ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE PURCHASING AGENT
2100 CLARENDON BOULEVARD, SUITE 500
ARLINGTON, VA 22201
(703) 228-3410

INVITATION TO BID NO. 20-257-ITB

HAZARDOUS MATERIALS ABATEMENT SERVICES

ELECTRONIC SEALED BIDS WILL BE RECEIVED BY ARLINGTON COUNTY VIA VENDOR REGISTRY. REGISTRATION IS NOT REQUIRED TO DOWNLOAD THE INVITATION TO BID (ITB). IN ORDER TO SUBMIT A RESPONSE TO THIS INVITATION TO BID, REGISTRATION IS REQUIRED. ELECTRONIC SEALED BIDS WILL BE RECEIVED ON JUNE 23, 2020 AT 1:00 P.M. NO RESPONSES WILL BE ACCEPTED AFTER THE BID DUE DATE AND TIME.

THERE IS A NON-MANDATORY PREBID CONFERENCE ON JUNE 8, 2020 at 10:00 AM.

Join PreBid Conference Microsoft Teams Meeting,
+1 347-973-6905 United States, New York City (Toll),
Conference ID: 234 819 866#

The Prebid Conference is to allow potential Bidders an opportunity to obtain clarification of the specifications and requirements of the solicitation. ATTENDANCE IS OPTIONAL. Minutes of the pre-bid conference will be recorded by the County and will be incorporated into the solicitation documents through an Addendum. Interested Bidders are encouraged to attend.

The County will conduct the public bid opening via Microsoft Teams Application (APP). Bidders interested in attending the public bid opening must download the APP and join the meeting via the Microsoft Teams APP and enable audio, video or both. The link to join the public bid opening is provided below:

PUBLIC BID OPENING ON JUNE 23, 2020 AT 1:00 PM:

Join Public Bid Opening via Microsoft Teams Meeting
+1 347-973-6905 United States, New York City (Toll)
Conference ID: 869 019 210#

NOTICE: ANY BIDDER ORGANIZED AS A STOCK OR NONSTOCK CORPORATION, LIMITED LIABILITY COMPANY, BUSINESS TRUST OR LIMITED PARTNERSHIP, OR REGISTERED AS A LIMITED LIABILITY PARTNERSHIP, MUST BE AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VIRGINIA PRIOR TO SUBMITTING A BID (REFER TO AUTHORITY TO TRANSACT BUSINESS SECTION OF THE SOLICITATION FOR FURTHER INFORMATION).

Arlington County reserves the right to reject any and all bids, cancel this solicitation, and waive any informalities as defined in the Arlington County Purchasing Resolution.

Arlington County, Virginia
Office of the Purchasing Agent

Tomeka D. Price, VCA
Procurement Officer
tprice@arlingtonva.us

TABLE OF CONTENTS

I. INFORMATION FOR BIDDERS

1. QUESTIONS AND ADDENDA

BIDDERS MUST BE REGISTERED IN VENDOR REGISTRY TO SUBMIT A QUESTION FOR THIS INVITATION TO BID.

All communications relating to this solicitation must be submitted online using Vendor Registry. For a question to be considered, the question must be entered in the Question Section of **ITB No. 20-257-ITB**. Prior to the award of a contract resulting from this solicitation, Bidders are prohibited from contacting any County staff other than those assigned to the Office of the Purchasing Agent.

QUESTIONS REGARDING THE ORIGINAL SOLICITATION MUST BE SUBMITTED BY JUNE 15, 2020, AT 5:00 PM EASTERN TIME TO BE CONSIDERED FOR AN ADDENDUM. ALL QUESTIONS WILL BE RESPONDED TO WITHIN VENDOR REGISTRY AND POSTED FOR ALL BIDDERS. THE SYSTEM WILL NOT ALLOW QUESTIONS TO BE POSTED AFTER THIS DATE AND TIME**.**

If any questions or responses require revisions to this solicitation, such revisions will be by formal Addendum only. Bidders are cautioned not to rely on any written, electronic, or oral representations made by any County representative or other person, including the County's technical contact, that appear to change any portion of the solicitation unless the change is subsequently ratified by a written Addendum to this solicitation issued by the Office of the Purchasing Agent.

2. PRE-BID CONFERENCE AND/OR SITE VISIT

A **Non-Mandatory** pre-bid conference will be held at 10:00 a.m., June 8, 2020 via the PreBid Conference Microsoft Teams Meeting to allow potential Bidders an opportunity to obtain clarification of the specifications and requirements of the solicitation. ATTENDANCE IS OPTIONAL. Minutes of the pre-bid conference will be recorded by the County and will be incorporated into the solicitation documents through an Addendum. Interested Bidders are, however, urged to attend.

3. INTEREST IN MORE THAN ONE BID AND COLLUSION

Reasonable grounds for believing that a Bidder is interested in more than one bid for a solicitation, including both as a Bidder and as a subcontractor for another Bidder, or that collusion exists between two or more Bidders, will result in rejection of all affected bids. However, an individual or entity acting only as a subcontractor may be included as a subcontractor on bids of two or more different Bidders. Bidders rejected under the above provision will also be disqualified if they respond to a re-solicitation for the same work.

4. TRADE SECRETS OR PROPRIETARY INFORMATION

Trade secrets or proprietary information that a bidder or contractor submits in connection with a procurement transaction may be exempted from public disclosure under the Virginia Freedom of Information Act ("VFOIA"). However, the bidder or contractor must invoke VFOIA protection clearly and in writing on the Bid Form for County review. The Bid Form must include at least the following: (1) the data or other materials sought to be protected and (2) specific reasons why the material is confidential or proprietary. It is the bidder's sole responsibility to defend such exemptions if challenged in a court of competent jurisdiction.

5. DEBARMENT STATUS

The Bidder must indicate on the Bid Form whether it or any of its principals is currently debarred from submitting bids to the County or to any other state or political subdivision and whether the Bidder is an agent of any person or entity that is currently debarred from submitting bids to the County or to any other state or political subdivision. An affirmative response may be considered grounds for rejection of the bid.

6. AUTHORITY TO TRANSACT BUSINESS

Any Bidder organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership must be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law. The proper and full legal name of the entity and the identification number issued to the Bidder by the Virginia State Corporation Commission must be included on the Bid Form. Any Bidder that is not required to be authorized to transact business in the Commonwealth must include in its bid a statement describing why the Bidder is not required to be so authorized. The County may require a Bidder to provide documentation that 1) clearly identifies the complete name and legal form of the entity and 2) establishes that the entity is authorized by the State Corporation Commission to transact business in the Commonwealth of Virginia. Failure of a Bidder to provide such documentation will be a ground for rejection of the bid or cancellation of any award. For further information refer to the Commonwealth of Virginia State Corporation Commission website at: www.scc.virginia.gov.

7. ARLINGTON COUNTY BUSINESS LICENSES

The successful Bidder must comply with the provisions of Chapter 11 ("Licenses") of the Arlington County Code, if applicable. For information on the provisions of that Chapter and its applicability to this solicitation, contact the Arlington County Business License Division, Office of the Commissioner of the Revenue, at 2100 Clarendon Blvd., Suite 200, Arlington, Virginia, 22201, tel. (703) 228-3060, or e-mail mailto: business@arlingtonva.us.

8. ESTIMATED QUANTITIES/NON-EXCLUSIVITY OF CONTRACTOR

The contract that will result from this solicitation will not obligate the County to purchase a specific quantity of items during the Contract Term. Any quantities that are included in the contract documents are the present expectations the County has for the period of the contract, and the County is under no obligation to the estimated quantity, or any, amount as a result of having provided this estimate or of having had any normal or otherwise measurable requirement in the past. The County may require more goods than the estimated annual amount, and any such additional quantities will not give rise to any claim for compensation over the unit prices and/or rates specified in the contract.

The items covered by this contract may be or become available under other County contract(s), and the County may determine that it is in its best interest to procure the items through such other contract(s). The County does not guarantee that the selected contractor will be the exclusive provider of the goods covered by the resulting contract.

9. BID FORM SUBMISSION

The Bidder must submit its bid on the form provided in this solicitation. The Bid Form must be signed. The Bid Form must be uploaded electronically via Vendor Registry no later than the date and time specified in this solicitation. The Vendor Registry system will not accept responses after the close date and time.

The Contractor/Vendor name on the electronic bid submittal shall be the same as the Contractor/Vendor name as registered in Vendor Registry for the upload to be considered a valid response. ONLY ELECTRONIC SUBMISSION IS ALLOWED, ANY BIDS SUBMITTED VIA ANY MEANS OTHER THAN VENDOR REGISTRY WILL NOT BE ACCEPTED. **Arlington County is not responsible for late submissions, missed Addendums, or questions not submitted before the end date and time.**

Timely submission is solely the responsibility of the Bidder. A bid may be rejected if the Bid Form is not signed in the designated space by a person authorized to sign on behalf of the Bidder.

Modification or additions on the Bid Form may be cause for rejection of the bid; however, Arlington County reserves the right to decide, in its sole discretion, whether changes to the Bid Form is a reason for rejection. As a precondition to bid acceptance, Arlington County may request the bidder to withdraw or modify any such modifications or additions, if it

does not affect quality, quantity, price, or delivery. Bids and all documents uploaded/submitted to Arlington County by a bidder become the property of the County upon receipt.

10. BIDDER CERTIFICATION

Submission of a signed Bid Form is certification by the respective bidder that it is registered with the Virginia State Corporation Commission, if applicable, it is the legal entity authorized to enter into an agreement with the County, and that it will accept any award made to it as a result of the submission.

11. ERRORS IN EXTENSION

If the unit price and the extension price differ, the unit price will prevail.

12. EXCEPTIONS AND NONCONFORMING TERMS AND CONDITIONS

A bid must conform to the terms and conditions of this solicitation and may not contain alternate terms and conditions. The County may permit a Bidder to withdraw any alternate terms or conditions before the County's determination of nonresponsiveness.

13. DISCOUNTS

Discounts for the County's on-time payment of invoices are allowed, but the County will not consider the discount when evaluating bid prices or awarding the contract.

