this Specification. Worker protective measures, engineering controls, and work practices all must be in compliance with this Specification and applicable regulations.
1. Variance: If procedures within this Specification cannot be implemented due to site-specific conditions or if the Contractor is aware of a more efficient approach, the Contractor may complete and submit a Request for Variance to the Owner, either prior to bidding or during the course of the project. The Request for Variance must include:
 - a. Details of the problem(s) encountered – or potential time/cost savings – and recommended alternatives.
 - b. The Owner will review such variance submittal(s) for compliance with Federal, State, and Local/Municipal regulations and submit recommendations for acceptance or rejection of the request for variance.
 - c. Alternative methods described in all Request for Variance proposals must, at a minimum, comply with:
 - i. Those recommended by manufacturer of approved materials.
 - ii. Those required by pertinent regulations of authority-having-jurisdiction.
 2. Methods described in the Contractor's Request for Variance may not be implemented without written approval by the Owner and/or the Owner's Representative

1.13 ENVIRONMENTAL ABATEMENT SUB-CONTRACTOR QUALIFICATIONS

- A. Contractor shall be licensed in the District of Columbia as an Asbestos Removal Contractor.
- B. Project Supervisor: The Contractor shall employ a Project Supervisor who has experience in managing asbestos abatement projects and implementing engineering controls as well as being familiar with allowable work practices, personal and atmospheric protective measures, disposal of asbestos procedures, etc. The Contractor's Project Supervisor will serve as the Competent Person as required by federal and District of Columbia regulations. The Project Supervisor will be responsible for performing the Work described herein in accordance with all applicable federal and District of Columbia regulations as well as this Specification. Additionally, the Project Supervisor shall meet the following minimum criteria:
 1. Training: The Project Supervisor must have a valid, non-expired training certification from a District of Columbia approved trainer for a course that meets the requirements of the EPA Model Accreditation Plan for asbestos abatement contractor/supervisor and licensed by the District of Columbia as a Worker Supervisor.

2. Experience: The Supervisor must:
 - a. Have a minimum of five (5) years experience in the on-site management of asbestos abatement projects, and
 - b. Have served as Project Supervisor on a minimum of five (5) asbestos abatement projects of similar size and scope of work.
 3. Responsibilities
 - a. Inspect asbestos removal work for conformance with all applicable regulations and current industry standards.
 - b. Perform or oversee OSHA monitoring and ensure proper personal protective equipment (PPE) is being utilized by all abatement personnel.
 - c. Ensure work is performed as described within this Specification at all times.
 - d. Continuously evaluate engineering controls established to prevent hazardous exposure to personnel and to the environment at all times.
 4. The Supervisor must meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926.
 5. The Supervisor must be an employee of the Contractor
- C. Foreman: If the Contractor will staff more than 10 asbestos abatement workers, the Contractor shall provide a Foreman to directly supervise and manage no more than 10 environmental remediation workers at any time. Each Foreman will act as the Competent Person as required by OSHA 29 CFR 1926 for the workers the Foreman is responsible for. The Foreman shall be responsible for oversight of the workers and report directly to the Project Supervisor. If there are 10 or fewer workers on the environmental remediation project the Supervisor may fill the Foreman's position. The Foreman must meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926. The Foreman must be an employee of the Contractor.

1.14 RECORD KEEPING

- A. Daily Log: The Contractor shall maintain a Daily Log posted in an area accessible to the Owner, the Owner's Representative, and the General Contractor (GC). The Daily Log must consist of the following items:
1. Meetings: reason, attendants, summary of discussion;
 2. Special or unusual events, i.e. barrier breaching, equipment failures, loss of electrical power;
 3. Accidents: injured individual, nature of injury, treatment, etc.;
 4. Documentation of Contractor's completion of the following:

- a. Inspection of work area preparation prior to start of removal and daily thereafter;
 - b. Removal of any sheet plastic barriers;
 - c. Removal of waste materials from work area;
 - d. Decontamination of equipment (list items);
 - e. Final inspection/final air test analysis;
 - f. List of subcontractors at the site;
 - g. Count of personnel at the site;
 - h. High and low temperatures, general weather for outdoor work;
 - j. Stoppages, delays, shortages, losses;
 - k. Emergency procedures;
 - l. Orders and requests of governing authorities;
- B. Entry/Exit Log: The Contractor shall maintain a daily log, placed adjacent to the entrance to each work area, documenting the dates and time of, but not limited to, the following items:
1. Visitors, permitted and unauthorized, with the following information:
 - a. Name
 - b. Organization
 - c. Entry time
 - d. Exit Time
 - e. Respiratory protection
 2. Personnel, by name, entering and leaving the work area with the following information:
 - a. Printed Name
 - b. Identification Number
 - c. Entry Time
 - d. Exit Time
 - e. Respiratory Protection
- C. The following information shall be posted on-site in a location accessible to workers, Owner's Representative, and Owner:
1. Air Monitoring Results
 2. Documentation of inspections by OSHA, EPA or local authority.
 3. Respiratory Protection Program.
 4. Telephone numbers and locations of emergency services including, but not limited to, fire, ambulance, doctor, hospital, police, power and gas companies, telephone company.
 5. Other records:
 - a. Waste Manifests and shipping records
 - b. Landfill receipts.
 - c. Accident reports.

D. Special Reports:

1. General: All special reports are to be submitted directly to the Owner's Representative unless otherwise instructed by the Owner. Special reports shall be submitted within 24 hours of events requiring a special report. The Owner and any other parties involved or affected by the occurrence shall receive copies of each special report.
2. Reporting Unusual Events: If an unplanned event of significant nature occurs during the project (examples: failure of pressure differential system, rupture of temporary enclosures, injury to personnel, etc), prepare and submit report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information.

1.15 WORKER PROTECTION

A. Worker Training

1. AHERA Accreditation: All workers/supervisors are to be accredited as Asbestos Workers/Supervisors as required by the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).
2. OSHA Training: All workers/supervisors performing asbestos work shall be trained in accordance with 29 CFR 1926.1101 for Class I work. Provide training for all workers/supervisors who will perform any asbestos related activity (including non-friable asbestos activities). Training method and length shall be in accordance with the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

B. Medical Surveillance

1. Before exposure to airborne asbestos fibers or use of negative pressure respirators, provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101 and 29 CFR 1910.134.
2. Medical examination shall be performed initially and annually thereafter.

- C. Medical Records: Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 30 years after termination of employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health Administration (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

- D. Environment, Safety and Health Compliance: In addition to detailed requirements of this Specification, comply with those applicable laws, ordinances, criteria, rules, and regulations of Federal, State, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.1101, 40 CFR 61-SUBPART A and 40 CFR 61-SUBPART M. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this Specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement shall apply.
- E. Respiratory Protection Program
1. Instruct and train each worker in proper respirator use and require that each worker always wear a respirator, properly fitted on the face, in the Work Area.
 2. Furnish each employee required to wear a negative pressure or powered air purifying respirator with a respirator fit test at the time of initial fitting and at least every 6 months thereafter as required by 29 CFR 1926.1101.
 3. Establish and implement a respirator program as required by ANSI Z88.2, 29 CFR 1926.1101, and 29 CFR 1926.103.
 4. The Contractor shall provide the appropriate type of respirators for each task as stipulated by 29 CFR 1926.1101, 29 CFR 1926.103, and 29 CFR 1910.134 or provide and initial exposure assessment as outlined below.
 5. Initial Exposure Assessment: Submit level of respiratory protection intended for each operation required by the project. Base this selection on an "Initial Exposure Assessment" as required by OSHA 29 CFR 1926.1101. Submit information to support this "Initial Exposure Assessment."
 - a. Submit data from exposure monitoring for the PEL and EL from prior asbestos jobs within 12 months;
 - b. Submit monitoring and analysis that were performed in compliance with the OSHA asbestos standard in effect;
 - c. Submit data that was obtained under workplace conditions "closely resembling" those that will exist during the work;
 - d. Submit data from past asbestos jobs where the type of asbestos abatement and other work, material, control methods, work practices, and environmental conditions closely resemble those that will exist during the work;
 - e. Submit exposure data from prior asbestos jobs where the work that was conducted by employees whose training and experience are no more extensive than that of employees performing the current job;
 - f. Based on the exposure data from the previous asbestos jobs, select respiratory protection for the Work that will, to a high degree of certainty, prevent worker

exposures (inside the respirator) that exceed the Permissible Exposure Limits (PEL) set forth in this Section of the specifications.

6. Require that respiratory protection be used at all times that there is any possibility of disturbance of ACM whether intentional or accidental.
 7. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy.
 8. Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be Powered air-purifying respirators with high efficiency filters.
 9. Do not allow the use of single-use, disposable, quarter-face or half-face respirators for any purpose.
- F. Hazardous Communication Program: Establish and implement a Hazardous Communication Program as required by 29 CFR 1926.59.

