SECTION 020800

ASBESTOS REMOVAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. DIVISION 1 GENERAL REQUIREMENTS shall apply as fully as if included herein.

1.2 NOTES FOR DEMOLITION

A. The General Contractor's Abatement Subcontractor shall coordinate with the Mechanical, Electrical, Plumbing Subcontractors to ensure that all appropriate systems that will be impacted by demolition have been properly decommissioned prior to the start of any work.

B. The General Contractor's Abatement Subcontractor shall verify that the structure will support the planned activities and comply with local building codes and OSHA requirements.

1.3 WORK INCLUDED

A. The work includes the furnishing of all labor, materials, equipment, insurance and services necessary for asbestos removal and all required associated work both on the interior and exterior of existing 1D facility, as addressed in the contract documents, to allow demolition of the facility to occur.

B. Comply with all governing regulations, which the specifications supplement.

C. Comply with DIVISION 1 GENERAL REQUIREMENT.

D. All other work as herein specified. The Contractor will be responsible for obtaining any local, state, and federal permits, as appropriate for this project, prior to starting work. All permits, notifications, patent restrictions or requirements, whether specified in these specifications or not, are the sole responsibility of the Contractor performing the work described in these specifications. **Note:** If during the course of the contract, the Contractor is found to be not in compliance with the project specifications, the Contractor will stop all work until any deficiencies in his performance of this work are corrected. Standby time required to resolve any violations shall be at the Contractor's expense. Likewise the Contractor will pay for any project delay that his violation causes the Building Owner. The contractor will also be back-charged by the Building Owner for any additional IH/project monitor site visits and/or additional analytical (and collection) fees resulting from poor work practices during removal including all failed final air samples.

1.4 REGULATIONS

A. All work shall conform to the requirements of the U. S. Environmental Protection Agency (EPA), U. S. Department of Labor - Occupational Safety and Health Administration (OSHA) and applicable State regulations relating to asbestos.

B. The EPA and OSHA regulations shall be posted at the job site for the duration of the work; posting shall be in a location clearly visible to employees and others in the area.

1.5 DEFINITIONS

A. Accredited/Accreditation: When referring to a person, Contractor or laboratory, means that such person is accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act (AHERA Regulations).

B. Aerosol: A system consisting of particles, solid or liquid, suspended in air.

C. Aggressive Sampling: High-activity level air sampling which results in all settled asbestos remaining airborne and uniformly disturbed through the use of special entrainment and mixing techniques. This makes any settled asbestos fibers accessible to the sampling filters for subsequent detection. The technique is described in 40 C.F.R. 763.90, Appendix A to Subpart E; and Guidance for Controlling ACM in Buildings, Appendix M.

D. Air Filtration Device (AFD): Air filtration device (AFD) is part of the pressure differential system in which the air is filtered. The AFD is to be equipped with HEPA filters.

E. Air Monitoring: The process of measuring the fiber content of a specific volume of air. NIOSH Method 7400 or TEM Method in 40 C.F.R. 763, Subpart E, Appendix A, will be used for sampling and analysis.

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

G. Approve: Where used in conjunction with the QP's response to submittals, requests, applications, inquiries, reports, and claims by the Contractor, "approved" will be held to limitations of QP's responsibilities and duties and does not release the Contractor from responsibilities to fulfill requirements of the Contract Documents. Approved shall also mean consent by U.S. EPA of training programs and the like.

H. Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (asmosite), anthophyllite, and actinolite-tremolite. Both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered to be asbestos.

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

J. Asbestos-Containing Waste Material: Any material, which is or is suspected of being or any material contaminated with an asbestos-containing material, which is to be removed from a Work Area for disposal.

K. Authorized Visitor: Personnel authorized by the Project Officer, testing lab personnel, or a representative of any Federal, State or local regulatory agency having authority over the project are considered authorized visitors.

L. Barrier: Any surface that seals off the Work Area to inhibit the movement of fibers.

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

N. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

O. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

P. Critical Barrier: Two layers of 6 mil polyethylene sheeting on wall or three layers on floor, spray foam, or duct tape used to completely seal off the Work Area to prevent spread of fibers to surrounding areas.

Q. Decontamination (Decon) Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower room and a clean room which is used for the decontamination of workers, materials and certain equipment contaminated with asbestos. This shall serve as the only entrance or exist to the Work Area.

R. Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

S. Disposal Bag: A 6-mil thick, leak-proof polyethylene bag used for transporting asbestos waste from the work area to the disposal site. Each is labeled in compliance with OSHA 1926.1101 as follows:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

And U.S. DOT ORM-E label for Asbestos-Hazardous Material (including Asbestos Waste Manifest) and statements as required.

T. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent release of fibers.

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

V. Penetrating Encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

W. Removal Encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather than for in situ encapsulation.

X. Encapsulation: Treatment of ACM with an encapsulant.

Y. Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

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

AA. Friable Asbestos Material: Material that contains more than 1.0% asbestos as determined by Polarized Light Microscopy (PLM), and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. This includes previously non-friable material which becomes damaged to the extent that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

BB. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

CC. General Supervisor: Site Superintendent, Foreman: is the Contractor's representative at the work site. This person can be the Competent Person required by OSHA, 29 C.F.R. 1926.1101.

DD. Glovebag: A sack (typically constructed to 6 mil transparent polyethylene) with two inward projecting long sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.

EE. HEPA Filter: A high efficiency particular air (HEPA) filter that removes from air 99.97% or more of monodispersed dioctylphthalate (DOP) or dioctylsebacate (DOS) particles having a mean particle diameter of 0.3 microns.

FF. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): HEPA filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be 99.97% efficiency for retaining fibers of 0.3 microns or larger.

GG. Indicated: The term "Indicated" is a cross-reference for Notes or Schedules on Drawings, to other paragraphs or Schedules in the Specifications, and to similar means of recording requirements in Contract Documents.

HH. Install: Unless defined in greater detail, "install" is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working on dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

II. Installer: The "installer" is defined as the entity (person or firm) engaged by the Contractor or Sub-Contractor to perform a particular trade at the work site, including installation, erection, application and similar required operations. Such entities (installers) shall be expert in operations they perform.

JJ. Landfill Receipt: Document signed by a landfill operator acknowledging the receipt of ACM waste.

KK. Manifest: A document detailing chain of custody for ACM waste hauled.

LL. Negative Pressure Glovebag: A glovebag that is composed of flexible plastic that can be subjected to negative pressure without collapsing.

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

NN. Permissible Exposure Limit (PEL): The Contractor shall ensure that no employee is exposed to an airborne fiber concentration of asbestos in excess of the PEL expressed as an 8-hour TWA as determined by the OSHA Reference Method of 29 C.F.R. 1926.1101 (Current PEL for asbestos is 0.1 fiber/cc).

OO. Personal Sampling Monitoring: Air samples taken in the breathing zone of workers as required by OSHA 29 C.F.R. 1926.1101.

PP. Pressure Differential: Air pressure lower than surrounding areas, caused by exhausting air from a sealed space (Work Area).