14. NEW MATERIAL

Unless the solicitation specifically allows it, all offered goods, materials, supplies and components must be new, not used or reconditioned, and must be current production models. If the Bidder believes that used or reconditioned goods, materials, supplies or components will be in the County's best interest, the Bidder must notify the County in writing of the reason(s) at least ten business days before the bid deadline. If the Purchasing Agent authorizes the bidding of used or reconditioned goods, materials, supplies or components, such approval will be communicated to the Bidders in an Addendum to the solicitation.

15. BIDDERS' RESPONSIBILITY TO INVESTIGATE

Before submitting a bid, each bidder must make all investigations necessary to ascertain all conditions and requirements affecting the full performance of the contract and to verify any representations made by the County upon which the bidder will rely. No pleas of ignorance of such conditions and requirements will relieve the successful bidder from its obligation to comply in every detail with all provisions and requirements of the contract or will be accepted as a basis for any claim for any monetary consideration on the part of the successful bidder.

16. BIDDER'S RESPONSIBILITY FOR ERRORS OR OMISSIONS IN DOCUMENTS

Each Bidder is responsible for having determined the accuracy and/or completeness of the solicitation documents, including electronic documents, upon which it relied in making its bid, and has an affirmative obligation to notify the Arlington County Purchasing Agent immediately upon discovery of an apparent or suspected inaccuracy or error in the solicitation documents.

17. QUALIFICATION OF BIDDERS

In order to be considered responsible and responsible, Bidders shall have the experience described below, and provide the supporting documentation as instructed.

Company Qualifications: Bidders shall have 5 years of experience in HAZMAT surveying, monitoring and assessment. Bidder shall provide verification that asbestos and lead inspectors have received training for permit-required confined

space entry per OSHA standard 29 CFR 1910.146 with their bid submission. The experience shall be work of similar size and scope.

Bidders shall provide written Quality Assurance and Quality Control (QA/QC) program proposed by their laboratory.

Project Experience: Bidders shall provide a list of projects, of similar size and scope, that have been executed during the past five (5) years for consideration of application to the below individual requirements. Each project shall meet all of these requirements and bidders can submit separate projects for each requirement.

- Have completed five (5) HAZMAT surveying, monitoring and assessment projects within the past five years.
- Have completed at least one (1) HAZMAT surveying, monitoring and assessment projects for a local, state, or federal government agency.

Bidders' list shall include the following information to show compliance with the experience criteria:

- Project Name
- Project description and scope of work
- Final contract value

Bidders' shall submit the bidder qualification matrix (Attachment B) and complete with as much detail as required to confirm you meet each qualification.

Staffing Qualifications: All key personnel proposed for this project must have experience as designated key personnel in similar size and type of projects. The following are considered key personnel:

- Designated Virginia Department of Professional and Occupational Regulation (DPOR) licensed asbestos inspector shall have a minimum of two (2) years' experience in their respective fields
- Designated DPOR licensed asbestos management planner
- Designated DPOR licensed asbestos project designer shall have a minimum of two (2) years' experience in their respective fields
- Designated DPOR licensed asbestos project monitor shall have a minimum of two (2) years' experience in their respective fields
- Designated DPOR licensed lead inspector shall have a minimum of two (2) years' experience in their respective fields
- Designated DPOR licensed risk assessor shall have a minimum of two (2) years' experience in their respective fields
- Designated DPOR licensed project designer shall have a minimum of two (2) years' experience in their respective fields
- Designated Project Manager(s) shall have a minimum of five (5) years HAZMAT project management experience
- Designated Indoor Air Quality and Indoor Environmental Air Quality abatement personnel shall have a minimum of two (2) years' experience in their respective fields
- Designated Mold/Mildew abatement personnel shall have a minimum of two (2) years' experience in their respective fields

Designated means that there will be one primary identified person performing that role. That person will not be changed without prior approval from the County. Designated does not mean fulltime.

In addition, the Purchasing Agent may require a Bidder to demonstrate that it has the necessary facilities, ability and financial resources to furnish the materials or goods specified herein. A Bidder may also be required to provide past history and references.

18. BID WITHDRAWAL PRIOR TO BID OPENING

No bid can be withdrawn after it is filed with the Bid Clerk unless the bidder makes a request in writing to the Purchasing Agent prior to the time set for the opening of bids.

19. WITHDRAWAL OF BID FROM CONSIDERATION AFTER BID OPENING

After the opening of a bid, a bidder may withdraw its bid from consideration if the price of the bid is substantially lower than other bids due solely to a mistake therein, provided the bid is submitted in good faith, the mistake is a clerical mistake as opposed to a judgment mistake, and is actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, which unintentional error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. No partial withdrawals of bids will be permitted after the time and date set for the bid opening. The bidder must give notice in writing to the Arlington County Purchasing Agent of a claim of right to withdraw a bid and provide all original work papers, documents and other materials used in the preparation of the bid sought to be withdrawn, within two (2) business days after the date of bid opening. A bid may also be withdrawn if the County fails to award or issue a notice of intent to award the bid within ninety (90) days after the date fixed for opening bids.

20. METHOD OF AWARD

Arlington County will award this solicitation to the lowest responsive and responsible bidder. Lowest Bidder will be determined by the Grand Total of Sections A, B, and C on the Bid Form.

21. INFORMALITIES

The County reserves the right to waive minor defects or variations from the exact requirements of the solicitation in a bid insofar as those defects or variations do not affect the price, quality, quantity, or delivery schedule of the goods being procured. If insufficient information is submitted for Arlington County to properly evaluate a bid or a bidder; the County may request such additional information after bid opening, provided that the information requested does not change the price, quality, quantity, or delivery schedule for the goods being procured.

22. INSURANCE REQUIREMENTS

Each bidder must be able to demonstrate proof of the specific coverage requirements and limits applicable to this solicitation. If the bidder is not able to do so, it may propose alternate insurance coverage for consideration by the County. Written requests for consideration of alternate coverage must be received by the County Purchasing Agent at least 10 working days prior to bid due date. If the County permits alternate coverage, an amendment to the Insurance Checklist will be issued prior to the time and date set for receipt of bids.

23. NOTICE OF DECISION TO AWARD

When the County has made a decision to award a contract(s), the County will post a Notice of Award or Intent to Award to Vendor Registry.

24. EXPENSES INCURRED IN PREPARING BID

The Bidder is responsible for all expenses related to its bid.

25. RIDER CLAUSE

A. **Extension to Other Jurisdictions**

The County extends the resultant contract(s), including pricing, terms and conditions, to all public entities under the jurisdiction of the United States of America and its territories.

B. **Inclusion of Governmental & Nonprofit Participants**
Eligible entities include but are not limited to private schools, parochial schools, non-public schools such as charter schools, special districts, intermediate units, non-profit agencies providing services on behalf of government, and/or state, community and/or private colleges/universities.

C. **Notification and Reporting**
The contractor must notify the issuing jurisdiction of entities that use any contract resulting from this solicitation and to provide usage information as requested. The contractor will provide a copy of the solicitation and resultant contract documents to any requesting jurisdiction or entity.

D. **Contract Agreement**
The contractor may be required by a using jurisdiction to enter into a separate contract containing general terms and conditions unique to that jurisdiction.

26. NEGOTIATIONS WITH LOWEST RESPONSIVE AND RESPONSIBLE BIDDER

If the bid by the lowest responsive and responsible bidder exceeds available funds, the County reserves the right to negotiate with the apparent low bidder to obtain an acceptable price. Negotiations with the apparent low bidder may involve discussions of reduction of quantity, quality, or other cost saving mechanisms. The final negotiated contract shall be subject to final approval of the County, in its sole discretion.

27. ELECTRONIC SIGNATURE

If awarded, the Bidder will be required to sign the final Agreement electronically through the County's e-signature solution, DocuSign.

II. SCOPE OF SERVICES

The purpose of this solicitation is the procurement of hazardous material abatement services. The services include, but is not limited to, environmental abatement-related services involving lead-containing materials (LCMs), asbestos-containing materials (ACMs), fluorescent fixtures, polychlorinated biphenyls (PCBs), mercury-containing lamps (MLs), mold testing and Indoor Air Quality (IAQ), Indoor Environmental Quality (IEQ) and other regulated building components. All work shall be performed by the Contractor except for laboratory analysis, which shall be performed by a qualified laboratory subcontractor if necessary. The Contractor shall work and cooperate with the County's Abatement Contractor, an independent contractor chosen by the County to perform abatement/removal services.

Arlington County currently owns or leases approximately 190 buildings of varied age and condition. There is a constant need for a wide range of hazardous materials abatement services. The County does not maintain a schedule for building renovations; therefore, it is impossible to estimate the project volume. It is anticipated, however, that under this Contract the Contractor's services will be requested primarily as a result of:

- hazardous materials being exposed or encountered during routine maintenance,
- environmental building survey being a part of regulatory requirements for programs in which the County participates, and that may require building inspection certifications, or
- the requirement of conducting an environmental building survey prior to commencing construction or renovation.

The Contractor shall provide the necessary personnel, equipment, materials, written reports, correspondence, administration and any incidentals for assigned County abatement-related work.

GENERAL

The Contractor shall:

- Provide abatement project-related services, including, but is not limited to, initial environmental conditions assessment, cost estimating, monitoring, sampling, attending meetings, documentation, providing recommendations on abatement options, management alternatives, environmental laws and regulations compliance, and technical issues;

- Provide sampling and assessment of suspect regulated materials including but is not limited to asbestos-containing materials (ACMs), lead-containing materials (LCMs), Polychlorinated biphenyl (PCB) containing Fluorescent Light Ballasts and Fluorescent Fixture - Mercury Vapor Lamps (MVL) in buildings;

- Complete environmental building surveys for buildingspreviously surveyed for asbestos;

- Perform roof asbestos surveys;

- Obtain permits as required by Virginia State Building Code, https://www.iccsafe.org/advocacy/adoptions-map/virginia/;

- Upon request, review and revise the current County Abatement Master Specifications (Attachment A) to the most current Virginia Occupational Safety and Health Administration (VOSHA) standards;

- Perform testing and evaluation procedures for mold, indoor air quality and indoor environmental quality assessments. Testing protocol shall be consistent with those of U.S EPA's program office in Washington, D.C. A formal report will be provided to the County and a corrective action plan, if needed included on the report for implementation; and

- Provide electronic submission of survey reports for each project completed to the County Project Officer or designee.