1.16 PROJECT MONITOR

- A. The Owner shall contract an Industrial Hygiene Consultant (IHC) to provide on-site project monitoring and testing. The IHC shall not have any direct or indirect association with the GC or the Contractor. The IHC shall employ and provide the services of an on-site Project Monitor (PM).
- B. Project Monitor Qualifications
1. The PM shall be trained through the National Institute of Occupational Safety and Health (NIOSH) 582 (or equivalency) course.
 2. The IHC shall maintain a laboratory deemed proficient through the NIOSH Proficiency Testing Program (PAT) for Phase Contrast Microscopy (PCM) for analysis of asbestos air samples.
- C. Project Monitor Responsibilities
1. The PM shall be responsible for daily air monitoring, of the building's atmosphere outside the work area for airborne particulates.
 2. The PM shall be responsible for monitoring the Contractor's work practices and evaluating compliance with the Project Specifications and all applicable federal and District of Columbia regulations.

3. The PM shall perform visual inspections of the work area(s) throughout each shift, including prior to the start of work, to ensure all containment barriers are sealed, negative pressure is adequate, and proper engineering controls are in place.
4. It is the work of the PM to perform final clearance visual inspections to ascertain that all visible asbestos has been removed and that no visible dust and/or debris remain in the work areas.

1.17 SAMPLING

A. Baselines

1. Air Samples: Prior to the initiation of asbestos abatement work, the PM shall collect Transmission Electron Microscopy (TEM) air samples throughout the building to establish baseline levels of fiber concentrations comparable with the analytical results of the final clearance air samples.

B. Sampling During Work

1. Air Sampling Outside Work Area: The PM shall collect Phase Contrast Microscopy (PCM) air samples from outside the work area during each shift. A minimum of two (2) air samples from outside the work area shall be collected during each shift.
 - a. Asbestos: Maintain fiber concentrations at lowest possible levels, not to exceed 0.010 fibers/cubic centimeter (f/cc). If concentrations rise above or equal to 0.010 f/cc, stop abatement work and re-evaluate engineering controls. The PM shall determine source of the high reading and suggest appropriate measures to reduce airborne fiber concentrations.
2. Air Sampling Inside Work Area: The PM shall monitor airborne fiber concentrations within the work area. The purpose of this sampling is to continuously evaluate engineering controls established within the work area. A minimum of one (1) Phase Contrast Microscopy (PCM) air sample inside work area must be collected every four (4) hours of each shift while the removal of asbestos is in progress.
 - a. Asbestos: Maintain fiber concentrations at lowest possible levels, not to exceed 0.100 f/cc. If concentrations rise above this figure revise work procedures to lower fiber levels.

C. Final Clearance

1. It is the work of the PM to collect final clearance air samples following the successful completion of a final visual inspection which verifies all specified ACMs have been removed from the work area and no dust or debris remain.

2. **Aggressive Air Sampling:** Upon completion of abatement work and successful final clearance visual inspection, the PM shall perform final clearance aggressive air sampling for asbestos in accordance with District of Columbia regulations. Final clearance shall be by TEM analysis.
 - a. **TEM Analysis:** TEM air samples will be collected from within each work area. The average of the fiber concentrations in the samples collected from within the work area shall not exceed 70 structure per square millimeter (70 s/mm²) as required by the District of Columbia. Air samples shall have a minimum volume of 1,200 liters per sample.
 - b. The Contractor shall be responsible for re-cleaning of the Work Area, following the analysis of final clearance air samples resulting in unacceptable concentrations of asbestos at no additional cost to the Owner.
 3. The Contractor shall be responsible for any additional cost due to the Owner for the re-collection of final clearance air samples due to unacceptable initial results including sample analysis and sample collection fees.
- D. **OSHA Monitoring:** OSHA Monitoring is work of the Contractor and is not covered in this section. However, it must be conducted daily as required and in accordance with 29 CFR 1926.1101.
- E. **Stop Work:** The PM may issue a stop work order only when the integrity of the enclosure is breached, results of sampling performed outside of the work area exceed baseline levels (or >0.010 f/cc), or results of inside work area sampling reveals inadequate engineering controls. The Contractor shall correct the fault in work area enclosure and/or work procedures at no cost to the Owner.

1.18 SUBMITTALS

Five (5) days prior to the start of work, **submit 2 copies** of the following to the Owner's Representative for review. Do not start work until these submittals are approved by the Owner's Representative indicating that the submittal is returned for unrestricted use.

- A. Environmental Abatement Contractor - General
1. District of Columbia Asbestos Abatement Contractor license;
 2. Contingency Plans;
 3. Emergency Directory;

4. 10 Working Days Notification: Copy of notification sent to U.S EPA and District of Columbia, which shall be submitted at least ten (10) working days before asbestos abatement activities begin;
5. 3-day Asbestos Project Notice: Notices of asbestos abatement work must be posted at least three (3) days before work commences. Notices must be posted immediately outside all entrances and exits from the work site of asbestos abatement;
6. Resumes for Supervisor and Foremen;
7. Accreditation: Submit evidence in the form of training course certificate and District of Columbia Worker or Worker Supervisor license for the Supervisor, Foreman and workers as being trained in asbestos health and safety in accordance with the District of Columbia regulations and EPA AHERA protocols;
8. Medical surveillance for Supervisor, Foreman, and workers;
9. Signed Worker's Certificate of Acknowledgement (found at the end of this Section) for asbestos for each worker;
10. Testing Laboratory information for laboratory performing OSHA monitoring and/or sample analysis;
11. Hazard Communication Program as required by 29 CFR 1910.1200 (e);
12. Chemical Information List:
 - a. Submit written chemical information list for hazardous materials that are intended to be used at the Site;
 - b. Prepare chemical information list using an inventory of hazardous materials and their respective material safety data sheets. Arrange list in alphabetical order according to common name. Include chemical name, and identify locations where the hazardous materials are intended to be used;
 - c. Submit complete chemical information list of hazardous materials and associated material safety data sheets at least two weeks prior to commencement of Project (not just before a specific activity using hazardous materials commences). This information is required in advance for adequate planning purposes.
13. Material Safety Data Sheets:
 - a. Submit Material Safety Data Sheets (MSDS) for all products that contain hazardous constituents and are intended to be used in the Work or stored on site.
 - i. The Contractor must comply with manufacturer's recommendations for handling, storage, use, and disposal of all materials including hazardous constituents
 - b. Submit material safety data sheets five (5) days prior to the Pre-Construction meeting as specified above. No product shall be used for which a MSDS has not been previously submitted.

- c. If a change in material(s) used is required during the Work, submit appropriate MSDS for the new materials and amend all applicable documentation (hazard communication program, respiratory protection program, etc) as required. Submission of MSDS and amended documents must be completed ten (10) days prior to the delivery of the new material(s) to the site.
- B. Environmental Abatement Contractor - Licenses and Qualifications: The Owner shall make the final determination regarding the approval of the Contractor's qualifications in reference to this Work. The Owner shall require at a minimum the following qualifications to be met in order to remove ACMs from the facility:
1. Contractor shall submit all training accreditations and applicable licenses for employees who will be used to perform the specified work.
 2. Contractor shall submit a statement, notarized and signed (by an Owner, Partner, Officer, or Principle of the company), which verifies the accuracy of the following information which shall be submitted to the Owner:
 - a. Documentation of successful completion of at least three (3) abatement projects of similar size, scope, and dollar value.
 - i. Reference names, telephone numbers, and addresses of Owner representatives for the above referenced three (3) abatement projects.
 - ii. Include air monitoring data from an independent monitoring firm demonstrating compliance with OSHA airborne hazardous particulate concentrations during the work.
 - b. Names of Contractor representatives who shall have complete authority to speak for and make commitments for the Contractor (including size and dollar value) of individual projects previously supervised.
 3. OSHA Compliance: Submit evidence of full compliance with medical surveillance and respiratory protection provisions of existing regulations. Include at a minimum:
 - a. Written respiratory protection,
 - b. Medical surveillance programs, and
 - c. Proof of respirator fit testing.
 4. Disclosure Statement: Contractor shall submit the following statement notarized and signed (by a principle of the company) verifying accuracy and truth of the following information;
 - a. Description of any asbestos abatement or other environmental remediation projects which have been prematurely terminated, including the circumstances surrounding such termination.
 - b. List of any contractual penalties which the Contractor has incurred for breach or non-compliance with Contract Specifications on previous projects, such as overruns of completion time leading to liquidated damages.

- c. List of any citations levied against the Contractor by any governmental entity for violations related to asbestos abatement, or other environmental remediation work including the name and location of the project, date(s) of violation(s), and allegation resolution.
- d. Description of all legal proceeding, lawsuits or claims which have been filed or levied against the Contractor or any of his past or present employees for asbestos abatement, or other environmental remediation related activities.
- e. Acknowledgement of any of the above circumstances will not necessarily result in automatic disqualification.
 - i. Failure to disclose any of this information shall be cause for automatic disqualification.
 - ii. The Owner shall be the sole determinant of the Contractor's ability to remove hazardous materials competently and correctly.
- f. Affirmation that the no principle(s) has/have been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency.