QQ. Pressure Differential System: A local exhaust system, utilizing HEPA filtration, capable of maintaining a pressure differential inside the Work Area and a constant airflow from adjacent areas into the Work Area and exhausting that filtered air outside the Work Area.

RR. Project Manager (Contractor): The asbestos Contractor's employee responsible for the total oversight of the project.

SS. Project Officer: The State employee responsible for overall contract administration.

TT. Plasticize: Means to cover floors and walls with polyethylene sheeting as herein specified and in accordance with the temporary Enclosure Section.

UU. 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.

VV. Provide: Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

WW. Qualified Person (QP): A Registered Architect, Professional Engineer, or Certified Industrial Hygienist who has successfully completed training and is therefore accredited under a legitimate State Model Accreditation Plan as described in 40 CFR 763 as a Building Inspector, Management Planner, Project Monitor, and Asbestos Project Designer. The QP must be qualified to perform visual inspections as indicated in ASTM E 1368.

XX. Regulated ACM: Means friable ACM, non-friable ACM that has become friable, non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading or non-friable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the ACM during renovation or demolition.

YY. Regulated Area: An area where asbestos removal operations are performed which is isolated by physical boundaries to prevent entry of unauthorized persons or the spread of asbestos dust, fibers or debris. Within this area, the airborne concentration of asbestos could reasonably be expected to exceed the PEL.

ZZ. Removal: The taking out or stripping of all ACM from a damaged area or associated area or space.

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

BBB. Short-Term Exposure Limit (STEL): A "ceiling" concentration, identified in OSHA regulations, of an airborne substance that shall not be exceeded for a duration of any 30-minute period (Current STEL for asbestos is 1.0 fiber/cc).

CCC. Submittal: Items that is required to be presented to the Project Officer and/or the QP for review, consideration or decision.

DDD. Surfacing Material: Material in a building that is sprayed-on, trowelled-on or otherwise applied to surfaces or structural members for acoustical, fireproofing or other purposes.

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

FFF. Testing Laboratory: The "testing laboratory" is an independent entity to perform specific air sampling and analysis at the work site and associated areas, to report and (if required) interpret results. Analysis shall be performed by a laboratory accredited by the American Industrial Hygiene Association (AIHA) and having demonstrated a proficient rating in AIHA's Proficiency Analytical Testing (PAT) Program. The laboratory shall be licensed by the Virginia Department of Commerce as an Asbestos Analytical Laboratory. The laboratory shall also be accredited by the National Institute of Standards and Technology (NIST) through the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk sample analysis and air sample analysis by TEM (TEM Method of 40 C.F.R. 763, Subpart E, Appendix A).

GGG. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

HHH. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed water vapor.

III. Waste Shipment Record: Means the original shipping document, originated and signed by the waste generator (Abatement subcontractor) used to track and substantiate the disposal of ACM waste as described in 40 C.F.R. Part 61.

JJJ. Waste Generator: Means the licensed Asbestos Abatement subcontractor removing ACM waste from the property.

KKK. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils that have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-containing waste.

LLL. Work Area: The area where asbestos-related work or removal operations are performed; the Work Area is defined and/or isolated to prevent the spread of asbestos dust, fibers, or debris, and entry by unauthorized personnel. The Work Area is a Regulated Area as defined by 29 C.F.R. 1926.1101.

MMM. Work Site: The term "work site" is defined as the space available to the Contractor for performance of the work either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on the Drawings, and may or may not be identical with the description of land upon which the project is to be built.

NNN. Negative Pressure Enclosure: Pressure differential of a minimum of -0.02 column inches of water as related to outside pressure. Utilization of a manometer shall be use as evidence.

ABBREVIATIONS AND NAMES:

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

ACM Asbestos Containing Material

AIA American Institute of Architects
1735 New York Avenue, N.W.
Washington, DC. 20006
(202) 626-7474

ANSI American National Standards Institute
1430 Broadway
New York, NY 10018
(212) 354-3300

ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103 (215) 299-5400
CFR	Code of Federal Regulations Available from Government Printing Office Washington, DC. 20402 (Usually first Published in Federal Register)
EPA	Environmental Protection Agency 401 M Street, SW Washington, DC. 20460 (202) 382-3949
f/cc	fibers per cubic centimeter
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology (U.S. Department of Commerce) Gaithersburg, MD 20234 (301) 921-1000
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) Government Printing Office Washington, DC. 20402
TEM	Transmission Electron Microscopy
UL	Underwriters Laboratories 333 Pfinngsten Road Northbrook, IL 60062

1.6 INFORMATION TO BE SUBMITTED AFTER CONTRACT IS AWARDED

A. Immediately upon award of the Contract, and before any work is commenced, Contractor shall submit for information of the Owner the data listed below, and shall meet the requirements of Section 013300. The data shall show compliance with the requirements of the Contract Documents and governing regulations.

1) Method and means of removal and encapsulation of asbestos-containing materials.

2) Containment and shrouding procedures, including any unusual conditions.

3) Air sampling plan.

4) Name of laboratory to be used in air sample analysis and copy of American Industrial Hygiene Association (AIHA) Accreditation.

5) Location of change and decontamination area.

6) Location of landfill for disposal of asbestos waste that has been approved by EPA.

7) Manufacturer's technical data sheets on proposed surfactant, encapsulant, mastic removers, etc.

8) Certificate of Insurance with notarized statement thereon that all requirements stated in paragraphs 13 (a) through 13 (d) are covered.

9) Copies of Asbestos Worker's License and Asbestos Supervisors License.

10) Notifications to all appropriate state and federal agencies and local fire and police departments.

1.7 SCOPE OF WORK

A. The Scope of Work includes, but is not necessarily limited, to the following:

1) The Abatement Subcontractor shall be responsible for removal of all asbestos-containing materials impacted by this project. These materials include 12”x12” brown floor tile and associated black mastic, HVAC duct mastic, 12”x12” tan floor tile and associated black mastic, yellow vinyl sheet flooring and associated yellow mastic, gray window caulking and white pipe seam sealant.

2) The quantities of ACM included in this document are for informational purposes only, greater quantities of ACM may exist at the site. The Abatement Subontractor is responsible for coordinating with the owner’s representative to determine actual quantities of materials present. Should quantities of material be discovered which are in excess of those stated in this document, the Abatement subcontractor will remove those for the unit price that they provide. The Abatement subcontractor should allow under their Base Bid for the removal of all quantities of materials referenced in this specification.

3) All mobilizations and permit notifications shall be the Abatement subcontractor’s responsibility. In addition, all sampling, monitoring and testing as may be required by applicable regulations and/or as may be specifically required by these specifications shall be the responsibility of the Abatement subcontractor, unless specifically noted as being provided by the Owner (Project monitoring and clearance testing shall be the responsibility of the owner).

4) This section includes all work necessary to reduce air concentrations of asbestos to the specified level and maintain the specified asbestos control limits during the life of the contract. It also contains removal, containment, and disposal of asbestos-containing materials. The work specified in this document consists of the provision of services for the removal and disposal of asbestos-containing building materials (ACBMs). Asbestos materials have been identified in the areas where work will be performed. **As appropriate, the Abatement subcontractor shall pre-clean all the areas from which asbestos containing materials will be removed. All surfaces shall be HEPA vacuumed and wet wiped.**

5) All asbestos abatement work will be performed by competent, licensed by the District of Columbia persons trained, qualified, and knowledgeable in the techniques of abatement, handling, and disposal of ACBMs and materials contaminated by asbestos, in accordance with pertinent local, state, and federal regulations.