The scope of work will NOT include:

- Occupational Safety and Health Administration (OSHA)- required sampling for abatement contractor's personnel on County projects;

- Repair surface finishes damaged by sampling, except to temporarily seal sample area.

DETAILED SCOPE OF SERVICES

Abatement Project Monitoring:

The Contractor shall perform all tasks as outlined in the County Abatement Master Specification (Attachment A).

The Contractor's duties and functions shall be to ensure that the work performed on County property complies with the project specifications and adhering to work practices in accordance with all applicable federal, state and local regulations.

Abatement Project Fee Proposals:

For all abatement projects the Contractor shall provide a comprehensive itemized project fee proposal, at unit prices provided on the Bid Form. Each fee proposal shall identify services, estimated hours, fees and number of days to complete, for any proposed work assignment, including both direct and indirect costs for any or all of the following:

- services provided by the Contractor,
- cost estimate for Abatement Contractor work,
- specification to current VOSH standards, and
- abatement monitoring and reports.

Upon receiving the County's request abatement services, the Contractor shall submit the fee proposal to the County Project Officer or designee within ten (10) business days. If the project is determined by the County in its sole discretion to be an emergency, or if other work which cannot be delayed is being performed at the site, the fee proposal shall be provided to the County within three (3) business days of the County's request, at no additional cost to the County.

The County reserves the right to accept the fee proposal and authorize the Contractor to proceed, reject the fee proposal, or solicit another vendor to perform the proposed work if it is in the best interest of the County. Upon acceptance of the Contractor's proposal and the issuance of a valid County Purchase Order, the Contractor shall immediately proceed with the work assignment, and invoice the County upon completion at contract unit prices. Work that exceeds the proposal shall not be billed, unless authorized by the County Project Officer or designee in writing in advance of the work.

Project-specific specifications tailoring:

The Contractor shall tailor the County's Abatement Master Specifications (Attachment A) for each abatement project. A licensed project designer shall electronically submit the proposed changes to the County Project Officer or designee for approval.

For projects where the County prepared changes to the Master Specifications, a licensed project designer shall review the amended document and return it electronically to the Project Officer or designee with any further suggestions.

Sampling:
Sample collection, analysis and transportation services shall comply with all applicable regulations, as well as Virginia state and federal approved standards in effect at the time the service is performed.

The Contractor is responsible for the retention of a laboratory to perform various sample analysis testing under this Contract. The Contractor's laboratory shall maintain a written quality assurance and quality control (QA/QC) program that has been approved by the County. The QA/QC program shall include transport, laboratory, and data components. The QA/QC program shall be designed to assure that handling and transport procedures do not affect the samples' quality or influence their analyses.

Environmental surveys of County buildings:
The Contractor shall provide environmental building surveys as requested by the County. Each survey shall identify and quantify interior and exterior material, as applicable per work assignment, documenting any potential adverse environmental health conditions or exposure sources, which may require special management and/or disposal during renovation anddemolition.

Each survey shall include:

1) Verification of existing information concerning asbestos-containing materials and sampling of any previously suspectACMs. Each survey report shall meet Asbestos Hazard EmergencyResponse Act (AHERA) standards and include quantities of both friable and non-friable ACMs, their condition assessment and recommendations for management. The survey report shall note the presence and condition of Category 1 Regulation ACMs (RACMs), and recommend which of them may be left in place during renovation or demolition;

2) Complete lead-based paint survey using X-Ray Fluorescence(XRF) and paint chip samples collected for laboratory analysis, if necessary, to clarify the XRF data;

3) Sampling and analysis of drinking water for lead content;

4) Inventory of fluorescent fixtures with:
   a) An exact quantity of lamps (tubes),
   b) An estimate of total quantity of polychlorinated biphenyl (PCB)-containing ballasts based on random visual examination of ten percent (10%) of theballasts,
   c) Mercury Vapor Lamps

5) Radon gas sampling and analysis, using charcoal absorption screening test kits exposed for approximately three (3) daysunder normal building conditions.

Master Specifications revisions:
Upon any changes in state or federal legislature, or as any other need arises, the Contractor shall, with prior written authorization of the Project Officer or designee, revise the County's Abatement Master Specifications (Attachment A) to ensure that they incorporate the most current applicable legislation and abatement procedures. The Contractor shall advise the County when such revisions are recommended. Recommended changes shall be submitted to the County Project Officer or designee electronically. Upon County approval, the changes will be incorporated into the Arlington County Abatement Master Specifications.

Abatement project management reports:
The Contractor shall prepare a written report at the completion of each assigned abatement project that contains all documentation compiled during the project. This documentation shall contain, at a minimum, an executive summary, a discussion of all significant events occurring during theproject, original copies of all sampling analysis sheets, the name and signature of the person conducting clearance samples, daily log sheets, and work area sign-in and sign-out sheets.

All project reports and invoices shall be submitted electronically in Microsoft Office format.

Deadlines:
For purposes of this section, "on-site work" refers to work requiring site visits on property owned, leased, or intended for acquisition by the County. "Off-site work" refers to all work performed at other locations, such as the Contractor's offices. Deadlines for electronic submission of all project reports and invoices to the County Project Officer or designee shall be in calendar days, as follows:

- For projects involving on-site work: fourteen (14) days from dateof last on-site work;
- For projects involving off-site work only, such as providing thelead abatement master specification: twenty-one (21) days from receipt of work order;
- For certifications for demolition/renovation permit applications, in conjunction with abatement projects: three (3) days following the last waste removal from the site;
- For abatement contractor submittal review, in conjunction with abatement projects: three (3) days following receipt ofsubmittal(s); and
- For abatement project design (tailoring existing Master Specifications): fourteen (14) days from the receipt of workorder.

Overtime Pay:
The County retains the right to require the Contractor's employees to work additional hours based on the project needs. Work performed Monday through Friday between the hours of 7:00 am and 5:00 pm shall be paid using the regular pay rate provided in the Bid Form. Overtime pay will be applied to any hours worked outside of the above specified hours, to include, evenings, weekends and Holidays, and will be calculated using the hourly rates provided in the Bid Form multiplied by 1.5.

Regulatory compliance:
The Contractor's advice and recommendations provided to the County shall be in compliance with all applicable Federal, State and Local regulations.

Where regulations differ, the Contractor shall advise compliance with the most stringent applicable regulation. If these regulations change, or are under a legislative proposal process, the Contractor shall immediately notify the County of all pertinent details in writing. If no regulatory standard exists which specifically pertains to the County, the Contractor shall advise the most "state of the art" industry standard known at the time and offer other alternative standards/approaches. Lead-related work shall comply with the most current Virginia Lead-based Paint Activities Regulations.

CONTRACTOR STAFF QUALIFICATIONS
The Contractor shall identify and utilize a project team qualified to maintain a level of service that meets the requirements of this solicitation. Project management shall place emphasis oncompleteness and accuracy of reports, technical quality

of work, regulatory complianceand adherence to project schedules and budgets. The project team shall include a Principal of the firm, Project Manager, personnel licensed to perform the work assigned, and necessary support staff, as outlined below.

- A Contract Manager shall be assigned to the Contract within ten (10) days of contract award. The Contract Manager shall be experienced in project management, supervise employees, knowledgeable in all aspects of hazardous materials abatement services and have the ability to troubleshoot problems quickly and consult with the County's Project Officer about remedies. The Contract manager shall be responsible for quality control and may be required to meet with the County Project Officer for progress meetings and site tours.

  The Contract Manager's hours are not billable to the Contract and shall be considered Contractor overhead.

- A Project Manager shall be familiar with all aspects of ACM, LCM, PCB containing fluorescent ballasts, and Fluorescent Fixture-mercury vapor lamp (MVL) inspection, project design, management planning, risk assessment and abatement operations to include Indoor Air Quality and Indoor Environmental Quality, mold remediation and has leadership and management capabilities proven in previous projects. The Project Manager shall:

  - have a minimum of five (5) years of experience in a HAZMAT project management role.
  - serve as the Contractor's primary contact person for the contract and shall manage and be responsible for the performance of the Contractor's entire field, office and laboratory staff as required.
  - review all reports.
  - be readily accessible by telephone and e-mail.
  - be permanently assigned throughout the duration of the Contract. However, if a replacement is necessary, then the newly assigned Project Manager must be approved by the County.

- The Contractor shall have available adequate, qualified staff to respond to the County's needs, including weekend work, 24 hour/day work, multiple projects running concurrently, emergencies, rush jobs, and projects which may occur for extended periods of time. The personnel resources available for this Contract shall include a minimum of one (1) employee licensed by the Virginia Department of Professional and Occupation Regulation within each of the below categories:

  - asbestos inspector
  - asbestos management planner
  - asbestos project designer
  - asbestos project monitor
  - lead inspector
  - lead risk assessor
  - lead project designer
  - Indoor air quality specialist

- All personnel assigned to the Contract shall have at least two (2) years of experience in the type of work performed. All personnel assigned to the Contract shall maintain Environmental Protection Agency (EPA)-required training and Virginia-required licensure to perform the work.

- Project Monitors shall also be certified in on-site phase contrastmicroscopy (PCM) reading procedures and shall have attended PCB awareness training.

- All Project Monitors and Inspectors shall be certified for working in confined spaces, as defined by the Occupational and Safety Hazards Administration (OSHA).

- The Contractor may not replace key personnel identified in its bid, including the approved Project Manager, without the County's written approval. The Contractor must submit any request to remove or replace key personnel or subcontractors to the County Project Officer at least 15 calendar days in advance of the proposed action. The request must contain a detailed justification, including identification of the proposed replacement and his or her qualifications.

  If the approved Project Manager must be absent for an extended period, the Contractor must provide an interim Project Manager, subject to the County's written approval.

  If the approved Project Manager resigns or is terminated by the Contractor, the Contractor will replace the Project Manager with an individual with similar qualifications and experience, subject to the County's written approval.