PART 2 PRODUCTS

2.01 HAZARDOUS MATERIALS

The Contractor is required to have onsite, at all times, MSDS on products being utilized during the execution of the Work. The Owner may, at his discretion, refuse to allow any products which he feels may for any reason jeopardize the safety of building occupants and/or workers within the building. In this event, the Contractor must submit a substitute product that is less hazardous. If an appropriate substitute product is not available, the Contractor may submit an alternative plan for protecting the building occupants/workers from exposure to the hazardous material. The Owner has the final authorization for all products being used by the Contractor.

2.02 MATERIALS AND EQUIPMENT

The Contractor's use of equipment, protective clothing, special facilities and/or devices shall be in accordance with applicable regulations and manufacturer's instructions.

2.03 RESPIRATORS

- A. Respirator Bodies: Provide half face negative pressure air purifying respirators or full face powered air purifying respirators (PAPR's). Equip full face respirators with a nose cup or

other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit (0 degrees Celsius).

- B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with 42 CFR Part 84 and ANSI Z228.2. Also, additional cartridge sections may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH Certification.
- C. Non-permitted Respirators: Do not use single use, disposable or quarter face respirators.
- D. Supplied Air Respirator Systems: If deemed to be necessary through compliance with 29 CFR 1926.103 and/or 29 CFR 1910.146, Supplied Air Respirator Systems shall comply with the following:
1. Provide air used for breathing in supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D.
 2. Facepiece and Hose: Provide full facepiece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure facepiece.
 3. Auxiliary backup system: In atmospheres which contain sufficient oxygen (greater than or equal to 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator equipped with an emergency back up HEPA filter.
 4. Escape air supply: In atmospheres which are oxygen deficient (less than 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.
 5. Backup air supply: Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptible source of air automatically available to each connected facepiece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average-sized adult male engaged in moderately strenuous activity.
 6. Warning device: Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the Work Area and at the compressor. Connect alarm to warn of:

- a. Compressor shut down or other fault requiring use of backup air supply
 - b. Carbon Monoxide (CO) levels in excess of 5 PPM/V
7. Compressor Motor: Provide a compressor driven by an electric motor. Do not use a gas or diesel engine to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.
8. Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from engines, motors, auxiliary generator or buildings.

2.04 PROTECTIVE CLOTHING

- A. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. 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 protectives, for all workers. Provide boots at no cost to workers. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with ACM. Dispose of boots as asbestos-contaminated waste at the end of the work.
- C. Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from Work Area at the end of the work.
- D. Goggles: Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from Work Area at the end of the work.
- E. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area and dispose of as asbestos-contaminated waste at the end of the work.

2.05 SHOWER FACILITIES

- A. When performing Class I Work, provide pre-fabricated or site-built shower facilities. Supply hot and cold water to shower head which can be controlled from inside shower.

- B. Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
 - 1. Primary Filter - Passes particles 20 microns and smaller
 - 2. Secondary Filter - Passes particles 5 microns and smaller
- C. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.06 EQUIPMENT FOR VISITORS

Disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the PM, Owner's Representative, Owner, or other authorized visitors for entry into and inspection of the asbestos work area. The Contractor will not be responsible for providing other types of respiratory protection (i.e., negative pressure or powered air purifying respirators) to visitors.

2.07 ELECTRICAL SERVICE

- A. General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.
- B. Ground Fault Protection: Equip all circuits for any purpose entering the Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters equipped with test button and reset switch for circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.
- C. Electrical Power Cords: Provide grounded extension cords. Use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- D. Lamps and Light Fixtures: Provide general service incandescent lamps, sealed quartz halogen construction lights, or fluorescent lamps of wattage required for adequate illumination as required by the work. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture. Provide lighting with a secure base to insure that they will not be knocked over. Keep lights away from combustible materials.

2.08 SCAFFOLDING

- A. Provide scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this Specification. At this time, scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of scaffolding shall comply with applicable OSHA provisions.
- B. Equip rungs of metal ladders, etc. with an abrasive non-slip surface.
- C. Provide a nonskid surface on scaffold surfaces subject to foot traffic.

2.09 FIRST AID

- A. Comply with governing regulations and recognized recommendations within the construction industry.
- B. At a minimum, the onsite first aid kits will be sufficient for the numbers of workers onsite and shall include the following:
 - 1. Various sizes and types of bandages
 - 2. Sterile sponges
 - 3. Constricting bandage
 - 4. Eye patches
 - 5. Antiseptic wipes
 - 6. First aid cream
 - 7. Triangular bandage
 - 8. Disposable gloves
 - 9. Eye irrigating solution
 - 10. Aspirin or non-aspirin pain reliever
 - 11. Scissors
 - 12. Tweezers
 - 13. Rescue blanket
 - 14. First aid guide
 - 15. First aid tape
 - 16. Non-stick pads
 - 17. Cold/hot packs
 - 18. Splints
 - 19. Stretch gauze

2.10 FIRE EXTINGUISHERS

Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

2.11 HEPA FILTERED FAN UNITS

- A. General: Supply the required number of HEPA filtered fan units to the site in accordance with this Specification. Use units that meet the following requirements.
- B. Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches [0.76 meters] to fit through standard-size doorways. Provide units whose cabinets are:
 - 1. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance;
 - 2. Arranged to provide access to and replacement of all air filters from intake end;
 - 3. Mounted on casters or wheels.
- C. Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions.
- D. HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.
 - 1. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.
 - 2. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent.
 - 3. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
 - 4. Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.
- E. Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. Provide units with the following pre-filters:

1. First-stage pre-filter: low-efficiency type (e.g., for particles 100 μm and larger).
 2. Second-stage (or intermediate) filter: medium efficiency (eg., effective for particles down to 5 μm).
- F. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.
- G. Instrumentation: Provide units equipped with:
1. Manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed;
 2. A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) (Liters / Second (LPS)) air delivery at that point;
 3. Elapsed time meter to show the total accumulated hours of operation.
- H. Safety and Warning Devices: Provide units with the following safety and warning devices:
1. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter;
 2. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge;
 3. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red);
 4. Audible alarm if unit shuts down due to operation of safety systems.
- I. Electrical Components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

2.12 CLEANING AND DECONTAMINATION

- A. Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6 mil (0.15 mm) thick, clear, frosted, or black as indicated.

- B. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled with three labels with text as follows:

1. First Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE FIBERS IS
HAZARDOUS TO YOUR HEALTH

2. Second Label: Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances

RQ-ASBESTOS WASTE
CLASS 9
NA2212-PG III

3. Third Label: Provide the name of the waste generator (Owner's name), the location from which the waste was generated and the names and addresses of the contractor and transporter. This label must be durable, able to repel dirt and moisture (e.g., permanent marker). Label must be placed directly on disposal bag(s) in a legible format.

2.13 WETTING MATERIALS

- A. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons (19 liters) of water.
- B. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of ACM. Use a material which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether in five gallons (19 liters) of water.

2.14 GLOVEBAGS

- A. Glove bag abatement will be allowed only if performed in a critical barrier containment and with the written permission of the Owner's Representative, in accordance with the District of Columbia regulations and OSHA Regulation 29 CFR 1926.1101.

2.15 ENCAPSULANTS

All encapsulants shall conform to current USEPA requirements and shall contain no toxic or hazardous substances as defined in 29 CFR 1926.59.

PART 3 EXECUTION

3.01 VENTILATION

- A. Provide adequate ventilation of the Work as required to ensure that Owner, workers and visitors are not potentially exposed to asbestos containing materials.
- B. Provide and maintain ventilation in functional, efficient working order for the duration of the Project.
- C. Prevent fumes, vapors, and dust related to the Work from infiltrating other parts of the building or adjacent buildings which may be occupied.
- D. Upon completion of work, with wet pollutant emitters (e.g., paints, mastic, glues, and/or mastic/glue removers) purge all work areas of airborne contaminants by supplying adequate outside air and exhausting contaminants to the building exterior.

3.02 PROTECTION

- A. Permits and Notifications: Obtain necessary permits in conjunction with asbestos removal, encapsulation, hauling, and disposition, and furnish notification of such actions required by Federal, State, regional, and local authorities prior to the start of work. Notify the US. EPA and District of Columbia ten (10) working days prior to commencement of work.
- B. Equipment
 - 1. Respirators: At a minimum all Class I work will be performed utilizing PAPR's. Provide personnel engaged in pre-cleaning, cleanup, handling, encapsulation and removal of asbestos materials with respiratory protection as indicated in 29 CFR 1926.1101 and 29 CFR 1926.103.