B. ITEMS FOR BASE BID:

1) General Demolition

a. NOTE: The following items (c, d, e, f, g, h, I, j, and k) were not specifically identified as asbestos-containing within the 1D facility, however they may still exist at the site and the Abatement subcontractor is to include demolition to reveal any of these materials in their base bid. In addition, *unit prices* to correspond to all known/suspect/presumed items listed below are to be included with the Contractor's Base Bid.

b. **As part of the base bid price,** the Contractor will be required to conduct limited demolition at the 1D facility (to include penetrations through selected walls, ceilings, and exterior walls) as identified by the Owner's project monitor to adequately expose inaccessible areas for inspection and testing. **IF** there are additional asbestos-containing materials discovered within concealed areas, the Contractor's Scope of Work shall be adjusted accordingly based on the results of testing and in accordance with unit prices submitted with the Base Bid. (NOTE 1: Refer to the appropriate specific sections of this specification for an explanation of how these additional costs will be determined.)

If the areas behind the walls and/or ceilings require additional abatement, conduct all asbestos removal within negative pressure containment as appropriate. Where pipe insulation has fallen off of piping behind walls or hard ceilings, the Contractor shall clean and decontaminate these areas as part of the unit cost price. Where wall materials (plaster/drywall) have been contaminated with asbestos, the Abatement subcontractor shall be responsible for the removal and disposal of this material as asbestos-containing waste as part of the unit cost price. If it is determined that the pipe insulation does contain asbestos, all debris generated from the demolition of the walls and pipe chases shall be treated as asbestos-contaminated materials and the areas shall be decontaminated as part of the unit cost price.

c. Demolition of the boiler is required to adequately obtain samples for testing by an accredited Asbestos Inspector. Therefore, partial boiler demolition sufficient to obtain samples is to be included with the Contractor's Base Bid. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so these materials can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing materials be identified during the boiler demolition, the Abatement subcontractor shall remove these materials for the unit cost price that they provide.**

d. Demolition of all areas concealing water fountain pipe wrap and associated contaminated material located throughout the 1D facility. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so this material can be sampled by an accredited Asbestos Inspector. Should asbestos-containing water fountain pipe wrap be identified, the Abatement subcontractor shall remove this material and associated contaminated material for the unit cost price that they provide.**

e. Demolition of all areas concealing fan coil pipe wrap and associated contaminated material located throughout the 1D facility. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so this material can be sampled by an accredited Asbestos Inspector. Should asbestos-containing fan coil wrap be identified, the Abatement subcontractor shall remove this material and associated contaminated material for the unit cost price that they provide.**

f. Destructive testing of fire doors is required to adequately obtain samples for testing by an accredited Asbestos Inspector. Therefore, partial demolition sufficient to obtain samples is to be included with the Contractor's Base Bid. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition on fire doors throughout the 1D facility so the doors can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing fired doors be identified, the Abatement subcontractor shall remove this material for the unit cost price that they provide.**

g. Demolition of all areas concealing asbestos-containing pipe gaskets and flanges located throughout the 1D facility. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so these materials can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing pipe gaskets and/or flanges be identified, the Abatement subcontractor shall remove these materials for the unit cost price that they provide.**

h. Demolition of all areas concealing asbestos-containing pipe insulation and associated contaminated material located throughout the 1D facility. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so this material can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing pipe insulation or associated contaminated material be identified, the Abatement subcontractor shall remove this material for the unit cost price that they provide.**

i. The Contractor shall be responsible for providing demolition to access the vapor barrier between the exterior brick and concrete masonry units for all buildings. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so this material can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing vapor barrier be identified, the Abatement subcontractor shall remove this material for the unit cost price that they provide.** The Contractor shall remove this material intact (as much as reasonably possible) and use wet methods for removal. The Abatement subcontractor shall remove these materials by placing at least two layers of 6 mil plastic sheeting on the ground and extending it out 10 feet from the building foundation. The Abatement subcontractor shall follow procedures described in Part 3 – Execution of this document.

j. Demolition of all areas concealing blackboard/mirror mastic throughout the 1D facility. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so this material can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing blackboard/mirror mastic be identified, the Abatement subcontractor shall remove this material for the unit cost price that they provide.**

k. Demolition of the elevator cab and associated equipment is required to adequately obtain samples for testing by an accredited Asbestos Inspector. Therefore, partial demolition sufficient to obtain samples is to be included with the Contractor's Base Bid. **As part of the base bid, the Abatement subcontractor shall perform exploratory demolition so these materials can be sampled by an accredited Asbestos Inspector. Should any asbestos-containing materials be identified during the elevator cab and associated equipment demolition, the Abatement subcontractor shall remove these materials for the unit cost price that they provide.**

2) Identified Asbestos-Containing Material

a. The Asbestos Abatement subcontractor shall remove and dispose of all asbestos-containing window caulk – approximately 900 linear feet of caulk. The Contractor shall remove this material intact (as much as reasonably possible) and use wet methods for removal. The Abatement subcontractor shall remove these materials by placing at least two layers of 6 mil plastic sheeting on the ground and extending it out 10 feet from the building foundation. The Abatement subcontractor shall follow procedures described in Part 3 – Execution of this document.

b. The Abatement subcontractor shall remove approximately 2,030 square feet of asbestos-containing yellow vinyl sheet flooring material and associated yellow mastic. The Contractor shall remove this material within negative pressure enclosure (minimum neg. pressure 0.02" w.g.). The contractor shall also be responsible for removal of multiple layers of flooring and mastic if present. The Contractor shall also be responsible for removal of flooring and mastic under all partition walls, fixtures, cabinets, carpets, etc.

c. The Abatement subcontractor shall remove approximately 11,000 square feet of asbestos-containing 12”x12” brown vinyl floor tile and associated black mastic. The Contractor shall remove this material within negative pressure enclosure (minimum neg. pressure 0.02” w.g.). The contractor shall also be responsible for removal of multiple layers of tile and mastic if present. The Contractor shall also be responsible for removal of flooring and mastic under all partition walls, fixtures, cabinets, carpets, etc.

d. The Abatement subcontractor shall remove approximately 2,500 square feet of asbestos-containing 12”x12” tan vinyl floor tile and associated black mastic. The Contractor shall remove this material within negative pressure enclosure (minimum neg. pressure 0.02” w.g.). The contractor shall also be responsible for removal of multiple layers of tile and mastic if present. The Contractor shall also be responsible for removal of flooring and mastic under all partition walls, fixtures, cabinets, carpets, etc.

e. The Abatement subcontractor shall remove approximately 6,000 square feet of asbestos-containing HVAC mastic. The Contractor shall be responsible for all demolition of lay-in ceiling tiles and hard ceilings to reveal this material. The Contractor shall remove this material within a negative pressure enclosure (minimum negative pressure 0.02 “ w.g.). The contractor shall also be responsible for cleaning any mastic of duct work or other items which have been contaminated by this material.