INFORMATION PROVIDED BY THE COUNTY FOR EACH PROJECT:

- For environmental building survey projects: a copy of the existing asbestos survey, abatement records (if available), and manufacturer's specifications for any newly-installed building materials;

- Basic project site information, such as overall square footage,floor plans, year built, etc.; and

- Upon request: a copy of the most currentarchitectural/engineering drawings for the project sites, including mechanical and plumbing sheets, if available.

FOLLOWING THIS PAGE IS THE AGREEMENT THAT WILL BE ENTERED INTO BETWEEN THE COUNTY AND THE CONTRACTOR. THE AGREEMENT IS PART OF THIS SOLICITATION. THIS AGREEMENT IS SUBJECT TO REVIEW BY THE COUNTY ATTORNEY PRIOR TO BEING SUBMITTED FOR CONTRACTOR'S SIGNATURE.

III. AGREEMENT AND CONTRACT TERMS AND CONDITIONS

ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE PURCHASING AGENT
SUITE 500, 2100 CLARENDON BOULEVARD
ARLINGTON, VA 22201

AGREEMENT NO. 20-257-ITB

THIS AGREEMENT is made, on_____, between ____*Contractor's name*___, _____*Contractor's address* ("Contractor") a _____*name of state*_____ *type of entity* authorized to do business in the Commonwealth of Virginia, and the County Board of Arlington County, Virginia. The County and the Contractor, for the consideration hereinafter specified, agree as follows:

1. CONTRACT DOCUMENTS

The "Contract Documents" consist of this Agreement, bid of the successful Bidder (hereinafter "Contractor") and Arlington County (hereinafter "County") Invitation to Bid No. 20-257-ITB.

The Contract Documents set forth the entire agreement between the County and the Contractor. The County and the Contractor agree that no representative or agent of either party has made any representation or promise with respect to the parties' agreement that is not contained in the Contract Documents. The Contract Documents may be referred to below as the "Contract" or the "Agreement".

2. SCOPE OF WORK

The Contractor agrees to perform the services described in the Contract Documents (the "Work"), more particularly described in the Scope of Services included with the Invitation to Bid. The primary purpose of the Work is to provide hazardous material abatement services, including on-site monitoring of abatement contractor, sampling and related services. The Contract Documents set forth the minimum work estimated by the County and the Contractor to be necessary to complete the Work. It will be the Contractor's responsibility, at its sole cost, to provide the services set forth in the Contract Documents and sufficient services to fulfill the purposes of the Work. Nothing in the Contract Documents limits the Contractor's responsibility to manage the details and execution of the Work.

3. PROJECT OFFICER

The performance of the Contractor is subject to the review and approval of the County Project Officer, who will be appointed by the Director of the Arlington County department or agency requesting the Work under this Contract.

4. CONTRACT TERM

Time is of the essence. The Work will commence on _____, 20____ and must be completed no later than _____20 ____ ("Initial Contract Term"), subject to any modifications provided in the Contract Documents. Upon satisfactory performance by the Contractor the County may, through issuance of a unilateral Notice of Award, authorize continuation of the Agreement under the same contract prices for not more than four (4) additional 12-month periods, from _____, 20____ to _____, 20____ (each a "Subsequent Contract Term"). The Initial Contract Term and any Subsequent Contract Term(s) are together the "Contract Term".

5. CONTRACT PRICING

Unless otherwise provided in the Contract Documents, the Contractor shall provide the goods and services covered in the County's Invitation to Bid No. 20-257-ITB at the prices provided in the bid of the Contractor.

6. CONTRACT PRICING WITH OPTIONAL PRICE ADJUSTMENTS

The Contract Amount/unit price(s) will remain firm until _____ ("Price Adjustment Date"). To request a price adjustment, the Contractor or the County must submit a written request to the other party not less than 90 days before the Price Adjustment Date. Adjustments to the Contract Amount/unit price(s) will not exceed the percentage of change in the U.S. Department of Labor Consumer Price Index, All Items, Unadjusted, Urban Areas ("CPI-U") for the 12-month period ending in _____ of each year of the Contract.

Any Contract Amount/unit price(s) that result from this provision will become effective the day after the Price Adjustment Date and will be binding for 12 months. The new Price Adjustment Date will be 12 months after the price adjustment.

If the Contractor and the County have not agreed on a requested adjustment by 30 days before the Price Adjustment Date, the County may terminate the Contract, whether or not the County has previously elected to extend the Contract's term.

7. PAYMENT TERMS

The Contractor must submit invoices to the County's Project Officer, who will either approve the invoice or require corrections. Each invoice must certify that the invoice submitted is a true and accurate accounting of the work performed and goods and/or services provided and must be signed and attested to by the Contractor or authorized designee. The County will pay the Contractor within 45 days after receipt of an invoice for completed work that is reasonable and allocable to the Contract and that has been performed to the satisfaction of the Project Officer. The number of the County Purchase Order pursuant to which goods or services have been delivered or performed must appear on all invoices.

If the County makes a partial payment, it may retain 5% of the estimate upon which the partial payment is based until completion and final acceptance of the Work.

8. PAYMENT OF SUBCONTRACTORS

The Contractor is obligated to take one of the two following actions within seven days after receipt of payment by the County for work performed by any subcontractor under this Contract:

a. Pay the subcontractor for the proportionate share of the total payment received from the County attributable to the work performed by the subcontractor under this Contract; or

b. Notify the County and the subcontractor, in writing, of the Contractor's intention to withhold all or a part of the subcontractor's payment, with the reason for nonpayment.

The Contractor is obligated to pay interest to the subcontractor on all amounts owed by the Contractor to the subcontractor that remain unpaid after seven days following receipt by the Contractor of payment from the County for work performed by the subcontractor under this Contract, except for amounts withheld as allowed in subsection b., above. Unless otherwise provided under the terms of this Contract, interest will accrue at the rate of 1% per month.

The Contractor must include in each of its subcontracts, if any are permitted, a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

The Contractor's obligation to pay an interest charge to a subcontractor pursuant to this section may not be construed to be an obligation of the County. A Contract modification may not be made for the purpose of providing reimbursement

for such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

9. NO WAIVER OF RIGHTS

The County's approval or acceptance of or payment for any goods or services under this Contract will not waive any rights or causes of action arising out of the Contract.

10. NON-APPROPRIATION

All payments by the County to the Contractor pursuant to this Contract are subject to the availability of an annual appropriation for this purpose by the County Board of Arlington County, Virginia ("Board"). In the event that the Board does not appropriate funds for the goods or services provided under this Contract, the County will terminate the Contract, without termination charge or other liability to the County, on the last day of the fiscal year or when the previous appropriation has been spent, whichever event occurs first.

11. ESTIMATED QUANTITIES/NON-EXCLUSIVITY OF CONTRACTOR

This Contract does not obligate the County to purchase any services during the Contract Term.

The County does not guarantee that the Contractor will be the exclusive provider of the services covered by this Contract. The services covered by this Contract may be or become available under other County contract(s), and the County may determine that it is in its best interest to procure the services through those contract(s).

12. COUNTY PURCHASE ORDER REQUIREMENT

County purchases are authorized only if the County issues a Purchase Order in advance of the transaction, indicating that the ordering County agency has sufficient funds available to pay for the purchase. If the Contractor provides goods or services without a signed County Purchase Order, it does so at its own risk and expense. The County will not be liable for payment for any purchases made by its employees that are not authorized by the County Purchasing Agent.

13. WARRANTY

The Contractor guarantees against and will correct at its expense factory defects that occur during the manufacturer's standard warranty period. The Contractor will provide all manufacturers' warranties at the time of delivery.

All work is guaranteed by the Contractor against defects resulting from the use of inferior or faulty materials or workmanship for one (1) year from the date of final acceptance of the work by the County. No date other than the date of final acceptance shall govern the effective date of the Guaranty, unless that date is agreed upon by the County and the Contractor in advance and in a signed writing.

14. DAMAGE TO PROPERTY

Any damage, as determined by the Project Officer, to the real or personal property, whether owned by the County or others, resulting from the Work performed under this Contract shall be timely repaired or replaced to the County's satisfaction at the Contractor's expense. The County will perform the repairs unless the County agrees that such repairs will be made by the Contractor. Any such Contractor repairs will be made within ten (10) days of the date of damage to the satisfaction of the County. All costs of the repair performed by the County shall be deducted from the Contractor's final payment.

15. CLEANING UP

The Contractor shall remove, as frequently as necessary, all refuse, rubbish, scrap materials and debris from any and all work sites to the extent that the trash is the result of the Contractor's operations, to the end that any and all work sites shall present a neat, orderly, and workmanlike appearance at all times. At completion of the Work, but before final

acceptance, the Contractor shall remove all surplus material, falsework, temporary structures including foundations thereof, and debris of every nature resulting from the Contractor's operations or resulting from any activity on the site related to the Contractor's operations and put the site in a neat, orderly condition; if the Contractor fails to do so, the County shall have the right to remove the surplus material, falsework, temporary structures including foundations thereof, and debris, put the site in a neat, orderly condition, and charge the cost to the Contractor. The County shall be entitled to offset such cost against any sums owed by the County to the Contractor under this Contract.

16. DISPOSAL OF PACKING MATERIALS, TRASH AND DEBRIS

The Contractor must, at its expense and without using any County waste containers, immediately remove and legally dispose of off-site all packing materials, trash and debris ("Waste"). Otherwise, the County will contract a third party to dispose of the Waste and will deduct the expense from the final payment to the Contractor.

The County will deduct from the final payment the expense to repair any damage to County-owned or-controlled property that the Contractor or its agents cause, unless the County agrees that the Contractor can make the repairs, in which case the Contractor must make the repairs at its expense within ten days of the damage and to the satisfaction of the County.

17. OSHA REQUIREMENTS

The Contractor certifies that all material supplied or used under this Contract meets all federal and state Occupational Safety and Health Administration ("OSHA") requirements. If the material does not meet the OSHA requirements, the Contractor will bear all costs necessary to bring the material into compliance.