2. Protective Clothing: Provide personnel exposed to asbestos with disposable "non-breathable," whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposable gloves to protect hands. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape.
 3. Eye Protection: Provide goggles to personnel engaged in asbestos abatement operations when the use of a full face respirator is not required.
- C. Storage: Waste generated during abatement shall be stored in a construction trailer or hauling container that shall comply with 40 CFR 61-SUBPART M, State, regional, and local standards. Temporary on-site storage shall be provided by the Contractor.
- D. Electrical Service:
1. General: If necessary, provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.
 2. Lockout: Lockout all existing power to or through the work area. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area is to be provided from outside of the work area.
- E. Heating, Ventilating and Air Conditioning (HVAC) Systems: Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the asbestos work areas. Seal intake and exhaust vents in the asbestos work area with 6 mil (0.15 mm) in thickness plastic sheet and tape. Seal seams in HVAC components that pass through the asbestos work area.
- F. Securing Work Area: Secure work area from access by public, occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area.
- G. Access: Limit access to regulated areas to authorized persons as defined by OSHA, and to the Owner, Designer, Project Administrator or a representative authorized by one of these entities.
- H. Demarcation of Work Area: Provide bilingual warning signs printed in English and Spanish at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide vertical format conforming to 29 CFR 1926.200, and 29 CFR 1926.1101 (minimum 20" by 14") displaying the following:

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

- I. Warning Labels: Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Provide labels conforming to 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY
CAUSE SERIOUS BODILY HARM

3.03 WORK AREA ENCLOSURE

- A. Pre-cleaning: Prior to establishment of the enclosure, wet wipe and HEPA vacuum all surfaces potentially contaminated with asbestos. Clean movable objects and remove them from the work area. Mobile objects will be assumed to be asbestos contaminated and are to be either cleaned with amended water and a HEPA vacuum and then removed from the area or wrapped and then disposed of as asbestos-contaminated waste.
- B. Completely isolate the Work Area from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in this Section. Perform all such required cleaning or decontamination at no additional cost to Owner.
- C. Each enclosure consists of a work area and a decontamination area. The Work Area where the asbestos removal operations occur is to be separated from the decontamination area by physical curtains, doors, and/or airflow patterns that force any airborne contamination back into the Work Area.
- D. Critical Barriers
 1. Completely separate the Work Area from other portions of the building, and the outside by closing all openings with sheet plastic barriers at least 6 mil (0.15 mm) in thickness, or by sealing cracks leading out of Work Area with duct tape.

2. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the Work Area with duct tape alone or with polyethylene sheeting at least 6 mil (0.15 mm) in thickness, taped securely in place with duct tape. Maintain seal until all work including Decontamination is completed. Take care in sealing of lighting fixtures to avoid melting or burning of sheeting.
3. Provide Sheet Plastic barriers at least 6 mil (0.15 mm) in thickness as required to seal openings completely from the Work Area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.
4. Cleaning and Sealing Surfaces: After cleaning with water and a HEPA vacuum, surfaces of stationary objects should be covered with two layers of plastic sheeting. The sheeting should be secured with duct tape or an equivalent method to provide a tight seal around the object.

E. Primary Barrier

1. Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.
2. Sheet Plastic: Protect surfaces in the Work Area with two (2) layers of plastic sheeting on floor and walls.
3. Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide 3/4 inch exterior grade plywood treads securely held in place over plastic. Do not cover rungs or rails with any type of protective materials.
4. Repair of Damaged Sheet Plastic: Remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dry.

F. Stop Work: If the Critical or Primary barrier falls or is breached in any manner stop asbestos removal work immediately. Do not restart work until authorized by the PM.

G. Extension of Work Area: If the Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the Work Area, enclose it as required by this Section and decontaminate.

- H. Secondary Barrier: Place a secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work is specified in the appropriate work sections.
- I. Negative Pressure Enclosure
1. Isolate the Work Area from all adjacent areas or systems of the building with a Pressure Differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the Work Area.
 2. HEPA Ventilation: Provide a local exhaust system in accordance with ANSI Z9.2 and 29 CFR 1926.1101 that will provide a negative pressure within the Work Area. Local exhaust equipment shall be operated 24 hours per day and shall be leak proof to the filter and equipped with HEPA filters. In no instance shall the building ventilation system be used as the local exhaust system for the Work Area.
 3. The local exhaust system shall terminate out of doors and remote from any public access or ventilation system intakes unless authorized in writing by the Owner's Representative.
 4. Arrange Work Area and decontamination units so that the majority of make up air comes through the Decontamination Units. Use only the Personnel or Equipment Decontamination Unit at any time and seal the other so that make up air passes through unit in use. Arrange air circulation through the Personnel Decontamination Unit so that it produces a movement of air from the Clean Room through the Shower Room into the Equipment Room. At each opening, the air flow velocity must be sufficient to provide visible indications of air movement into the work area.
 5. Relative Pressure in Work Area: Continuously maintain the Work Area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of 0.02 inches of water.
 6. Use a differential pressure meter or manometer to demonstrate the required pressure differential at every barrier separating the Work Area from the balance of the building, equipment, ductwork or outside.
 7. Air Flow Tests: Air flow patterns will be checked before removal operations begin, at least once per operating shift and any time there is a question regarding the integrity of the enclosure. The primary test for air flow is to trace air currents with smoke tubes or other visual methods. Flow checks are made at each opening and at each doorway to demonstrate that air is being drawn into the enclosure and at each worker's position to show that air is being drawn away from the workers location and toward the HEPA filtration unit.

8. Isolation of stair towers, and return air intakes: Erect seals with an air space at doors to stair towers. Pressurize this space with clean or outside air or air that has been HEPA-filtered air so that it is at a pressure greater than either the Work Area or stair tower.

J. Personal Decontamination Unit

1. Provide decontamination units with a shower that comply with 29 CFR 1926.51(f)(4)(ii) through (v) for each work area. Decontamination units shall be physically attached to the Work Area. Note: Shower facility is not required when performing Class II Work.
2. Build a Personnel Decontamination Unit and Equipment Decontamination Unit onto and integral with each work area.
3. Each individual shall perform the following decontamination procedures upon exiting work area:
 - a. HEPA vacuum and remove asbestos contaminated disposable protective clothing while still wearing respirators in the equipment room and seal in two impermeable bags for disposal. Label the outer bag as asbestos contaminated waste.
 - b. Proceed to shower, when required, located between the equipment and clean rooms. Class I Work requires that all employees shower before changing into street clothes.
 - c. Wash and remove respirator.
 - d. Proceed to clean room.
4. Collect used shower water and filter with approved water filtration equipment to remove asbestos contamination. Dispose of filters and residue as asbestos waste. Discharge clean water to the sanitary system.
5. Dispose of asbestos contaminated work clothing as asbestos contaminated waste.

3.04 SCAFFOLDING

- A. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.
- B. Clean, as necessary, debris from non-slip surfaces.
- C. At the completion of abatement work clean construction aids within the Work Area, wrap in one layer of 6 millimeters thick polyethylene sheet and seal before removal from the Work Area.

3.05 WORK PROCEDURE

- A. All Class I work, which includes the removal of friable asbestos-containing materials and associated asbestos-contaminated debris, is to be performed in a full containment:
1. Cover all windows, doors, ventilation units, ceiling, floor and wall surfaces with plastic sheeting sealed with tape and glue securely, as required. Use a minimum of two (2) layers of 6 mil (0.15 mm) in thickness plastic sheet on floors that are not identified as ACM.
 2. As specified, a pressure differential across any physical or critical barrier within containment must be equal or exceed a static pressure of 0.02 inches of water (0.02" w.g.).
 3. Attach a three(3)-station Personnel Decontamination Unit for worker decontamination to the Work Area.
- B. When removing non-friable asbestos-containing material (Class II Work), a full containment is not required; however, it requires a minimum of two (2) workers to remove asbestos containing materials in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. One individual shall remove the materials, while the second worker applies the wetting agent and HEPA vacuums or bags up any debris generated.
1. All Class II work is to be performed in a critical barrier containment with 6 mil (0.15 mm) in thickness plastic drop sheeting demarcated to restrict public access.
 2. As specified, a pressure differential across any physical or critical barrier within containment must be equal or exceed a static pressure of 0.02 inches of water (0.02" w.g.).
 3. When removing floor mastic using mechanical methods, a three (3)-station Personnel Decontamination Unit for worker decontamination, with operating shower, shall be attached to the Work Area.
 4. Cleaning of mobile objects/items contaminated with asbestos-containing materials shall consider a Class II work.
 5. Asbestos-contaminated carpet shall be removed as Class II work and disposed as ACM.
- C. Exploratory Demolition: (as Needed)
1. The Contractor shall conduct demolition of hard walls and ceilings in order to uncover identified and/or suspect ACM(s).