f. The Abatement subcontractor shall remove approximately 250 linear feet of asbestos-containing pipe seam sealant.

g. Vinyl flooring materials and associated mastics. The materials to be removed include various colors of vinyl floor tile and associated mastics located in the building. **Note 1: Carpeting in some areas of the building may conceal some of the materials. As part of the Contractor base bid, select carpet removal will be required as directed by the Building Owner's representative to evaluate if additional asbestos flooring materials are present.** Where carpeting covers floor tiles and mastic, the Abatement subcontractor is responsible for removal of all carpeting. The carpeting shall be removed under negative pressure containment in conjunction with the floor tile and mastic removal and disposed of as asbestos-containing waste. If the carpeting can be removed without breaking or disturbing the underlying floor tile, the Abatement subcontractor may dispose of it as non-asbestos waste. Note 2: Flooring removal may contain multiple layers of floor tiles and mastic. As part of the Base Bid, the Abatement subcontractor shall remove all layers of floor tiles and associated mastic. The Abatement subcontractor shall assume that all flooring contains multiple layers. Note 3: The Abatement subcontractor shall be responsible for removal of all vinyl floor tile and mastic under partition walls, fixtures, cabinets, and other furnishings and obstructions. The Abatement subcontractor shall remove these materials within a negative pressure containment as described in Part 3 – Execution of this document. Any additional materials discovered shall be addressed under the unit cost estimate.

1.8 NOTES FOR DEMOLITION

Additional abatement notes:

Note 1: the contractor shall provide units costs for the removal of the following materials:

1. Pipe insulation (per linear foot – glove bag)
2. Pipe insulation (per linear foot – removal within existing containment)
3. Blackboard/wall mastic (per square foot)
4. Flooring material and associated mastic/backing (per square foot)

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.

Note 2: The quantities indicated are for information purposes only. The contractor is responsible for verifying all quantities to be removed to complete the scope of work.

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 the project specifications, the contractor will stop all work immediately to resolve the violation. Standby time shall be at the contractor's expense.

Note 4: Following completion of work, the owner's representative shall visually verify that all ACMs scheduled for removal have been removed and that the containments are clean and ready for final aggressive air sampling. US EPA AHERA protocols will be followed for clearance criteria. Contractor will re-clean the containment areas at their own expense until containment passes both visual and aggressive air sampling.

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

B. The Abatement subcontractor 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.

During demolition, no visible emissions of dust are allowed. The Contractor must use dust control measures (i.e., water) during demolition.

1.8 QUALITY CONTROLS

A. The asbestos removal Contractor's superintendent shall be on the job each day during removal and he shall be knowledgeable, experienced and competent in this type of work.

B. Authorities of the District of Columbia shall be notified of the starting date of the asbestos removal project by the asbestos removal Contractor.

C. The Owner reserves the right to halt the project work until hazardous or potentially hazardous conditions are corrected.

D. The Owner reserves the right to independently perform such analysis and tests at any time, as he deems necessary to ensure and protect safety of the project.

1.9 WORKER PROTECTION - ASBESTOS REMOVAL PROCEDURES & EQUIPMENT

A. Comply with all EPA and OSHA Regulations, and follow EPA workplace guidelines.

B. Provide and maintain negative air systems for all work areas, for the duration of asbestos removal work.

C. Submit certificates signed by each employee indicating that the employee has received District of Columbia-approved training and is currently licensed in the District of Columbia in the proper handling of materials that contain asbestos.

D. All workers shall be instructed in and be knowledgeable of the following:

1) The hazards of asbestos exposure.

2) Use of respirators and protective clothing.

3) Use of personal air monitoring equipment.

4) Use of decontamination facilities and designated showers.

E. Respiratory Equipment and Air Sampling Requirements

1) Provide workers with respiratory equipment in accordance with OSHA 1910.134, as suitable for the asbestos exposure in the work area.

2) Provide sufficient filters for replacement of disposable type filters.

F. Provide a copy of written respirator program on the job site at all times.

G. Personnel breathing zone samples shall be made by the asbestos removal Contractor on a daily basis for determination of both 8-hour time weighted average (TWA) and ceiling concentrations of employee exposures.

H. The sampling schedule shall be posted outside of the containment area showing sample frequency, duration of the sample, and pump flow rates.

I. Results of all samples shall be posted within 24 hours of sampling outside of the containment area, and maintained there until the job has been concluded. This data shall include both the results of individual samples and the results of 8-hour

TWA determinations. Posted results should include a synopsis of work activities of which the results are representative.

1.10 AIR MONITORING

A. Provide air monitoring in the work areas throughout all asbestos stripping, removal and cleaning operations to ensure that the workers are adequately protected at all times. All personal air monitoring for OSHA compliance shall be the responsibility of the Contractor.

B. Samples for air monitoring shall be collected by a competent person in accordance with methods prescribed in Chapter X of the Federal OSHA Industrial Hygiene Field Operations Manual or by equivalent procedures.

C. Air monitoring shall be in compliance with 1910.1001 (f) of the OSHA standards.

D. Air samples must be analyzed by NIOSH method 7400 by a laboratory accredited by AIHA.

E. Air monitoring (protection of the Contractor's employees) shall be provided throughout the removal and cleaning operations. Air monitoring shall be conducted and evaluated by a testing laboratory employed by the asbestos removal Contractor to ensure that the Contractor is complying with applicable EPA and OSHA regulations.

F. Environmental samples outside of containment and clearance sampling shall be performed by the QP.

G. Area samples shall be collected outside the containment in areas of highest risk of contamination.

H. Samples shall be made on a daily basis outside the containment.

I. All analytical results shall be presented as signed "Certificates of Analysis". Form shall state:

Date and time sampling began.
Flow rate of samples.
Sampling time elapsed.
Concentration of fibers.
Site/individual sampled.
Signature of Analyst.

J. Two copies of analytical results shall be delivered in writing to the job site within 24 hours of sample collection (excluding non-working days).

K. Sampling schedules for area samples shall be posted outside the containment area showing sampling frequency, sample duration, and pump flow rates.

L. Results of area samples made outside the containment shall be posted within 24 hours and maintained in the area showing the fiber concentrations. Posted

results should include a synopsis of the day's activities of which the samples are representative.

M. The Owner shall be informed immediately of any area samples outside the containment with results in excess of 0.01 fibers/cc.

N. Copies of the results of all samples made in areas where Owner's employees are or may be exposed shall be given to the Owner to assure maintenance of records in compliance with OSHA standard 1910.1001 (i) (1).

O. Operations shall be discontinued immediately at any time visible emissions are observed emanating from the containment.

PART 2 - PRODUCTS

2.1 PRODUCTS AND EQUIPMENT

A. Protective plastic (polyethylene) sheeting of minimum 6-mil thickness and size to provide protection to all equipment, floors, walls, piping, ductwork, and all other exposed areas, with minimum frequency of joints.