18. HAZARDOUS MATERIALS

The Contractor must comply with all federal, state, and local laws governing the storage, transportation, and use of toxic and hazardous materials. The County is subject to the Hazard Communication Standard, 29 CFR § 1910.1200 ("Standard"). The Contractor will provide, no later than delivery or first use of the materials, Material Safety Data Sheets ("MSDS") for all hazardous materials supplied to the County or used in the performance of the Work. The Contractor will also ensure that all shipping and internal containers bear labels that meets the requirements of the Standard. The County may refuse shipments of hazardous materials that are not appropriately labeled or for which the Contractor has not timely provided MSDS. The Contractor must pay any expenses that it or the County incurs as a result of the County's refusal of goods under this section or rejection of MSDS.

19. HAZARDOUS WASTE GENERATOR/HAZARDOUS WASTE DISPOSAL

The County and the Contractor shall be listed as co-generators. The Contractor assumes all duties pertaining to the waste generator, including signing the Waste Shipment Record ("WSR") and manifest. The Contractor shall supply the County Project Officer with the executed original Owner's Copy of the WSR, as required by applicable regulatory agencies within thirty-five (35) days from the time the waste was accepted by the initial waste transporter, and prior to request for final payment. A separate WSR shall be submitted for each shipment to the disposal site.

Delayed Waste Shipment Records: The Contractor shall report in writing to the EPA Region III office within forty-five (45) days if an executed copy of the WSR is not received from the operator of the disposal site. The report to the EPA regional office shall include a copy of the original WSR and a cover letter signed by the Contractor stating the efforts taken to locate the hazardous waste shipment and the results of those efforts.

Temporary Hazardous Waste Storage Prohibited: The Contractor shall not temporarily store hazardous waste unless pre-approved by the County. If so approved, hazardous waste stored off-site in a temporary facility shall be monitored and records shall be kept on the number of containers, size, and weight. The Contractor shall inform the County when the hazardous waste is to be transported to the final disposal site. The County has the right to inspect the temporary

site at any time. The Contractor shall submit copies of all relevant manifests, WSRs, and landfill receipts to the County Project Officer prior to the request for final payment. All paperwork shall be signed by the Contractor and disposal site operator as required.

20. PROHIBITION AGAINST ASBESTOS-CONTAINING MATERIALS

No goods, equipment or material that the Contractor or its subcontractor provides or installs may contain asbestos. The Contractor must remove any asbestos-containing goods, equipment and material at its sole cost, which includes worker protection and legal disposal, and must reimburse the County for the replaced goods, equipment and material. The County may offset these costs and reimbursement against any amounts that it owes the Contractor.

21. SAFETY

The Contractor shall comply with, and ensure that the Contractor's employees and subcontractors comply with, all current applicable local, state and federal policies, regulations and standards relating to safety and health, including, by way of illustration and not limitation, the standards of the Virginia Occupational Safety and Health program of the Department of Labor and Industry for General Industry and for the Construction Industry, the Federal Environmental Protection Agency standards and the applicable standards of the Virginia Department of Environmental Quality.

The Contractor shall provide, or cause to be provided, all technical expertise, qualified personnel, equipment, tools and material to safely accomplish the work specified to be performed by the Contractor and subcontractor(s).

The Contractor shall identify to the County Project Officer at least one on-site person who is the Contractor's competent, qualified, and authorized person on the worksite and who is, by training or experience, familiar with and trained in policies, regulations and standards applicable to the work being performed. The competent, qualified and authorized person must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, shall be capable of ensuring that applicable safety regulations are complied with, and shall have the authority and responsibility to take prompt corrective measures, which may include removal of the Contractor's personnel from the work site.

The Contractor shall provide to the County, at the County's request, a copy of the Contractor's written safety policies and safety procedures applicable to the scope of work. Failure to provide this information within seven (7) days of the County's request may result in cancellation of the contract.

22. FAILURE TO DELIVER

If the Contractor fails to deliver goods or services in accordance with the Contract terms and conditions, the County, after notice to the Contractor, may procure the goods or services from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. The County shall be entitled to offset such costs against any sums owed by the County to the Contractor. However, if public necessity requires the use of nonconforming materials or supplies, they may be accepted at a reduction in price to be determined solely by the County.

23. UNSATISFACTORY WORK

The Contractor must within 15 days of written notice from the County remove and replace, at its expense, any goods that the County rejects as unsatisfactory. Otherwise, the County may choose to remove or replace the rejected goods at the Contractor's expense. The County may offset the costs against any amounts that it owes the Contractor. The County may also decide not to remove or replace the unsatisfactory goods and instead to adjust the Contract Amount to account for the unsatisfactory performance. This paragraph applies throughout the Contract Term and any warranty or guarantee period.

24. PROJECT STAFF

The County has the right to reasonably reject staff or subcontractors whom the Contractor assigns to the Project. The Contractor must then provide replacement staff or subcontractors satisfactory to the County in a timely manner and at no additional cost to the County. The day-to-day supervision and control of the Contractor's employees and its subcontractors is the sole responsibility of the Contractor.

25. SUPERVISION BY CONTRACTOR

The Contractor shall at all times enforce strict discipline and good order among the employees and subcontractors performing under this Contract and shall not employ on the Work any person not reasonably proficient in the work assigned.

26. BACKGROUND CHECK

All employees or subcontractors whom the Contractor assigns to work on this Contract must pass the County's standard background check. The background check will include fingerprinting by the County Sheriff's Office and a credit check.

27. EMPLOYMENT DISCRIMINATION BY CONTRACTOR PROHIBITED

During the performance of its work pursuant to this Contract:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age or disability or on any other basis prohibited by state law. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

B. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation will be deemed sufficient for meeting the requirements of this section.

C. The Contractor will state in all solicitations or advertisements for employees that it places or causes to be placed that such Contractor is an Equal Opportunity Employer.

D. The Contractor will comply with the provisions of the Americans with Disabilities Act of 1990 ("ADA"), which prohibits discrimination against individuals with disabilities in employment and mandates that disabled individuals be provided access to publicly and privately provided services and activities.

E. The Contractor must include the provisions of the foregoing paragraphs in every subcontract or purchase order of more than $10,000.00 relating to this Contract so that the provisions will be binding upon each subcontractor or vendor.

28. EMPLOYMENT OF UNAUTHORIZED ALIENS PROHIBITED

In accordance with §2.2-4311.1 of the Code of Virginia, as amended, the Contractor must not during the performance of this Contract knowingly employ an unauthorized alien, as that term is defined in the federal Immigration Reform and Control Act of 1986.

29. DRUG-FREE WORKPLACE TO BE MAINTAINED BY CONTRACTOR

During the performance of this Contract, the Contractor must: (i) provide a drug-free workplace for its employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violating such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses

in every subcontract or purchase order of more than $10,000.00 relating to this Contract so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "workplace" means the site(s) for the performance of the work required by this Contract.

30. TERMINATION

The County may terminate this Contract at any time as follows: (1) for cause, if, as determined by the County, the Contractor is in breach or default or has failed to perform the Work satisfactorily; or (2) for the convenience of the County.

Upon receipt of a notice of termination, the Contractor must not place any further orders or subcontracts for materials, services or facilities; must terminate all vendors and subcontracts, except as are necessary for the completion of any portion of the Work that the County did not terminate; and must immediately deliver all documents related to the terminated Work to the County.

Any purchases that the Contractor makes after the notice of termination will be the sole responsibility of the Contractor, unless the County has approved the purchases in writing as necessary for completion of any portion of the Work that the County did not terminate.

If any court of competent jurisdiction finds a termination for cause by the County to be improper, then the termination will be deemed a termination for convenience.

A. TERMINATION FOR CAUSE, INCLUDING BREACH AND DEFAULT; CURE

1. Termination for Unsatisfactory Performance. If the County determines that the Contractor has failed to perform satisfactorily, then the County will give the Contractor written notice of such failure(s) and the opportunity to cure them within 15 days or any other period specified by the County ("Cure Period"). If the Contractor fails to cure within the Cure Period, the County may terminate the Contract for failure to provide satisfactory performance by providing written notice with a termination date. The Contractor must submit any request for termination costs, with all supporting documentation, to the County Project Officer within 30 days after the expiration of the Cure Period. The County may accept or reject the request for termination costs, in whole or in part, and may notify the Contractor of its decision within a reasonable time.

   In the event of termination by the County for failure to perform satisfactorily, the Contractor must continue to provide its services as previously scheduled through the termination date, and the County must continue to pay all fees and charges incurred through the termination date.

2. Termination for Breach or Default. If the County terminates the Contract for default or breach of any Contract provision or condition, then the termination will be immediate after notice of termination to the Contractor (unless the County provides for an opportunity to cure), and the Contractor will not be permitted to seek termination costs.

   Upon any termination pursuant to this section, the Contractor will be liable to the County for costs that the County must expend to complete the Work, including costs resulting from any related delays and from unsatisfactory or non-compliant work performed by the Contractor or its subcontractors. The County will deduct such costs from any amount due to the Contractor; or if the County does not owe the Contractor,

the Contractor must promptly pay the costs within 15 days of a demand by the County. This section does not limit the County's recovery of any other damages to which it is entitled by law.

Except as otherwise directed by the County, the Contractor must stop work on the date of receipt the notice of the termination.

B. TERMINATION FOR THE CONVENIENCE OF THE COUNTY

The County may terminate this Contract in whole or in part whenever the Purchasing Agent determines that termination is in the County's best interest. The County will give the Contractor at least 15 days' notice in writing. The notice must specify the extent to which the Contract is terminated and the effective termination date. The Contractor will be entitled to termination costs plus any other reasonable amounts that the parties might negotiate; but no amount will be allowed for anticipatory profits.

Except as otherwise directed by the County, the Contractor must stop work on the date of receipt of the notice of the termination.

31. INDEMNIFICATION

The Contractor covenants for itself, its employees and its subcontractors to save, defend, hold harmless and indemnify the County and all of its elected and appointed officials, officers, current and former employees, agents, departments, agencies, boards and commissions (collectively the "County Indemnitees") from and against any and all claims made by third parties for any and all losses, damages, injuries, fines, penalties, costs (including court costs and attorneys' fees), charges, liability, demands or exposure resulting from, arising out of or in any way connected with the Contractor's acts or omissions, including the acts or omissions of its employees and/or subcontractors, in performance or nonperformance of the Contract. This duty to save, defend, hold harmless and indemnify will survive the termination of this Contract. If the Contractor fails or refuses to fulfill its obligations contained in this section, the Contractor must reimburse the County for any and all resulting payments and expenses, including reasonable attorneys' fees. The Contractor must pay such expenses upon demand by the County, and failure to do so may result in the County withholding such amounts from any payments to the Contractor under this Contract.