2. If any uncovered identified and/or suspect ACM is found to be damaged, debris generates from demolition shall be considered to be asbestos-contaminated and disposed as ACM.

D. Glove Bag Method: Refer to Section 2.14 GLOVEBAGS for requirements.

1. Glove bag abatement may be allowed on the project only if performed in a critical barrier containment with 6 mil (0.15 mm) in thickness plastic drop sheeting to remove certain sections of pipe insulation.
2. Glove bag abatement must be approved with the written permission of the Owner's Representative.

E. Wrap and Cut Method:

1. Wrap and cut abatement may be allowed on the project only if performed in a critical barrier containment with 6 mil (0.15 mm) in thickness plastic drop sheeting to remove certain sections of pipe insulation following glove bag method. Pipe shall be wrapped prior to removal with at least two (2) layers of 6-mil polyethylene sheeting properly sealed with glue and tape and labeled in accordance with federal, state and local regulations. And then cut through the sections where pipe insulation had been previously removed using glove bag method.
2. Wrap and cut abatement must be approved with the written permission of the Owner's Representative.

F. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Work Area.

G. Perform asbestos related work in accordance with 29 CFR 1926.1101, 40 CFR 61-SUBPART M, and as specified herein.

H. Personnel of other trades not engaged in the removal and demolition of asbestos containing material shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this Specification are complied with by the trade personnel.

I. Pre-clean all work areas of pre-existing contamination/debris to include asbestos containing material fragments that have been dislodged. Pre-abatement visual cleanliness will be determined by the PM.

J. Wet Removal techniques shall be used. Dry removal will not be permitted.

- K. Coordinate abatement in a manner to minimize the number of work areas that will require final clearance air sampling.
- L. High pressure washers are not permitted for the removal of ACM or during clean-up activities
- M. Wet asbestos-containing material (ACM) with a fine spray of amended water prior to and during removal, cutting, or other handling so as to reduce the emission of airborne fibers.
- N. For areas not requiring full containment: With a minimum of two (2) workers, remove asbestos containing material (ACM) in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. One individual shall remove the material while the second worker applies the wetting agent and HEPA vacuums or bags up any debris generated.
- O. Remove material and immediately place in 6 mil (0.15 mm) in thickness plastic disposal bags.
- P. Evacuate air from disposal bags with a HEPA filtered vacuum cleaner before sealing. Twist neck of bags, bend over, and seal with minimum three wraps of duct tape. Clean outside and move to Wash Down Station adjacent to Equipment Decontamination Unit.
- Q. Any asbestos waste material which will not fit inside pre-structured polyethylene bags shall be sealed in three (3) layers of 6 mil (0.15 mm) in thickness plastic sheeting, labeled, and inspected by the PM prior to removal from the Equipment Decontamination Unit.
- R. Housekeeping: Maintain surfaces of the Work Area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. DO NOT USE COMPRESSED AIR.
- S. Stop Work: If an asbestos fiber release or spill occurs outside of the Work Area, stop work immediately, correct the condition to the satisfaction of the PM and Owner's Representative, including clearance sampling, prior to resumption of work. In addition, the PM has Stop Work authority.

3.06 ALTERNATIVE REMOVAL METHODS

- A. All alternate methods shall be pre-approved by the Owner and the PM prior to execution. This includes alternate containment and shower decontamination methods. The Owner and/or Owner's Representative will authorize in writing any acceptance of alternate removal methods.

B. Mini-Enclosures

1. A mini enclosure is a small walk-in enclosure which accommodates no more than two persons. Provide a fabricated or job-made enclosure constructed of 6 mil (0.15 mm) in thickness plastic. Place the enclosure under negative pressure by means of a HEPA filtered vacuum or similar HEPA filtered ventilation unit.
2. Provide a remote Personnel Decontamination Unit for worker decontamination:
 - a. Work Room: Construct Work Room in the same manner as a Primary Barrier fabricated from 6 millimeter thick sheet plastic. Arrange so that Primary Barrier provides both a Critical and Primary Barrier. Line walls and floor of Work Room with a continuous Secondary Barrier.
 - b. Change Room: Provide a Change Room attached to each Work Room. Fabricate Change Room from 6 millimeter thick sheet plastic in the same manner as a Primary Barrier. Locate so that access to Work Area is through Change Room.
 - c. Step Off Area: Cover floor in front of entry to Change Room with one layer of 6 millimeter thick sheet plastic. Securely anchor sheet plastic to prevent slipping.
 - d. Flapped Door Construction: Provide flapped door as entry to Change Room and entry from Change Room to Work Room. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Each flap is to be 3 inches longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side using duct tape on inside and outside of door.
 - e. Signage: At entry to Change Room post caution sign as required by 29 CFR 1926.
3. Testing: The mini-enclosure shall be inspected for leaks and smoke tested to detect breaches, and breaches sealed.

3.07 CLEAN-UP

- A. Wet wipe, using a water and surfactant solution, all surfaces within the work area including plastic barriers with paper towels or disposable rags. The surfactant shall be of a type that penetrates friable asbestos materials so that the material is thoroughly wetted.
- B. When the surfaces have dried, HEPA vacuum all surfaces in the room starting at the ceiling, then top of wall and working downward to the floor.
- C. HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.
- D. Repeat wet wiping and HEPA vacuuming until no visible residue remains.

- E. Remove used HEPA unit pre-filters and replace with clean filters. Use filters are to be disposed of as asbestos contaminated waste.

3.08 FINAL CLEARANCE

- A. Prior to removal of plastic barriers and after pre-clearance clean up of gross contamination, the PM shall conduct a visual inspection of all areas affected by the removal to ascertain that all specified ACM has been removed and no visible dust or debris remains within the Work Area.
- B. If visible ACM, dust or debris is identified by the PM, the Contractor shall re-clean the Work Area.
- C. Upon obtaining a satisfactory final visual inspection from the PM, the Contractor shall apply a lock-down encapsulant. The encapsulant shall be spray applied to ceiling, walls, floors, and other areas exposed in the removal area. The exposed area shall include but not be limited to plastic barriers, furnishings, and articles to be discarded as well as dirty change room, air locks for bag removal and decontamination chambers.
- D. When encapsulant is dry to the touch, the PM shall conduct final clearance sampling in accordance with Section 1.17C of this Specification.
- E. Within 24 hours of receiving final clearance sample results, the Contractor shall submit copies to the District of Columbia.

3.09 TEAR-DOWN

- A. After acceptable airborne concentration are attained but before the HEPA unit is turned off and the enclosure removed, remove all pre-filters on the building HVAC system and provide new pre-filters. Dispose of filters as asbestos contaminated materials.
- B. Reestablish HVAC mechanical and electrical systems in proper working order.
- C. Plastic sheeting, duct tape, etc. utilized in the construction of the Work Area containment/enclosure shall be disposed of as asbestos-contaminated waste.

3.10 DISPOSAL OF ASBESTOS

- A. Waste generated as a result of asbestos removal shall be disposed of at a state-approved asbestos landfill.

- B. Each asbestos disposal bag and wrapped material shall be affixed with a warning and DOT label.
- C. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each asbestos disposal bag and wrapped material.
- D. Prevent contamination of the transport vehicle. These precautions include lining the vehicle cargo area with plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete.
- E. Procedure for hauling and disposal shall comply with 40 CFR 61-SUBPART M, State, regional, and local standards.
- F. Workers unloading the asbestos disposal bags shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

13282 - Removal and Disposal of Asbestos-Containing Materials
Therapeutic Recreation Center
3030 G Street, SE, Washington, DC

ASBESTOS-CONTAINING MATERIALS
CERTIFICATION OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME _____ DATE _____
PROJECT ADDRESS _____
CONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification you are assuring the Owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type of respirator to be used on the above referred project. I have a copy of the written respiratory protection manual issued by the employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. This training must have been the equivalent in curriculum, training method and length to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included health history, pulmonary function tests, and may have included an evaluation of a chest X-ray.

By signing this document I acknowledge only that the Owner of the building I am about to work in has advised me of my rights to training and protection relative to my employer.

Signature _____ Social Security No/Employee ID No _____

Printed Name _____ Witness _____

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Therapeutic Recreation Center
3030 G Street, SE, Washington, DC

END OF SECTION

**SECTION 13283
 LEAD CONTROL PROCEDURES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. The BIDDING REQUIREMENTS, CONTRACTING REQUIRMENTS and CONDITIONS OF THE CONTRACT, and applicable parts of DIVISION 1 – GENERAL REQUIREMENTS, shall be included in and made a part of this Section.