B. Seal tape shall be glass fiber or other type capable of sealing joints of adequate sheets of plastic for the attachment of plastic sheeting to finished or unfinished surfaces of dissimilar materials under either dry or wet conditions, including use of amended water.

C. Disposal Containers: Bags and drums to be used for disposal of asbestos waste shall be suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an EPA approved and certified waste disposal site. Bags shall be of 6 mil thickness.

D. Warning Labels: As required by OSHA Regulation 29 CFR 1910.1001 (g) (2).

E. Surfactant (wetting agent for amended water): Acceptable surfactant.

F. Encapsulant: Acceptable encapsulant.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Isolate the work areas for the duration of the work by completely sealing off all openings and fixtures in the work area with plastic sheeting taped and glued securely.

B. Cover floor and wall surface with plastic sheeting sealed with tape and glue securely, as required. Use a minimum of two layers of 6-mil plastic sheeting on floors. Cover floors first so that sheeting extends at least 12" [300 mm] up on walls, and then cover walls with minimum 6 mil plastic sheeting to the floor level thus overlapping the floor material by a minimum of 12" [300 mm].

C. Contractor shall provide the Outside Clean Room, Shower Room, and Equipment Room prior to start of work within building work areas. Personnel lockers in the Clean Room and facilities for disposal of contaminated clothing in the Equipment Room shall be provided. Egress openings shall consist of two sheets of plastic taped across the opening head and down opposite jambs, one leaf shall be taped on one side of the jamb, the other on the opposite jamb.

D. Containment partitions separating a contaminated area from a clean area shall be constructed of wood studs and two sheets of minimum 6-mil polyethylene plastic. The inner plastic barrier shall face the contaminated area, the outer barrier, and the clean area.

E. Maintain enclosures in tidy conditions. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning and end of each work period. Use smoke methods to test effectiveness of barriers.

F. Each unit of asbestos filtration systems shall consist of a blower filter system, equipped with HEPA inline filtration that, as a minimum, continuously traps asbestos fibers of all sizes to 0.3 microns at 99.97% efficiency. Each unit shall be equipped with the following minimum controls:

1) A warning light and audible alarm to indicate reduced air flow due to dirty filters.

2) Automatic shut down, with warning light, to ensure against continued operation of units in event of clogged or damaged filters.

G. The asbestos filtration system shall be in operation during all removal operations, until final clearance air samples are received. An adequate number of filtration units shall be used to assure maintenance of pressure differential of -0.02" w.c. In addition, filtration units shall be sized to provide a minimum of four air changes per hour in the containment area. Provide instrumentation to document pressure differential.

H. Post the EPA and OSHA regulations or any applicable state and local government regulations at the job site in locations clearly visible to employees and others. Attention is directed to all requirements of the Contract Documents concerning precautionary procedures mandated thereby and by OSHA and EPA for the protection of personnel, the public, and the environment from exposure to or possible contamination by asbestos fibers.

I. In addition to requirements for asbestos protection, comply with all other applicable requirements of 29 CFR 1910 and 1926.

J. Provide hard hats, eye protection, and foot protection in those areas where such protective measures are required by OSHA regulations.

K. Workers shall always wear a respirator properly fitted on the face while in the work area. Instruct and train workers to use respirators properly in accordance with the requirements of the American National Standards Practices for Respiratory Protection (ANSI Z88.2-1969). Ensure that workers wear the

appropriate respirator at all times while in the work area. Each employee shall be tested for respirator fit in accordance with the cited ANSI standard.

L. Workers shall wear disposable full body coveralls and disposable head and foot coverings in the work area. If non-disposable footwear such as protective shoes are required and disposal foot coverings are not suitable, the non-disposable protective footwear shall be left in the work area at all times until disposal at job completion, then disposed of as asbestos contaminated waste.

M. The Contractor shall establish decontamination procedures for each work area. All persons without exception shall pass through these decontamination areas for any purpose. Procedures shall, as a minimum, consist of the following:

1) Outside Clean room Area: In this room, the worker or individual shall remove normal street clothing and replace with clean work clothing, including disposable coveralls, respiratory protective equipment, and all other protective gear. No asbestos contaminated items shall enter this room with the exception of reusable respirators, which are to be placed in a bin, or other suitable receptacle approved by the Contractor's technical representative. Provide suitable lockers or other secure storage areas for the employee's clothing.

2) Showers: A shower room or similar facility shall be provided for transit by cleanly dressed workers entering the work area from the outside clean room, or by workers headed for the showers after undressing in the contaminated equipment room or area. Except in cases of emergency, no person shall leave a contaminated area without first having taken a shower. Propose methods by which the personal hygiene of workers or other persons involved can be monitored. Water from the showers shall be passed through 5-micron water filters and then piped into the building floor drain or collected and disposed of by the Contractor. Provide water for the showers. Cold water supply from existing system may be tapped by use of garden hoses, clamps and control valves. The taps and extensions shall be provided by the Contractor. The change facility shall be equipped with adequate water heating capacity to provide for hot water showers. The decontamination facility shall be equipped with a thermostatically controlled heating system for the clean room and equipment room.

3) Equipment Room: Provide an area in which work equipment, footwear and contaminated work clothing can be placed in suitable receptacles for reuse or disposal prior to entry into the shower room and thence to the outside clean room.

4) Decontamination Procedures: Submit to the Owner, a protection program to ensure that workers and others follow an established decontamination sequence utilizing the aforementioned facilities. They shall ensure that gross contamination and debris is removed from protective clothing and equipment prior to egress from the work area. Respiratory protective equipment shall be removed last, during shower, to prevent inhalation of fibers during removal of contaminated clothing. The Contractor shall provide a plan for receipt, inspection, cleaning and storage of respiratory

protective equipment in such a manner as to avoid contamination of clean areas.

3.2 METHOD OF REMOVAL FOR ENCLOSED WORK AREAS

N. A low-pressure fine spray of amended water shall be applied to reduce fiber release preceding removal. The asbestos shall be saturated sufficiently to retard emission of airborne fibers. If the asbestos is thick and detaches in chunks having dry bottoms, amended water shall be sprayed over the material as it is loosened and removed.

O. Following removal of asbestos-containing material, all plastic sheeting, tape, cleaning material, clothing and all other disposal materials or items used in the work area shall be packed into sealable plastic bags (6 mil minimum), sealed and placed into metal or fiber containers or skips for transport. The containers or skips shall be labeled as prescribed by OSHA Specifications 29 CFR 1910.1001 (g).

P. All containers shall be cleaned and thoroughly decontaminated before leaving the work area by being passed through the shower, or through the airlock and container cleaning assembly, as follows:

1) Containers shall first be gross-cleaned by vacuuming and then damp-wiped, before being placed into shower container or cleaning airlock.

2) If a container being transferred from the work area via a shower has dried, it shall be wet-wiped again before being transferred past the shower.