32. OWNERSHIP AND RETURN OF RECORDS

This Contract does not confer on the Contractor any ownership rights or rights to use or disclose the County's data or inputs.

All drawings, specifications, blueprints, data, information, findings, memoranda, correspondence, documents or records of any type, whether written, oral or electronic, and all documents generated by the Contractor or its subcontractors as a result of this Contract (collectively "Records") are the exclusive property of the County and must be provided or returned to the County upon completion, termination, or cancellation of this Contract. The Contractor will not use or willingly cause or allow such materials to be used for any purpose other than performance of this Contract without the written consent of the County.

The Records are confidential, and the Contractor will neither release the Records nor share their contents. The Contractor will refer all inquiries regarding the status of any Record to the Project Officer or to his or her designee. At the County's request, the Contractor will deliver all Records, including hard copies of electronic records, to the Project Officer and will destroy all electronic Records.

The Contractor agrees to include the provisions of this section as part of any contract or agreement related to this Contract into which it enters with subcontractors or other third parties. The provisions of this section will survive any termination or cancellation of this Contract.

33. ETHICS IN PUBLIC CONTRACTING

This Contract incorporates by reference Article 9 of the Arlington County Purchasing Resolution, as well as all state and federal laws related to ethics, conflicts of interest or bribery, including the State and Local Government Conflict of Interests Act (Code of Virginia § 2.2-3100 et seq.), the Virginia Governmental Frauds Act (Code of Virginia § 18.2-498.1 et seq.) and Articles 2 and 3 of Chapter 10 of Title 18.2 of the Code of Virginia, as amended (§ 18.2-438 et seq.). The Contractor certifies that its bid was made without collusion or fraud; that it has not offered or received any kickbacks or inducements from any other offeror, supplier, manufacturer or subcontractor; and that it has not conferred on any public employee having official responsibility for this procurement any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

34. COUNTY EMPLOYEES

No Arlington County employee may share in any part of this Contract or receive any benefit from the Contract that is not available to the general public.

35. FORCE MAJEURE

Neither party will be held responsible for failure to perform the duties and responsibilities imposed by this Contract if such failure is due to a fire, riot, rebellion, natural disaster, war, act of terrorism or act of God that is beyond the control of the party and that makes performance impossible or illegal, unless otherwise specified in the Contract.

36. AUTHORITY TO TRANSACT BUSINESS

The Contractor must, pursuant to Code of Virginia § 2.2-4311.2, be and remain authorized to transact business in the Commonwealth of Virginia during the entire term of this Contract. Otherwise, the Contract is voidable at the sole option of and with no expense to the County.

37. RELATION TO COUNTY

The Contractor is an independent contractor, and neither the Contractor nor its employees or subcontractors will be considered employees, servants or agents of the County. The County will not be responsible for any negligence or other wrongdoing by the Contractor or its employees, servants or agents. The County will not withhold payments to the Contractor for any federal or state unemployment taxes, federal or state income taxes or Social Security tax or for any other benefits. The County will not provide to the Contractor any insurance coverage or other benefits, including workers' compensation.

38. ANTITRUST

The Contractor conveys, sells, assigns and transfers to the County all rights, title and interest in and to all causes of action under state or federal antitrust laws that the Contractor may have relating to this Contract.

39. REPORT STANDARDS

The Contractor must submit all written reports required by this Contract for advance review in a format approved by the Project Officer. Reports must be accurate and grammatically correct and should not contain spelling errors. The Contractor will bear the cost of correcting grammatical or spelling errors and inaccurate report data and of other revisions that are required to bring the report(s) into compliance with this section.

Whenever possible, proposals must comply with the following guidelines:

- printed double-sided on at least 30% recycled-content and/or tree-free paper
- recyclable and/or easily removable covers or binders made from recycled materials (proposals with glued bindings that meet all other requirements are acceptable)

- avoid use of plastic covers or dividers
- avoid unnecessary attachments or documents or superfluous use of paper (e.g. separate title sheets or chapter dividers)

40. AUDIT

The Contractor may be requested to provide to the County the complete findings and all components of an independent certified public accountant's audit of its finances and program operation within two months after the close of Contractor's fiscal year. If a management letter was not prepared with the audit, the Contractor must so certify in writing as part of the audit report to the County. The Contractor must allow the County to review its records as the County deems necessary for audit purposes within 15 calendar days of the County's receipt of the findings. All accounts of the Contractor are subject to audit.

The Contractor must retain all books, records and other documents related to this Contract for at least five years after the final payment and must allow the County or its authorized agents to examine the documents during this period and during the Contract Term. The Contractor must provide any requested documents to the County for examination within 15 days of the request, at the Contractor's expense. Should the County's examination reveal any overcharging by the Contractor, the Contractor must, within 30 days of County's request, reimburse the County for the overcharges and for the reasonable costs of the County's examination, including, but not limited to, the services of external audit firm and attorney's fees; or the County may deduct the overcharges and examination costs from any amount that the County owes to the Contractor. If the Contractor wishes to destroy or dispose of any records related to this Contract (including confidential records to which the County does not have ready access) within five years after the final payment, the Contractor must give the County at least 30 days' notice and must not dispose of the documents if the County objects.

41. ASSIGNMENT

The Contractor may not assign, transfer, convey or otherwise dispose of any award or any of its rights, obligations or interests under this Contract without the prior written consent of the County.

42. AMENDMENTS

This Contract may not be modified except by written amendment executed by persons duly authorized to bind the Contractor and the County.

43. ARLINGTON COUNTY PURCHASING RESOLUTION AND COUNTY POLICIES

Nothing in this Contract waives any provision of the Arlington County Purchasing Resolution, which is incorporated herein by reference, or any applicable County policy.

44. DISPUTE RESOLUTION

All disputes arising under this Agreement or concerning its interpretation, whether involving law or fact and including but not limited to claims for additional work, compensation or time, and all claims for alleged breach of contract must be submitted in writing to the Project Officer as soon as the basis for the claim arises. In accordance with the Arlington County Purchasing Resolution, claims denied by the Project Officer may be submitted to the County Manager in writing no later than 60 days after the final payment. The time limit for a final written decision by the County Manager is 30 days. Procedures concerning contractual claims, disputes, administrative appeals and protests are contained in the Arlington County Purchasing Resolution. The Contractor must continue to work as scheduled pending a decision of the Project Officer, County Manager, County Board or a court of law.

45. APPLICABLE LAW, FORUM, VENUE AND JURISDICTION

This Contract is governed in all respects by the laws of the Commonwealth of Virginia; and the jurisdiction, forum and venue for any litigation concerning the Contract or the Work is in the Circuit Court for Arlington County, Virginia, and in no other court.

46. ARBITRATION

No claim arising under or related to this Contract may be subject to arbitration.

47. NONEXCLUSIVITY OF REMEDIES

All remedies available to the County under this Contract are cumulative, and no remedy will be exclusive of any other at law or in equity.

48. NO WAIVER

The failure to exercise a right provided for in this Contract will not be a subsequent waiver of the same right or of any other right.

49. SEVERABILITY

The sections, paragraphs, clauses, sentences, and phrases of this Contract are severable; and if any section, paragraph, clause, sentence or phrase of this Contract is declared invalid by a court of competent jurisdiction, the rest of the Contract will remain in effect.

50. NO WAIVER OF SOVEREIGN IMMUNITY

Notwithstanding any other provision of this Contract, nothing in this Contract or any action taken by the County pursuant to this Contract shall constitute or be construed as a waiver of either the sovereign or governmental immunity of the County. The parties intend for this provision to be read as broadly as possible.

51. ATTORNEY'S FEES

In the event that the County prevails in any legal action or proceeding brought by the County to enforce any provision of this Contract, the Contractor will pay the County's reasonable attorney's fees and expenses.

52. SURVIVAL OF TERMS

In addition to any statement that a specific term or paragraph survives the expiration or termination of this Contract, the following sections also survive: INDEMNIFICATION; RELATION TO COUNTY; OWNERSHIP AND RETURN OF RECORDS; AUDIT; DISPUTE RESOLUTION; APPLICABLE LAW AND JURISDICTION; AND ATTORNEY'S FEES.

53. HEADINGS

The section headings in this Contract are inserted only for convenience and do not affect the substance of the Contract or limit the sections' scope.

54. AMBIGUITIES

The parties and their counsel have participated fully in the drafting of this Agreement; and any rule that ambiguities are to be resolved against the drafting party does not apply. The language in this Agreement is to be interpreted as to its plain meaning and not strictly for or against any party.

55. NOTICES

Unless otherwise provided in writing, all legal notices and other communications required by this Contract are deemed to have been given when either (a) delivered in person; (b) delivered by an agent, such as a delivery service; or (c) deposited in the United States mail, postage prepaid, certified or registered and addressed as follows:

TO THE CONTRACTOR:

_____
_____
_____
_____

TO THE COUNTY:

_____, Project Officer
_____
_____
_____

AND
Tomeka D. Price, VCA
Procurement Officer
Arlington County, Virginia
2100 Clarendon Boulevard, Suite 500
Arlington, Virginia 22201

56. ARLINGTON COUNTY BUSINESS LICENSES

The Contractor must comply with the provisions of Chapter 11 ("Licenses") of the Arlington County Code, if applicable. For information on the provisions of that Chapter and its applicability to this Contract, the Contractor must contact the Arlington County Business License Division, Office of the Commissioner of the Revenue, 2100 Clarendon Blvd., Suite 200, Arlington, Virginia, 22201, telephone number (703) 228-3060.

57. NON-DISCRIMINATION NOTICE

Arlington County does not discriminate against faith-based organizations.

58. LIMITED ENGLISH PROFICIENCY

The Contractor must comply with Executive Order 13166, Title VI of the Civil Rights Act of 1964 and make reasonable efforts to ensure that as part of the services that it provides, adequate communication services, including interpretation and translation, are available to persons who have limited English proficiency. If such services are not included in the Contract's scope of services and pricing, the Contractor will use a County-contracted service provider, and the County will pay the fees.