1.02 WORK INCLUDED

- A. As part of the base bid, the Contractor shall be required to remove and dispose of all lead containing and lead coated materials as part of normal renovation activities. All work shall comply with 29 CFR 1926.62. The work outlined in this Specification involves renovation activities of these building materials and steps needed to limit occupational and environmental exposure to lead hazards.
- B. The following lead based painted and glazed surfaces were identified during the representative XRF testing performed by ECS on October 22 and 29, 2014:

LEAD BASED GLAZE SUMMARY

Reading	Level	Substrate	Color	Component	Location	Pb (mg/cm ²)
57	1st Floor	Ceramic	White	Sink	Stage Ante-room	1.00
58	1st Floor	Ceramic	White	Toilet	Stage Ante-room	1.00
50	1st Floor	Ceramic	White	Toilet	Entrance Hall Bathroom	1.00

Notes: mg/cm² - milligrams per square centimeter

Notes: All similar materials located within the building should be assumed to be lead containing;

- C. It is important to note that other surfaces are reported to contain lead in concentration less than 1.0 milligrams per square centimeter (< 1.0 mg/cm²). These surfaces may still contain concentration of lead in the paint, which when disturbed, may generate lead dust greater than the Permissible Exposure Limit (PEL) of 50 micrograms per cubic millimeter (µg/m³) as an 8-hour Time Weighted Average (TWA) established by U.S. Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1926.62 – Lead in Construction. Therefore, any disturbances to lead-based and lead-containing painted components shall be performed in accordance with OSHA regulation 29 CFR 1926.62 – Lead in Construction and this Specification.

1.03 RELATED WORK

- A. Section 13281 Hazardous and Universal Waste Management
- B. Section 13282 Removal and Disposal of Asbestos-Containing Materials

1.04 CODES AND REGULATIONS

- A. General Applicability of Codes and Regulations, Guidelines and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, guidelines 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.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, protection of workers, visitors to the site, and persons occupying areas adjacent to the site and packaging, salvaging, and delivering lead-containing materials. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Designers harmless for failure to comply with any applicable work, packaging, salvaging, delivering, safety, health or other regulation on the part of himself, his employees, or his subcontractors.
- C. Federal Requirements: which govern lead based paint work or packaging, salvaging, and delivering of hazardous waste materials include but are not limited to the following:
 - 1. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:
 - 29 CFR 1910.134 - Respiratory Protection;
 - 29 CFR 1926.103 - Respiratory Protection;
 - 29 CFR 1926.20 - General safety and health provisions;
 - 29 CFR 1926.21 - Safety training and education;
 - 29 CFR 1926.23 - First Aid;
 - 29 CFR 1926.24 - Fire Protection;
 - 29 CFR 1926.25 - Housekeeping;
 - 29 CFR 1926.28 - Personal protective equipment;
 - 29 CFR 1926.51(f) - Washing facilities;
 - 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists;
 - 29 CFR 1926.56 - Illumination;
 - 29 CFR 1926.57 - Ventilation;
 - 29 CFR 1926.59 - Hazard Communication;

- 29 CFR 1910.1200 - Hazard Communication;
- 29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists
- 29 CFR 1926.62 - Lead Construction Standard;
- 29 CFR 1926.200 - Accident Prevention Signs and Tags;
- 29 CFR 1926.353 - Ventilation: Welding, cutting or heating of metals of toxic significance;
- 29 CFR 1926.300, 301, 302 - Hand and power tools;
- 29 CFR 1926.451 - Scaffolding;
- 29 CFR 1926.500, 502, 503 - Fall Protection.
- 29 CFR 1926 Subpart E - Personal Protective and Life Saving Equipment

2. DOT: U. S. Department of Transportation, including but not limited to:

- 49 CFR 171 and 172 - Hazardous Substances

3. EPA: U. S. Environmental Protection Agency (EPA), including but not limited to:

- 40 CFR 260, 261, 262, 263 and 264 -Resource Conservation and Recovery Act (RCRA)
- RRP Rules - Lead Renovation, Repair and Painting (RRP) Program

- D. State Requirements: Abide by all State requirements which govern packaging, salvaging, and disposal of hazardous waste materials.
- E. Local Requirements: Abide by all local requirements which govern lead abatement work or packaging, salvaging, and disposal of hazardous waste materials.
- F. Building Codes: Comply with applicable provision of state and/or local building codes that govern any part of the work.

1.05 DEFINITIONS

- A. Accreditation: A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.
- B. Accredited Laboratory: A laboratory that has been evaluated and given approval to perform a specified measurement or task (such as the National Lead Laboratory Accreditation Program), usually for a specific property or analyze for a specified period of time.
- C. Accredited Training Provider: A training provider that meets the standards established by EPA to train risk assessors, inspectors, supervisors, and workers.

- D. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of thirty micrograms per cubic meter (30 µg/m³) of air averaged over an 8-hour period in an occupational/industrial environment. In a domicile or other environment where 24-hour exposure is possible, the action level is: exposure to an airborne time weighted average (24 hours) of concentration of lead of eight micrograms per cubic meter (8 µg/m³) of air.
- E. Area Monitoring: Sampling for lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations that may reach the breathing zone of personnel potentially exposed to lead. The PM shall be responsible for all area monitoring.
- F. Blank: A non-exposed sample of the medium used for testing, such as a wipe or filter, which is analyzed like other samples to determine whether (1) samples are contaminated with lead before samples are collected (e.g., at the factory, or at the testing site), (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the laboratory).
- G. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches around the nose and mouth of the face.
- H. Building Component: Any part of a building coated with paint.
- I. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.
- J. CFR - The Code of Federal Regulations: The basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.
- K. Detection Limit: The minimum of a component that a method can reliably measure.
- L. Eight-Hour Time Weighted Average (TWA): Airborne concentration of lead to which an employee is exposed, averaged over an 8-hour workday as indicated in 29 CFR 1926.62.
- M. Engineering Controls: Measures other than respiratory protection or administrative control that are implemented at the work site to contain, control, and/or otherwise reduce exposure to lead-contaminated dust and debris. The measures include process and product substitution, isolation, and ventilation.
- N. Exposure Monitoring: The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. lead) to which he/she is exposed.
- O. Federal Register: A document published daily by the Federal government that contains either proposed or final regulations.

- P. Hazardous Waste: As defined in RCRA the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:
1. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
 2. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
 3. As defined in the regulations, a solid waste is hazardous if it meets one of four conditions:
 - a. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24).
 - b. Has been listed as hazardous (40 CFR Section 261.31 through 261.33).
 - c. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste).
 - d. Is not excluded from regulation as a hazardous waste.
- Q. HEPA - High Efficiency Particulate Air: A filter capable of filtering out particles of 0.3 microns or greater from a body of air at 99.97% efficiency or greater.
- R. Landfill: A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.
- S. Lead Based Paint (LBP): Protective or decorative coating which contains lead in quantities greater than EPA and District of Columbia allowable concentrations.
- T. µg - Micrograms: The prefix "micro-" means "1/1,000,000 of" (one millionth of). A microgram is 1/1,000,000 of a gram and 1/1,000 of a milligram. A microgram is equal to about 35/1,000,000,000 (thirty-five billionths) of an ounce. 28,400,000 µg is equal to 1 ounce.
- U. Permissible Exposure Limit (PEL): Fifty micrograms per cubic meter (50 µg/m³) of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than 8 hours in a work day, the PEL shall be determined by the following formula: $PEL \text{ (micrograms/cubic meter of air)} = 400/\text{Number of hours worked per day}$.
- V. Personal Monitoring: Sampling of the lead dust concentrations within the breathing zone of an employee.

- W. Personal Samples (for sampling lead dust): Air samples collected from within the breathing zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 4 liters/minute of air.
- X. Solid Waste: As defined in RCRA the term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under the Clean Water Act, or special nuclear or byproduct material as defined by the Atomic Energy Act of 1954.
- Y. TCLP (Toxicity Characteristic Leaching Procedure): A test, called the extraction procedure that is designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management. It is a characteristic of hazardous waste.

1.06 WORKER PROTECTION

All workers are to be notified of the presence of components glazed with lead-containing products. Workers shall comply with 29 CFR 1926.62 for all personal protective equipment (PPE).

1.07 SUBMITTALS

- A. Before the start of work, submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittals are returned for unrestricted use.
 - 1. Certifications:
 - a. Submit the Contractor supervisor and workers training certifications.
 - 2. Testing Laboratory Qualifications:
 - a. Submit the name, address, and telephone number of the testing laboratory selected to perform the Toxicity Characteristic Leaching Procedure (TCLP) testing and the analysis for lead content in the air to evaluate personal exposure. The laboratory shall be accredited by the American Industrial Hygiene Association (AIHA). Provide AIHA documentation along with date of accreditation/reaccreditation.
 - 3. Hazardous Waste Management:
 - a. Submit a Hazardous Waste Management Plan within 14 days after award of contract to the Owner's Representative for approval. The Hazardous Waste Management

plan shall comply with applicable requirements of Federal, State, and local hazardous waste regulations and address:

- i. Procedures to segregate wastes into separate waste streams to minimize the quantity of hazardous waste generated.
- ii. Testing to identify hazardous wastes associated with the work.
- iii. Estimated quantities of wastes to be generated and disposed of.
- iv. Transporter / disposal facility documentation including, name, location, EPA identification number, hazardous waste permits and a 24 hour point of contact.
- v. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
- vi. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
- vii. Spill prevention, containment, and cleanup contingency measures to be implemented.
- viii. Procedures and schedule for waste containment, control and disposal wastes shall be cleaned up and containerized daily.