Q. Transport the sealed container or skips to an EPA approved and certified waste disposal site. The Contractor shall provide the Owner with a signed certificate listing the quantity of materials delivered to the disposal site, a description of the location of the site, and a statement attesting to the fact that the site is an EPA and State approved disposal location. The signatures of the asbestos removal Contractor, transporter, and site operator must appear on the certificate. The Contractor shall ensure that the operator leaves damaged bags in the delivery containers and that the entire contaminated container is buried, however, sealed plastic bags may be dumped from the containers into the burial site and uncontaminated containers may be reused. The Contractor shall certify that any reused containers have not contained damaged or broken bags of asbestos or other asbestos-contaminated material.

R. Disposal of all asbestos waste shall be at a prearranged disposal site in accordance with regulations of the District of Columbia and OSHA Regulation 29 C.F.R. 1910.1001.

3.3 METHOD OF REMOVAL FOR GLOVEBAGS

S. The glovebag method may be appropriate for removing certain sections of pipe insulation. Negative pressure enclosures are not required if glovebags are installed according to manufacturer's recommendations.

T. Remove wetted asbestos material within the sealed glovebag in small sections. Glovebags are to be single use only.

U. Personal air monitoring of the glovebag worker shall be performed and air-monitoring results shall not exceed 0.1 f/cc.

V. In areas where the pipe and insulation are to be removed, the glovebag method shall (unless full containment) be used to remove sections of pipe insulation to allow for cutting of the pipe. The remaining intact asbestos insulation may be wrapped in 6-mil polyethylene to allow for removal and disposal of pipe and insulation together.

3.4 DECONTAMINATION OF WORK AREA

W. Replace pre-filter and the intermediate filter in the Air Filtration Device. Clean all surfaces of the Work Area, including the outside surface of critical barrier sheeting, tools, scaffolding and/or staging, by HEPA-filtered vacuuming, then damp cleaning and mopping. Do not dry-dust or dry-sweep. Continue cleaning until there is no visible dust, debris or residue on polyethylene sheeting and other surfaces.

X. Perform a complete visual inspection of all Work Area surfaces and contents. If any debris or residue is found, repeat the first cleaning and continue decontamination procedure from that point.

Y. Allow sufficient time for the Work Area to completely dry while operating HEPA filtered fan units. Maintain operation of negative pressure differential system in operation during the drying period.

Z. The QP shall conduct a visual inspection of the Work Area when the abatement and decontamination is complete and when the Contractor's supervisor requests such inspection.

AA. After the visual inspection, an approved lock down encapsulant shall be applied to all the surfaces in the Work Area. The encapsulant used shall not impede reinsulation. After sufficient drying time, determined by the QP, the final clearance can take place.

BB. Additional cleaning required after the first final cleaning will be performed at the expense of the contractor. Additional hours required by the QP will also be an expense paid for by the Contractor, as well as necessary repeat final air clearance analyses.

CC. After final air samples are found to meet clearance criteria, remove critical barriers and completely dismantle and remove Decontamination Area.

DD. Seal HEPA filtered AFDs with 6-mil polyethylene sheeting and duct tape to form a tight seal at intake and before unit is moved from the Work Area.

3.5 FINAL INSPECTION AND TESTING.

EE. After cleaning and decontamination of the workspace has been conducted, and if a high degree of cleanliness has been achieved, notify the QP that the workspace is ready for inspection and final testing. The QP will visually inspect each Work Area where such activity was conducted to determine whether the clean up has been properly completed and to detect any visible asbestos dust or contamination. The QP shall conduct a visual inspection of the Work Area when the abatement and decontamination is complete and when the Contractor's supervisor requests such inspection. The visual inspection will be conducted in compliance with ASTM E 1368-90, Standard Practice for Visual Inspection of Asbestos Abatement Projects.

FF. If the visual inspection does not reveal any dust or other signs of contamination, the final air monitoring will take place.

GG. Final air clearance testing shall be conducted by the QP using aggressive air sampling techniques in the Work Area in accordance with EPA 40 C.F.R. Part 763.90(i), (2, i) and Appendix A.

HH. For work areas that contain less than 260 linear feet, 160 square feet, or 35 cubic feet of ACM, Phase Contrast Microscopy (PCM) analysis will be performed in accordance with NIOSH Method 7400. Final test results shall show contamination levels not to exceed 0.01 f/cc when using PCM analysis. Air samples shall have a minimum volume of 1,200 liters per sample but may vary depending on size of Work Area and other variables.

II. For work areas that contain equal to or greater than 260 linear feet, 160 square feet, or 35 cubic feet of ACM, Transmission Electron Microscopy (TEM) analysis will be performed in accordance with NIOSH Method 7402. Final test results shall show contamination levels not to exceed 70 asbestos structures per millimeter squared. Air samples shall have a minimum volume of 1,200 liters per sample but may vary depending on size of Work Area and other variables.

JJ. If elevated airborne fiber counts are detected on clearance samples, the Contractor will be responsible for re-cleaning of the sampled area(s) at no additional cost or schedule impact to Owner. Additional testing will be performed following the re-cleaning to document that acceptable levels have been achieved. The Contractor will be responsible for fees and expenses related to retesting the area after re-cleaning.

END OF SECTION 020800

SECTION 020810

DISTURBANCE OF LEAD-CONTAINING PAINT AND ASSOCIATED DEBRIS INCIDENTAL TO GENERAL CONSTRUCTION/DEMOLITION ACTIVITIES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2	(1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
ANSI Z88.2	(1992) Respiratory Protection

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926.21	Safety Training and Education
29 CFR 1926.33	Access to Employee Exposure and Medical Records
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
29 CFR 1926.59	Hazard Communication
29 CFR 1926.62	Lead Exposure in Construction
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.103	Respiratory Protection
40 CFR 260	Hazardous Waste Management Systems: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Generators of Hazardous Waste
40 CFR 263	Transporters of Hazardous Waste
40 CFR 264	Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265	Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 745	Lead; Requirements for Lead-Based Paint Activities
49 CFR 172	Hazardous Materials, Tables, and Hazardous Materials Communications Regulations
49 CFR 178	Shipping Container Specification

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD Guidelines	(1995) Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing

UNDERWRITERS LABORATORIES INC. (UL)

UL 586	(1996) High-Efficiency, Particulate, Air Filter Units

1.2 DEFINITIONS

1.2.1 Action Level

Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8 hour period in an occupational/industrial environment.

1.2.2 Area Sampling

Sampling of lead concentrations within the lead control area and inside the physical boundaries that is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel.

1.2.3 Competent Person (CP)

As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations.

1.2.4 Contaminated Room

Room for removal of contaminated personal protective equipment (PPE).

1.2.5 Decontamination Shower Facility

That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.

1.2.6 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.

1.2.7 High Efficiency Particulate Air (HEPA) Filter Equipment

HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead-contaminated paint dust. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron or larger size particles.

1.2.8 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps.

1.2.9 Lead-Based Paint (LBP)

Paint or other surface coating that contains lead in excess of 0.7 milligram per centimeter squared or 0.5 percent by weight.

1.2.10 Lead-Based Paint Hazard (LBP Hazard)

Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, and lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

1.2.11 Lead-Containing Paint (LCP)

Lead-based paint or other similar surface coating containing lead or lead compound in excess of 0.06 percent by weight of the total nonvolatile content of the paint.