59. INSURANCE REQUIREMENTS

Before beginning work under the Contract or any extension, the Contractor must provide to the County Purchasing Agent a Certificate of Insurance indicating that the Contractor has in force at a minimum the coverage below. The Contractor must maintain this coverage until the completion of the Contract or as otherwise stated in the Contract Documents. All required insurance coverage must be acquired from insurers that are authorized to do business in the Commonwealth of Virginia, with a rating of "A- "or better and a financial size of "Class VII" or better in the latest edition of the A.M. Best Co. Guides.

a. Workers Compensation - Virginia statutory workers compensation (W/C) coverage, including Virginia benefits and employer's liability with limits of $100,000/100,000/500,000. The County will not accept W/C coverage issued by the Injured Worker's Insurance Fund, Towson, MD.

b. Commercial General Liability - $1,000,000 per occurrence, with $2,000,000 annual aggregate covering all premises and operations and including personal injury, completed operations, contractual liability, independent contractors, and products liability. The general aggregate limit must apply to this Contract. Evidence of contractual liability coverage must be typed on the certificate.

c. Business Automobile Liability - $1,000,000 combined single-limit (owned, non-owned and hired).

d. Additional Insured – The County and its officers, elected and appointed officials, employees and agents must be named as additional insureds on all policies except workers compensation and automotive and professional liability; and the additional insured endorsement must be typed on the certificate.

e. Cancellation - If there is a material change or reduction in or cancellation of any of the above coverages during the Contract Term, the Contractor must notify the Purchasing Agent immediately and must, with no lapse in coverage, obtain replacement coverage that is consistent with the terms of this Contract. Not having the required insurance throughout the Contract Term is grounds for termination of the Contract.

f. Claims-Made Coverage - Any "claims made" policy must remain in force, or the Contractor must obtain an extended reporting endorsement, until the applicable statute of limitations for any claims has expired.

g. Contract Identification - All insurance certificates must state this Contract's number and title.

The Contractor must disclose to the County the amount of any deductible or self-insurance component of any of the required policies. With the County's approval, the Contractor may satisfy its obligations under this section by self-insurance for all or any part of the insurance required, provided that the Contractor can demonstrate sufficient financial capacity. In order to do so, the Contractor must provide the County with its most recent actuarial report and a copy of its self-insurance resolution.

The County may request additional information to determine if the Contractor has the financial capacity to meet its obligations under a deductible and may require a lower deductible; that funds equal to the deductible be placed in escrow; a certificate of self-insurance; collateral; or another mechanism to guarantee the amount of the deductible and ensure protection for the County.

The County's acceptance or approval of any insurance will not relieve the Contractor from any liability or obligation imposed by the Contract Documents.

The Contractor is responsible for the Work and for all materials, tools, equipment, appliances and property used in connection with the Work. The Contractor assumes all risks for direct and indirect damage or injury to the property used or persons employed in connection with the Work and for of all damage or injury to any person or property, wherever located, resulting from any action, omission, commission or operation under the Contract or in connection in any way whatsoever with the Work. The Contractor's insurance shall be the primary non-contributory insurance for any work performed under this Contract.

The Contractor is as fully responsible to the County for the acts and omissions of its subcontractors and of persons employed by them as it is for acts and omissions of persons whom the Contractor employs directly.

60. COUNTERPARTS

This Agreement may be executed in one or more counterparts and all of such counterparts shall together constitute one and the same instrument. Original signatures transmitted and received via facsimile or other electronic transmission

(e.g., PDF or similar format) are true and valid signatures for all purposes hereunder and shall be effective as delivery of a manually executed original counterpart.

WITNESS these signatures:

THE COUNTY BOARD OF ARLINGTON COUNTY, VIRGINIA	CONTRACTOR
AUTHORIZED SIGNATURE: _____	AUTHORIZED SIGNATURE: _____
NAME AND TITLE: TOMEKA D. PRICE PROCUREMENT OFFICER	NAME AND TITLE: _____
DATE: _____	DATE: _____

IV. ATTACHMENTS AND FORMS

ARLINGTON COUNTY, VIRGINIA

INVITATION TO BID NO. 20-257-ITB

B I D F O R M

SUBMIT ONE FULLY-COMPLETED AND SIGNED BID FORM ELECTRONICALLY VIA VENDOR REGISTRY

BIDS WILL BE OPENED AT _____ P.M., ON _____, 20___

FOR PROVIDING HAZARDOUS MATERIAL ABATEMENT SERVICES PER THE TERMS, CONDITIONS AND SPECIFICATIONS OF THIS SOLICITATION

GRAND TOTAL FOR SECTIONS A, B, & C $_____

Hourly Rates and Unit Prices shall include all labor, material, delivery costs, administrative, overhead and profit.

A. KEY PERSONNEL:

Position	Hourly Rates
Project Manager	$_____
Asbestos Inspector	$_____
Asbestos Management Planner	$_____
Asbestos Project Designer	$_____
Asbestos Project Monitor	$_____
Lead Inspector	$_____
Lead Risk Assessor	$_____
Lead Project Designer	$_____
Indoor Air Quality Specialist	$_____
TOTAL	**$_____**

B. SAMPLE ANALYSIS FEES: Sample analysis fees shall include all materials, equipment, analytical personnel, subcontractor's charges and delivery/transportation costs associated with analyzing each sample. Project management, office support, sample report (including interpretation and recommendation, if applicable) and report administration and quality control costs shall be included in the sample analysis unit fee. Turn-around time (TAT) shall refer to the time, in calendar days or hours, as specified, from collecting the sample to written communication of results to the County Project Officer or their designee.

1. AIR SAMPLES/TAT (including all off-site labor and all supplies). Note: All samples listed below refer to asbestos samples except for Radon Screening Test Kit.

Description	Unit Price
Transmission Electron Microscopy (TEM) air	$_____/hr.
Phase Contrast Microscopy (PCM)	$_____/hr.
Radon Screening Test Kit	$_____/kit
Indoor Air Quality Test	$_____/test
Mold Test	$_____/test
TOTAL	**$_____**

2. MATERIALS (BULK) SAMPLES/TAT: Note: All samples listed below refer to asbestos samples

Description	Unit Price
X-ray fluorescence (lead)	$_____/hr.
Paint Scraping Samples Analyzed by NIOSH Method 7082M	$_____/sample
Toxicity Characteristic Leaching Procedure-Lead	$_____/procedure
Lead in Drinking Water Samples Analyzed by EPA Method 200.8	$_____/sample
Point counting	$_____/hr.
Gravimetric	$_____/hr.
X-ray diffraction	$_____/hr.
Polarized Light Microscopy (PLM)	$_____/hr.
TOTAL	**$_____**

3. PLEASE PROVIDE THE NAME AND ADDRESS OF THE LABORATORY THAT WILLBE PROVIDING SAMPLE ANALYSIS SERVICES UNDER THIS CONTRACT:

_____

_____

_____

C. PROJECT-BASED PRICES: One fee will be charged per project, along with any related on-site personnel and sampling charges, for the following (requirements and deadlines are specified in Scope of Services).

Description	Unit Price
Review/revision of master specification	$_____ ea.
Provision of reports on CD	$_____/report
Abatement project cost estimate	$_____ ea.
Environmental building survey	$_____/building
Abatement project Design: County – generated specification tailoring, submitted for Contractor review and approval	$_____ ea.
Abatement project Design: Contractor – generated specification tailoring	$_____ ea.
TOTAL	**$_____**

THE FULL LEGAL NAME OF THE ENTITY SUBMITTING THIS BID MUST BE WRITTEN IN THE SPACE BELOW. THIS BID FORM AND ALL OTHER DOCUMENTS THAT REQUIRE A SIGNATURE MUST BE FULLY AND ACCURATELY COMPLETED AND SIGNED BY A PERSON WHO IS AUTHORIZED TO BIND THE BIDDER, OR THE BID MAY BE REJECTED:

SUBMITTED BY:
(legal name of entity) _____

AUTHORIZED SIGNATURE: _____

PRINT NAME AND TITLE: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

TELEPHONE NO.: _____ **E-MAIL ADDRESS:** _____

THIS ENTITY IS INCORPORATED IN: _____

THIS ENTITY IS A: *(check the applicable option)*

CORPORATION	❑	LIMITED PARTNERSHIP	❑
GENERAL PARTNERSHIP	❑	UNINCORPORATED ASSOCIATION	❑
LIMITED LIABILITY COMPANY	❑	SOLE PROPRIETORSHIP	❑

IS BIDDER AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VIRGINIA? YES ❑ NO ❑

IDENTIFICATION NO. ISSUED TO THE ENTITY BY THE SCC: _____

Any Bidder exempt from Virginia State Corporation Commission (SCC) authorization requirement must include a statement with its bid explaining why it is not required to be so authorized.

ENTITY'S DUN & BRADSTREET D-U-N-S NUMBER: *(if available)* _____

IS YOUR FIRM OR ANY OF ITS PRINCIPALS CURRENTLY DEBARRED FROM SUBMITTING BIDS TO ARLINGTON COUNTY, VIRGINIA, OR ANY OTHER STATE OR POLITICAL SUBDIVISION? YES ❑ NO ❑

BIDDER STATUS: MINORITY OWNED: ❑ WOMAN OWNED: ❑ NEITHER: ❑

THE UNDERSIGNED UNDERSTANDS AND ACKNOWLEDGES THE FOLLOWING:

THE OFFICIAL COPY OF THE SOLICITATION DOCUMENTS, WHICH INCLUDES ANY ADDENDA, IS THE ELECTRONIC COPY THAT IS AVAILABLE ON THE VENDOR REGISTRY WEBSITE.

POTENTIAL BIDDERS ARE RESPONSIBLE FOR DETERMINING THE ACCURACY AND COMPLETENESS OF ALL SOLICITATION DOCUMENTS THEY RECEIVE FROM ANY SOURCE, INCLUDING THE COUNTY.

Company Qualifications: Bidders shall have 5 years of experience in HAZMAT surveying, monitoring and assessment. Bidder shall provide verification that asbestos and lead inspectors have received training for permit-required confined space entry per OSHA standard 29 CFR 1910.146 with their bid submission. The experience shall be work of similar size and scope.