4. Manufacturer's Catalog Data:

- a. HEPA Vacuums.
- b. Respirators.
- c. HEPA filtered negative air machines.
- d. LBP Control Chemicals.
- e. All other tools or equipment that the contractor plans on using to remove Lead - Containing materials.
- f. Instructions: Paint control materials. Include applicable material safety data sheets.

5. Lead-Containing Material Control Plan: Ten (10) days before work starts, submit to the Owner's Representative for approval a detailed job-specific plan of work procedures to be used in the control and/or removal of lead-containing building materials. The Plan shall include the name of the Competent Person assigned to supervise the operation, a sketch showing the location, size, and details of lead control areas, type of containment materials used, location and details of decontamination rooms, change rooms, shower facilities, and HEPA filtered mechanical ventilation system.

- a. Include in the Plan: eating, drinking, smoking and restroom procedures, interface of trades, sequencing of lead related work, collected wastewater and lead paint and/or lead containing material debris disposal plan, air sampling plan, respirators, protective equipment, and a detailed description of the method of containment of the operation to ensure that airborne lead concentrations of 30 micrograms per cubic meter of air are not exceeded outside of the lead control area.
- b. Include air and wipe sampling, strategy, sampling methodology, frequency, duration of sampling, and qualifications and training of air monitoring personnel in the sampling portion on the Plan.

B. During the Work: TCLP test results, as required to characterize waste for segregation and packaging purposes.

1. Records: Submit completed and signed hazardous waste manifest from treatment or disposal facility.

PART 2 PRODUCTS

2.01 PAINT CONTROL PRODUCTS

Submit for approval, applicable Material Safety Data Sheets for paint control products used in paint control work. Use the least toxic product, suitable for the job and acceptable to the Owner's Representative.

PART 3 EXECUTION

3.01 PROTECTION

- A. Notification: Prior to the renovation work, all workers are to be notified that components in the building being disturbed during the renovation activities contain lead and have received adequate training under 29 CFR 1926.62.
- B. Lead Work Area Requirements: Establish a Lead Work Area as needed by demarcating with a minimum of 4" barrier tape and placing 6 mil (0.15 mm) in thickness polyethylene sheeting on floors, where lead-containing building materials will be disturbed.
- C. Protection of Existing Work to Remain: Perform renovation activities involving the disturbance of lead-containing building materials without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, the Contractor will restore it to its original condition.
- D. Boundary Requirements: Provide physical boundaries around the Lead Work Area by sealing off the area, if determined necessary, and as designated on the approved work plan to ensure that airborne concentrations of lead will not reach thirty micrograms per cubic meter (30 µg/m³) of air outside of the Lead Work Area.
- E. Heating, Ventilating and Air Conditioning (HVAC) Systems: Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead work areas. Seal intake and exhaust vents inside the lead work area with 6 mil (0.15 mm) in thickness polyethylene sheeting and tape. Seal seams in HVAC components that pass through the Lead Work Area as needed.
- F. Change Room and Shower Facilities: Provide clean change rooms and shower facilities in accordance with requirements of 29 CFR 1926.62 as needed.

G. Mechanical Ventilation System (if deemed necessary through the lead control work plan):

1. Use adequate ventilation to control personnel exposure to lead in accordance with 29 CFR 1926.62.
2. Contain removal operations by the use of a negative pressure containment system with at least one change room and with HEPA filtered exhaust, exhausted to the outside of the building. The negative pressure containment shall have a minimum of 6 air changes per hour. The Contractor shall maintain a -0.020 column inches of water pressure differential, relative to outside pressure. This measurement shall be recorded and maintained within the enclosure as evidenced by manometric measurements and maintained around the clock, or until authorization for containment control is obtained from the Owner's Representative. Hourly readings shall be recorded while renovation work involving the disturbance of lead-containing building materials is being performed. Anytime the negative pressure is less than -0.020 column inches of water pressure differential, relative to outside pressure, all renovation work inside the containment will stop. The work may be restarted only after the negative pressure is restored to a level of -0.020 column inches of water pressure differential or greater, relative to outside pressure.

H. Personnel Protection: Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking is not permitted in the Lead Work Area. The Contractor shall provide the appropriate type of respirator to be used by the employees as required by 29 CFR 1926.62.

I. Warning Signs: Provide warning signs at approaches to Lead Work Areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

3.02 WORK PROCEDURES

A. The assigned Competent Person shall supervise the renovation work and will be on site anytime work is on-going. This person shall use procedures and equipment required to limit occupational and environmental exposure to lead during renovation activities in accordance with 29 CFR 1926.62, except as specified herein. Dispose of lead-containing materials, any paint chips and associated waste in compliance with applicable Federal, State, and local requirements.

B. Personnel Hygiene: Whenever personnel exit the Lead Work Area, workers shall perform the following procedures and shall not leave the work until:

1. HEPA vacuum themselves off;

2. Remove protective clothing, and place them in an approved impermeable disposal bag;
 3. Change to clean clothes prior to leaving the Lead Work Area.
- C. Monitoring: The Owner shall contract an Industrial Hygiene Consultant (IHC) to provide on-site project monitoring and testing.
1. The IHC shall not have any direct or indirect association with the GC or the Contractor.
 2. Monitoring of airborne concentrations of lead shall be conducting in accordance with 29 CFR 1926.62 and as specified herein.
 3. The IHC shall be on the job site monitoring the Lead Control Procedures to ensure that the requirements of this Specification have been satisfied during the entire Lead Work.
- D. Monitoring during the Lead Work:
1. The IHC shall perform work area monitoring during the entire Lead Work. Sufficient area monitoring shall be conducted at the physical boundary outside the Lead Work Area to ensure unprotected personnel are not exposed above thirty micrograms per cubic meter (30 $\mu\text{g}/\text{m}^3$) of air.
 - a. If the outside boundary lead levels are at or exceed 30 $\mu\text{g}/\text{m}^3$ of air, work shall be stopped and the IHC shall notify the Owner immediately.
 - i. The IHC shall immediately investigate, perform necessary air and/or wipe sampling and render a decision as whether these areas are contaminated. The findings of the investigation and the results of any samples taken shall be reported to the Owner immediately.
 - ii. If the area investigated by the IHC is found to be contaminated with lead, the following procedures shall be followed:
 - a) Work in the Lead Work Areas shall remain halted.
 - b) The Contractor shall decontaminate (clean up) the contaminated area.
 - c) The IHC shall determine the source and cause of the contamination, along with the necessary corrective measures to be taken.
 - d) The Contractor shall decontaminate the contaminated area using the corrective measures outlined by the IHC.
 - e) The IHC shall visually inspect the “contractor cleaned” contaminated area and perform floor wipe tests. The number of floor wipe tests will be determined by the IHC. Results of the floor wipe tests shall be less than forty micrograms per square feet (40 $\mu\text{g}/\text{ft}^2$). The IHC shall submit copies of all sample results along with a certification that the area is no longer contaminated with lead.
 - f) If on the second try, the contractor is unable to achieve a floor wipe sample result of less than 40 $\mu\text{g}/\text{ft}^2$ for a particular area, the following procedures shall be followed:
 1. The IHC shall render a decision as to what clearance level would be achievable for that particular area.

2. The IHC shall submit to the Owner this decision, along with copies of the sampling data for area, along with a certification that the area is no longer contaminated with lead.
 - g) The Owner will issue the authority to restart work in the Lead Work Area, once the IHC certifies to the Owner, that the contaminated area has been successfully decontaminated.
2. The IHC shall review the sampling data collected daily to determine if condition(s) requires any further change in work methods. The Lead Work shall resume when approval is given by the Owner.

E. Final Clearance Dust Wipe Testing (Recommended)

1. The IHC shall perform dust wipe testing by using methodology that is outlined in HUD's Guidelines for the Evaluation and Control of Lead-Based Paint hazards in Housing. Each Lead Work Area is considered complete, if all dust wipe sample results are below:
 - a. 40 micrograms per square feet (40 µg/ft²) on floors;
 - b. 250 micrograms per square feet (250 µg/ft²) on interior window sills;
 - c. 400 micrograms per square feet (400 µg/ft²) on window wells or troughs;
 2. The Contractor shall be responsible for re-cleaning of the Lead Work Area, following the analysis of final clearance floor wipe samples resulting in unacceptable concentrations of lead at no additional cost to the Owner.
 3. The Contractor shall be responsible for any additional cost due to the Owner for the re-collection of final clearance floor wipe samples due to unacceptable initial results including sample analysis and sample collection fees.
 4. If after the second attempt, the Contractor is unable to achieve a dust wipe sample result of less than the standards listed above for a particular Lead Work Area, the following procedures shall be followed:
 - a. The IHC shall render a decision as to what clearance level would be achievable for that particular Lead Work Area;
 - b. The IHC shall submit to the Owner this decision, along with copies of the sampling data for containment control approval.
- F. OSHA Monitoring: OSHA Monitoring is work of the Contractor and is not covered in this section. However, it must be conducted daily as required and in accordance with 29 CFR 1926.1101.