1.2.12 Lead Control Area

An enclosed area or structure, constructed as a temporary containment equipped with HEPA filtered local exhaust, which prevents the spread of lead dust, paint chips, or debris existing as a condition of lead-based paint removal operations. The lead control area is also isolated by physical boundaries to prevent unauthorized entry of personnel.

1.2.13 Lead Permissible Exposure Limit (PEL)

Fifty micrograms per cubic meter of air as an 8 hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula:

PEL (micrograms/cubic meter of air) = 400/No. Hours worked per day

1.2.14 Personal Sampling

Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8 hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 to 9 inches and centered at the nose or mouth of an employee.

1.2.15 Physical Boundary

Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel. As used in this section, "inside boundary" shall mean the same as "outside lead control area but inside boundary."

1.3 LEAD HAZARD AWARENESS AND SCOPE OF WORK

1.3.1 Lead-Based Paint

The Contractor shall assume that all surfaces shall contain Lead-Based Paint (LBP) or Lead Containing Paint (LCP). Based on the nature of the project, LBP abatement is not anticipated since disturbance of LBP is expected to be incidental to over-all renovation/demolition work.

The Contractors shall complete all demolition work in accordance with the requirements found in 29 CFR 1926.62. Submit documentation of compliance with this standard to The Owner prior to start-up of work, including an air monitoring plan, dust control measures, etc. All compliance sampling and other control measures for potential lead dust shall be addressed within exposure control and monitoring plan prepared by the Contractor. All compliance sampling shall be performed by individuals working under the direction of the Contractor’s Competent Person. Following completion of work, submit all monitoring documentation to the Contracting Officer. The Owner may elect to do independent sampling.

1.4 PERSONNEL PROTECTION

1.4.1 Equipment

The Contractor shall provide adequate personal protective equipment (PPE) to any employees working on lead coated surfaces if there is a potential for generation of airborne lead dust or fume (e.g., through grinding, cutting, sanding, etc.) above the Permissible Exposure Limit (29 CFR 1926.62). Note: The standard does not reference a specific level of lead in paint at which a hazard exists. Rather, OSHA defines airborne concentrations, and references specific types of work practices and operations from which a lead hazard may be generated (29 CFR 1926.62, paragraph d).

1.4.2 Exposure Monitoring

The Contractor should make allowances in the bid price for the cost of environmental and personnel monitoring, along with costs for provision of all other related services, monitoring, equipment, etc. needed to comply with requirements found within 29 CFR 1926.62. The Contractor shall be required to conduct personnel air monitoring to establish personal exposure levels. This monitoring information will be used by the Contractor to determine the levels of personnel protection and environmental controls (if necessary) required to be used by the Contractor for this contract. Monitoring shall be performed

under the direction of the Competent Person. The costs for PPE, monitoring, decontamination facilities, etc. shall be borne by the Contractor. The Contractor shall also be required to conduct air monitoring during the course of the project to document airborne lead levels.

1.5 WASTE DISPOSAL

It is expected that waste debris will be generated by this project, which may contain lead coated surfaces. The Contractor shall assume that all debris may be disposed of as non-hazardous waste. The Owner or their representative shall perform testing services to determine proper disposal, in accordance with EPA hazardous waste disposal requirements found in 40 CFR 260 - 264. The Contractor shall be responsible for disposal of all materials generated at the site. The Contractor is responsible for notifying all other parties who may receive this waste that it may have lead-coated surfaces.

PART 2 PRODUCTS

Section not used.

PART 3 EXECUTION

Section not used.

END OF SECTION 020810

SECTION 020840

PCB AND MERCURY REMOVAL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.1000	Air Contaminants
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR 261	Resource Conservation and Recovery Act
40 CFR 262	Generators of Hazardous Waste
40 CFR 263	Transporters of Hazardous Waste
49 CFR 172	Hazardous Materials, Table, and Hazardous Materials Communications Regulations
49 CFR 178	Shipping Container Specification

1.2 REQUIREMENTS

Removal and disposal of PCB containing light ballasts and associated mercury-containing lamps, in order to allow the demolition of 1D facility to occur.

1.2.1 Scope of Work

The Contractor will be responsible for having a valid EPA Identification Number site specific for the 1D facility. The Contractor will be the **GENERATOR** of all hazardous waste generated and be subject to regulations set forth by the United States Environmental Protection Agency. If the generation of hazardous waste is greater than 2,200 lbs in a month, the generator is considered a Large Quantity Generator. Generation of less than 2,200 lbs in a month is classified as a Small Quantity Generator. The Contractor will manage, handle, ship, and dispose of all hazardous waste in accordance with all applicable regulations.

The Contractor has the responsibility for determining actual quantities of materials to be removed and reviewing the scope of work. No additional contract price adjustments will be allowed due to variances between actual quantities and the estimated quantities listed herein

(unless otherwise specified in this document). The Contractor should allow under their base bid for the removal of all materials as described in the survey report and/or referenced in this specification.

The Contractor shall be responsible for removal of the following as part of the base bid:

A. PCB containing light ballasts (approximately 1,800)

B. Mercury containing fluorescent light lamps (approximately 2,000)

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

1.3 DEFINITIONS

1.3.1 Certified Industrial Hygienist (CIH)

An industrial hygienist who shall be certified by the American Board of Industrial Hygiene.

1.3.2 Leak

Leak or leaking means any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface.

1.3.3 Mercury-Containing Lamps

As used in this specification shall mean all fluorescent and high-intensity discharge (HID) lamps scheduled for demolition and/or removal as indicated in the Contract documents that:

a. Fails the TCLP test for mercury, or

b. According to the Manufacturer, would fail the TCLP test for mercury

c. By calculation of equivalent TCLP mercury level from total metal analysis would fail the TCLP test for mercury.

1.3.4 Polychlorinated Biphenyls (PCBs)

PCBs as used in this specification shall mean the same as PCBs, PCB containing lighting ballast, and PCB container, as defined in 40 CFR 761, Section 3, Definitions.

1.3.5 Spill

Spill means both intentional and unintentional spills, leaks, and other uncontrolled discharges when the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases.

1.3.6 Generator

Any person, by site, whose action or process produces hazardous waste identified or listed in [40 CFR part 261] or whose act first causes a hazardous waste to become subject to regulation.

1.4 QUALITY ASSURANCE

1.4.1 Regulatory Requirements

Perform PCB related work in accordance with 40 CFR 761. Perform mercury-containing lamps storage and transport in accordance with 40 CFR 262 and 40 CFR 263.

1.4.2 Training

All workers shall have training in accordance with 29 CFR 1910.140 (HAZWOPER). The instruction shall include: The dangers of PCB and mercury exposure, decontamination, safe work practices, and applicable OSHA and EPA regulations. The Owner or their representative shall review and approve the PCB and Mercury-Containing Lamp Removal Work Plans.

1.4.3 Regulation Documents

Maintain at all times one copy each at the office and one copy each in view at the job site of 29 CFR 1910.1000, 40 CFR 761, 40 CFR 262, 40 CFR 263 and of the Contractor removal work plan and disposal plan for PCB and for associated mercury-containing lamps.

1.5 SUBMITTALS

Submit two copies of the following documentation:

Certificates

Training Certification

PCB and Mercury-Containing Lamp Removal Work Plan

PCB and Mercury-Containing Lamp Disposal Plan

Closeout Submittals

Transporter certification of notification to EPA of their PCB waste activities and EPA ID numbers

Certification of Decontamination

Certificate of Disposal and/or recycling. Submit to The Owner before application for payment within 30 days of the date that the disposal of the PCB and mercury-containing lamp waste identified on the manifest was completed.

1.6 ENVIRONMENTAL REQUIREMENTS

Use special clothing:

a. Disposable gloves (polyethylene)

b. Eye protection

c. PPE

1.7 SCHEDULING

Notify The Owner 20 days prior to the start of PCB and mercury-containing lamp removal work.

1.8 QUALITY ASSURANCE

1.8.1 PCB and Mercury-Containing Lamp Removal Work Plan

Submit a job-specific plan within 20 calendar days after award of contract of the work procedures to be used in the removal, packaging, and storage of PCB-containing lighting ballasts and associated mercury-containing lamps. Include in the plan: Requirements for U.C. Personal Protective Equipment (PPE), spill cleanup procedures and equipment, eating, smoking and restroom procedures. Obtain approval of the plan by The Owner prior to the start of PCB and/or lamp removal work.

1.8.2 PCB and Mercury-Containing Lamp Disposal Plan

Submit two copies of a PCB and mercury-containing lamp Disposal Plan within 20 calendar days after award of contract. The PCB and Mercury-Containing Lamp Disposal Plan shall comply with applicable requirements of federal, state, and local PCB and RCRA waste regulations and address:

a. Estimated quantities of wastes to be generated, disposed of, and recycled.

b. Names and qualifications of each Contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location. Furnish two copies of EPA and state PCB and mercury-containing lamp waste permit applications and EPA identification numbers.

c. Names and qualifications (experience and training) of personnel who will be working on-site with PCB and mercury-containing lamp wastes.

d. Spill prevention, containment, and cleanup contingency measures to be implemented.

e. Work plan and schedule for PCB and mercury-containing lamp waste removal, containment, storage, transportation, disposal and or recycling. Wastes shall be cleaned up and containerize daily.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 WORK PROCEDURE

Furnish labor, materials, services, and equipment necessary for the removal of PCB containing lighting ballasts, associated mercury-containing fluorescent lamps, and high intensity discharge (HID) lamps in accordance with local, state, or federal regulations. Do not expose PCBs to open flames or other high temperature sources since toxic decomposition by-products may be produced. Do not break mercury containing fluorescent lamps or high intensity discharge lamps.

3.1.1 Work Operations

Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with 40 CFR 761, 40 CFR 262 40 CFR 263, and the applicable requirements of this section, including but not limited to:

a. Obtaining suitable PCB and mercury-containing lamp storage sites.

b. Notifying the Owner prior to commencing the operation.

c. Reporting leaks and spills to the Owner.

d. Cleaning up spills.

e. Inspecting PCB and PCB-contaminated items and waste containers for leaks and forwarding two copies of inspection reports to the Owner.

f. Maintaining inspection, inventory and spill records.

3.2 PCB SPILL CLEANUP REQUIREMENTS

3.2.1 PCB Spills

Immediately report to the Contracting Officer any PCB spills.

3.2.2 PCB Spill Control Area

Rope off an area around the edges of a PCB leak or spill and post a "PCB Spill Authorized Personnel Only" caution sign. Immediately transfer leaking items to a drip pan or other container.

3.2.3 PCB Spill Cleanup

40 CFR 761, subpart G. Initiate cleanup of spills as soon as possible, but no later than 24 hours of its discovery. Mop up the liquid with rags or other conventional absorbent. The spent absorbent shall be properly contained and disposed of as solid PCB waste.

3.2.4 Records and Certification

Document the cleanup with records of decontamination in accordance with 40 CFR 761, Section 125, Requirements for PCB Spill Cleanup. Provide two copies of test results of cleanup and certification of decontamination.

3.3 REMOVAL

3.3.1 Ballasts

As ballast is removed from the lighting fixture, inspect label on ballast. Ballasts without a “No PCB” label shall be assumed to contain PCBs and containerized and disposed of as required under paragraphs STORAGE FOR DISPOSAL and DISPOSAL. Ballasts with a “No PCB” label may be disposed of as normal construction debris.

3.3.2 Lighting Lamps

Remove lighting tubes/lamps from the lighting fixture and carefully place (unbroken) into appropriate containers (original transport boxes or equivalent). In the event of a lighting tube/lamp breaking, sweep and place waste in double plastic taped bags and dispose of as hazardous waste as specified herein.

3.4 STORAGE FOR DISPOSAL

3.4.1 Storage Containers for PCBs

49 CFR 178. Store PCB in containers approved by DOT for PCB.

3.4.2 Storage Containers for lamps

Store mercury-containing lamps in appropriate DOT containers. The boxes shall be stored and labeled for transport in accordance with 40 CFR 262 and 40 CFR 263.

3.4.3 Labeling of Waste Containers

Label with the following:

a. Date the item was placed in storage and the name of the cognizant activity/building.

b. "Caution Contains PCB," conforming to 40 CFR 761, CFR Subpart C. Affix labels to PCB waste containers.

c. Label mercury-containing lamp waste in accordance with 49 CFR 172, 40 CFR 262, and 40 CFR 263. Affix labels to all lighting waste containers.

3.5 DISPOSAL

Intact PCB ballasts and mercury containing lamps will be transported and disposed of by the Contractor. Broken or leaking ballasts/lamps will be treated as hazardous waste and disposed of by the Contractor according to all applicable regulations.

3.5.1 Identification Number

Federal regulations 40 CFR 761 and 40 CFR 263 require that generators, transporters, commercial stores, and disposers of PCB and mercury-containing waste posses U.S. EPA identification numbers. The contractor shall verify that the activity has a U.S. EPA generator identification number for use on the Uniform Hazardous Waste manifest. If not, the contractor shall advise the activity that it must file and obtain an I.D. number with EPA prior to commencement of removal work.

3.5.2 Transporter Certification

Comply with disposal and transportation requirements outlined in 40 CFR 761 and 40 CFR 263. Before transporting the PCB and lamp waste, sign and date the manifest-acknowledging acceptance of the PCB and mercury-containing waste from The Owner. Return two signed copies to The Owner before leaving the job site. Ensure that the manifest accompanies the PCB and lamp waste at all times. Submit transporter certification of notification to EPA of their PCB and lamp waste activities (EPA Form 7710-53).

3.5.2.1 Certificate of Disposal and/or Recycling

40 CFR 761. Certificate for the PCBs and PCB items, and lamps disposed shall include:

a. The identity of the disposal and or recycling facility, by name, address, and EPA identification number.

b. The identity of the PCB and lamp waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.

c. A statement certifying the fact of disposal and or recycling of the identified PCB and/or lamp waste, including the date(s) of disposal, and identifying the disposal process used.

d. A certification as defined in 40 CFR 761.

END OF SECTION 020840