3.03 CLEANUP

- A. Cleanup: Maintain surfaces of the Lead Work Area free of accumulations of Lead Containing Material chips and dust; Restrict the spread of dust and debris; Keep waste from being

distributed over the Lead Work Area; Do not dry sweep or use compressed air to clean up the Lead Work Area; At the end of each shift and when the Lead Work has been completed, clean the Lead Work Area of all visible Lead Containing Material contamination, dust and debris by vacuuming with a HEPA filtered vacuum cleaner and wet wipe and or mopping the area.

- B. Certification: The IHC shall certify in writing the following:
1. The analytical results of the air samples collected from outside each Lead Work Area are less than thirty micrograms per cubic meter (30 µg/m³) of air.
 2. The Lead Work Procedures were performed by the Contractor in accordance with 29 CFR 1926.62 and this Specification, and that there were no visible accumulations of Lead Containing Material and/or lead contaminated dust on the work site.
 3. Do not remove the Lead Work Area or roped-off boundary and warning signs prior to the IHC's approval and receipt of the IHC's certification.

3.04 DETERMINATION OF HAZARDOUS WASTE MATERIALS

- A. Testing of waste by Toxicity Characteristic Leaching Procedure (TCLP) will be performed by the Owner's Representative. Sampling of waste products shall be conducted in a representative manner in accordance with EPA Document SW 846 and analyzed performed in accordance with EPA Method 1311. Samples will be collected from each waste category. Results will be supplied to the Contractor.
- B. Waste tested which results in a lead content in the leachate of greater than or equal to five parts per million (5 ppm) is to be considered hazardous, handled and disposed of according to local, city, state, and federal regulations. Waste tested which results in a lead content in the leachate of less than 5 ppm can be disposed of as regular construction waste. In no manner may the components that contain lead-based paint (LBP) shall be recycled and re-deposited on site.

3.05 DISPOSAL

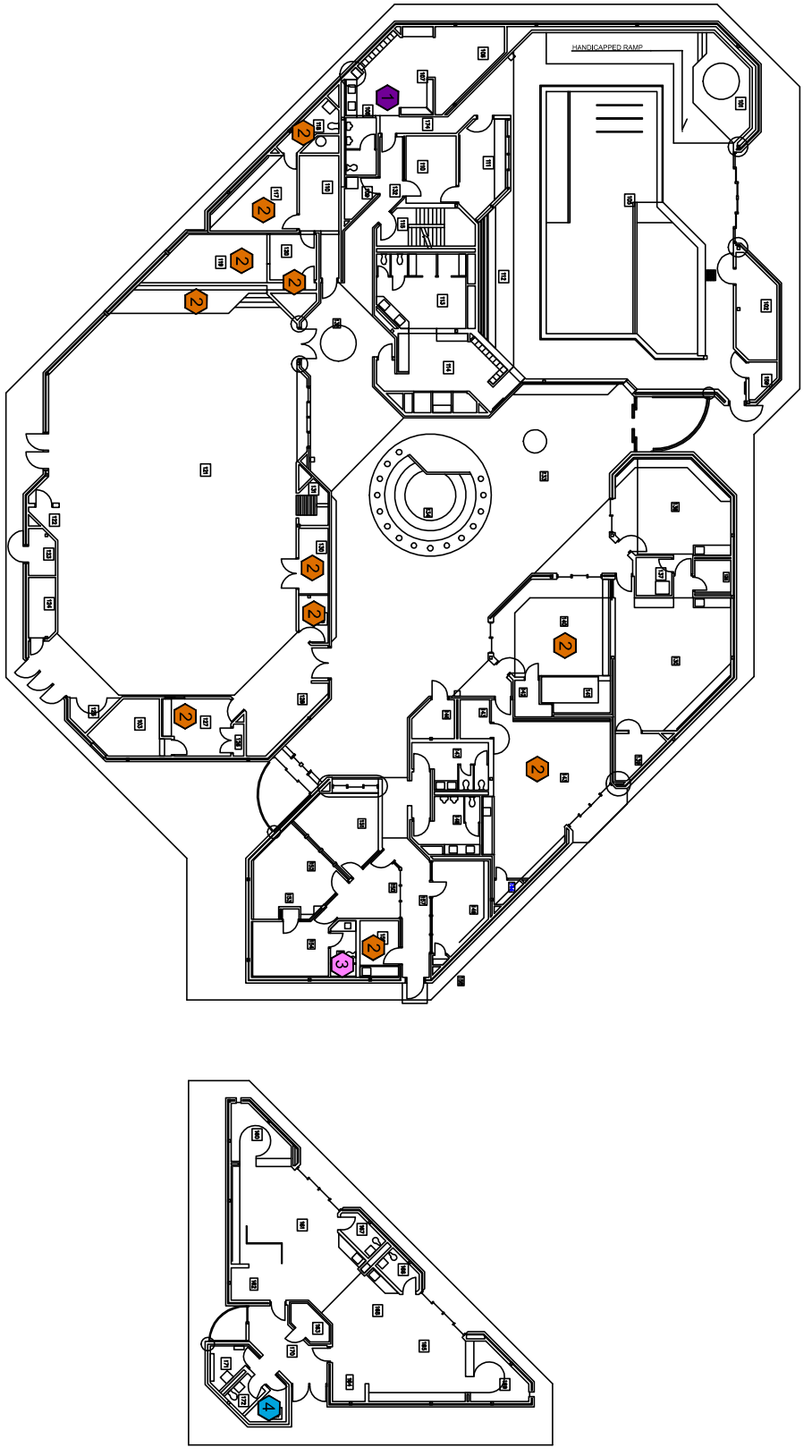
- A. Collect all potential lead-contaminated waste, including but not limited to, removed paint chips, architectural components, scrap, debris, bags, containers, equipment, and lead-contaminated clothing.
- B. For drummed waste, store in U.S. Department of Transportation (49 CFR 178) approved 55 gallon drums to identify the type of waste (49 CFR 172) and the date lead contaminated wastes were first put into the drum. For architectural components, e.g., doors, windows, and molding, store so as to prevent environmental contamination. 6-mil plastic sheeting should be placed underneath and on top of the material; plywood or other durable material should be placed on top of the plastic to prevent it from being punctured. Transport waste in covered vehicle only.

- C. Periodically remove hazardous wastes, so that 90 calendar day storage limitations are not exceeded.
- D. Handle, store, transport, and dispose lead or lead-contaminated waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.
- E. Disposal Documentation: Submit written evidence that the hazardous waste transporter and the treatment, storage, or disposal facility (TSDF) is approved for lead disposal by the EPA and state or local regulatory agencies. Submit one copy of the completed manifest, signed and dated by the initial transporter in accordance with 40 CFR 262. Submit Certification of disposal from TSDF.

13283 – Lead Control Procedures
Therapeutic Recreation Center
3030 G Street, SE, Washington, DC

END OF SECTION

1ST FLOOR



- ASSUMED ASBESTOS-CONTAINING MATERIALS**
- Thermal Systems Insulation (T/S) on Pipes/Fittings
 - Boiler Units - Interior Components
 - Fire Door Insulation
 - Ceramic Tile Mastic/Floor Felt
 - Electric Panels: Cement Components
 - Pipe Flange Gaskets
 - Air Handler Units: Interior Components
 - Chalkboard/Bulletin/Wall Panel Board/Mirror Mastics
 - Water Fountain Components
 - Radiators - Cement Boards/Insulation Components
 - Hood - Cement Board
 - Waterproofing Membranes/Mastics

ASBESTOS-CONTAINING MATERIALS	
1	Plaster Ceiling - Black Layer
2	12" x 12" Brown Mottled Floor Tile and Associated Black Mastic
3	Black Sink Under Treatment
4	Grey 12" x 12" Floor Tile

*Note: The Boiler Tank Insulation and Cloth Wrap is asbestos-containing, and was located in the basement boiler room (floor plans unavailable at time of drawing).

ASBESTOS-CONTAINING MATERIALS LOCATIONS MOODY NOLAN, INC.		CENTER FOR THERAPEUTIC RECREATION 3030 G STREET, SE WASHINGTON, D.C.
PROJECT NO. 01.23603/37-1413 SHEET 1 OF 1 DATE 11-27-84	ENGINEER / DRAFTING SRG / JAA SCALE NTS	