Bidders shall provide written Quality Assurance and Quality Control (QA/QC) program proposed by their laboratory.

Project Experience: Bidders shall provide a list of projects, of similar size and scope, that have been executed during the past five (5) years for consideration of application to the below individual requirements. Each project shall meet all of these requirements and bidders can submit separate projects for each requirement.

- Have completed five (5) HAZMAT surveying, monitoring and assessment projects within the past five years.
- Have completed at least one (1) HAZMAT surveying, monitoring and assessment projects for a local, state, or federal government agency.

Bidders' list shall include the following information to show compliance with the experience criteria:

- Project Name
- Project description and scope of work
- Final contract value

Bidders' shall submit the Bidder Qualification Matrix (Attachment B) and complete with as much detail as required to confirm you meet each qualification.

Staffing Qualifications: All key personnel proposed for this project must have experience as designated key personnel in similar size and type of projects.

The undersigned acknowledges receipt of the following Addenda:

ADDENDUM NO. 1 DATE:_____INITIAL:_____

ADDENDUM NO. 2 DATE: _____INITIAL: _____

ADDENDUM NO. 3 DATE: _____INITIAL: _____

TRADE SECRETS OR PROPRIETARY INFORMATION:
Trade secrets or proprietary information submitted by a Bidder in connection with a procurement transaction will not be subject to public disclosure under the Virginia Freedom of Information Act. Pursuant to Section 4-111 of the Arlington County Purchasing Resolution, however, a Bidder seeking to protect submitted data or materials from disclosure must, before or upon submission of the data or materials, identify the data or materials to be protected and state the reasons why protection is necessary.

Please mark one:

❑ No, the bid that I have submitted does not contain any trade secrets and/or proprietary information.

❑ Yes, the bid that I have submitted does contain trade secrets and/or proprietary information.

If Yes, you must clearly identify below the exact data or materials to be protected and list all applicable page numbers of the bid that contain such data or materials:

_____

_____

_____

_____

State the specific reason(s) why protection is necessary:

_____

_____

_____

_____

If you fail above to identify the data or materials to be protected or to state the reason(s) why protection is necessary, you will not have invoked the protection of Section 4-111 of the Purchasing Resolution. Accordingly, upon the award of a contract, the bid will be open for public inspection consistent with applicable law.

CERTIFICATION OF NON-COLLUSION: The undersigned certifies that this bid is not the result of or affected by (1) any act of collusion with another person engaged in the same line of business or commerce (as defined in Virginia Code §§ 59.1-68.6 *et seq*.) or (2) any act of fraud punishable under the Virginia Governmental Frauds Act (Virginia Code §§ 18.2-498.1 *et seq*.).

CONTACT PERSON AND MAILING ADDRESS FOR DELIVERY OF NOTICES

Provide the name and address of the person who is designated to receive notices and other communications regarding this solicitation. Refer to the "Notices" section in the draft Contract Terms and Conditions for information regarding delivery of notices.

NAME: _____

ADDRESS: _____

_____

E-MAIL: _____

REFERENCES

Bidders should provide three (3) references for similar services that have been provided by the Bidder within the past five (5) years. The County reserves the right to evaluate the quality of Contractor's work through site visits with Contractor's references.

REFERENCE 1: Contact Name: _____

Organization: _____

Phone Number: _____

E-mail Address: _____

Contract/Project Name: _____

Contract/Project Dates (from-to): _____

Contract/Project Description: _____

REFERENCE 2: Contact Name: _____

Organization: _____

Phone Number: _____

E-mail Address: _____

Contract/Project Name: _____

Contract/Project Dates (from-to): _____

Contract/Project Description: _____

REFERENCE 3: Contact Name: _____

Organization: _____

Phone Number: _____

E-mail Address: _____

Contract/Project Name: _____

Contract/Project Dates (from-to): _____

Contract/Project Description: _____

BIDDER NAME: _____

INSURANCE CHECKLIST

CERTIFICATE OF INSURANCE MUST SHOW ALL COVERAGE AND ENDORSEMENTS MARKED "X".

COVERAGES REQUIRED	COVERAGE MINIMUM(S)
_X_1. Workers' Compensation	Statutory limits of Virginia
_X_2. Employer's Liability	$100,000 accident, $100,000 disease, $500,000 disease policy limit
_X_3. Commercial General Liability	$1,000,000 CSL BI/PD each occurrence, $2 Million annual aggregate
_X_4. Premises/Operations	$500,000 CSL BI/PD each occurrence, $1 Million annual aggregate
_X_5. Automobile Liability	$1 Million BI/PD each accident, Uninsured Motorist
__6. Owned/Hired/Non-Owned Vehicles	$1 Million BI/PD each accident, Uninsured Motorist
_X_7. Independent Contractors	$500,000 CSL BI/PD each occurrence, $1 Million annual aggregate
_X_8. Products Liability	$500,000 CSL BI/PD each occurrence, $1 Million annual aggregate
_X_9. Completed Operations	$500,000 CSL BI/PD each occurrence, $1 Million annual aggregate
_X_10. Contractual Liability (Must be shown on Certificate)	$500,000 CSL BI/PD each occurrence, $1 Million annual aggregate
_X_11. Personal and Advertising Injury Liability.	$1 Million each offense, $1 Million annual aggregate
__12. Umbrella Liability	$1 Million Bodily Injury, Property Damage and Personal Injury
__13. Per Project Aggregate	
_X_14. Professional Liability	
__a. Architects and Engineers	$1 Million per occurrence/claim
_X_b. Asbestos Removal Liability	$2 Million per occurrence/claim
__c. Medical Malpractice	$1 Million per occurrence/claim
__d. Medical Professional Liability	$ Limits as set forth in Virginia Code 8.01.581.15
__15. Miscellaneous E&O	$1 Million per occurrence/claim
__16. Motor Carrier Act End. (MCS-90)	$1 Million BI/PD each accident, Uninsured Motorist
__17. Motor Cargo Insurance	
__18. Garage Liability	$1 Million Bodily Injury, Property Damage per occurrence
__19. Garagekeepers Liability	$500,000 Comprehensive, $500,000 Collision
__20. Inland Marine-Bailee's Insurance	$_____
__21. Moving and Rigging Floater	Endorsement to CGL
__22. Crime and Employee Dishonesty Coverage	$_____
__23. Builder's Risk	Provide Coverage in the full amount of Contract, including any amendments
__24. XCU Coverage	Endorsement to CGL
__25. USL&H	Federal Statutory Limits

_X_26. Carrier Rating shall be A.M. Best Co.'s Rating of A-VII or better or equivalent

_X_27. Notice of Cancellation, nonrenewal or material change in coverage shall be provided to County at least 30 days prior to action.

_X_28. The County shall be an Additional Insured on all policies except Workers Compensation and Auto and Professional Liability.

_X_29. Certificate of Insurance shall show Bid Number and Bid Title.

__30. OTHER INSURANCE REQUIRED: _____

INSURANCE AGENT'S STATEMENT:

I have reviewed the above requirements with the Offeror named below and have advised the Offeror of required coverages not provided through this agency.

AGENCY NAME:_____ AUTH. SIGNATURE:_____

OFFEROR'S STATEMENT:

If awarded the Contract, I will comply with all Contract insurance requirements.

BIDDER NAME:_____ AUTH. SIGNATURE:_____

ATTACHMENT A

SECTION 13281
ASBESTOS CONTAINING MATERIAL ABATEMENT

Part 1 GENERAL

1.1 SUMMARY OF WORK - LEAD-BASED PAINT ABATEMENT
1.1.1 PLAN OF ACTION:
Submit a detailed job-specific plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location, size, layout and details of the work areas and worker decontamination facilities. Include the sequencing of abatement work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Describe the methods that will be used to comply with VOSHA requirements. The plan must be approved by the Owner's Representative prior to commencement of work.

1.2 CODES, REGULATIONS, AND STANDARDS

1.2.1 GENERAL: The contract work shall comply with the provisions or requirements of EPA, OSHA, federal and state regulations and to other elements that are included in this project.

This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits that are known to the County and that either must be applied for and received or that must be given to governmental agencies before start of work.

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

1.2.2 CODES AND REGULATIONS:
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, temporary waste storage, disposal, and protection of workers, visitors, 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 County and Owner's Representative harmless for failure to comply with any applicable regulation for which the Contractor, Contractor's employees, or subcontractors are responsible.

1.2.3Regulatory Requirements: Those requirements that govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

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

Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules 29 CFR 1910, Section 1001 and Part 1926, Section 1101.

Respiratory Protection, 29 CFR 1910, Section 134.

Respiratory Protection, 29 CFR 1926, Section 103.

Construction Industry, 29 CFR 1910, Section 1001 and 1926 Section 1101.

Access to Employee Exposure and Medical Records, 29 CFR 1926, Section 33

Hazard Communication, 29 CFR 1910.1200, 29 CFR 1926.59

First Aid/Medical Attention, 29 CFR 1926.23

Illumination 29 CFR 1926.26

Sanitation 29 CFR 1926.27

Employee Training and Education 29 CFR 1926.21

Specifications for Accident Prevention Signs and Tags, 29 CFR 1910, Section 145.

Ladders and Scaffolding, 29 CFR 1926.450, 451, and 452.

Control of Hazardous Energy (lockout/tagout) 29 CFR 1926.147

Confined Space Entry 29 CFR 1926.21

b. EPA: U.S. Environmental Protection Agency:

Asbestos Abatement Projects Rule, 40 CFR 763, CPTS 62044, FRL 2843-9, Federal Register, Vol. 50, No. 134, July 12, 1985, P28530-28540.

Regulation for Asbestos, 40 CFR 61, Subpart A.

National Emission Standard for Asbestos, 40 CFR 61, Subpart M (Revised Subpart B).

Asbestos-Containing Materials in Schools, 40 CFR 763 (Subpart E).

c. DOT: Department of Transportation:

Transportation, 49 CFR 170-179.

d. Commonwealth of Virginia:

Title 2.1, Chapter 32, Section 2.1-526.17:1 and effective parts, requiring asbestos inspection in buildings to be renovated or demolished.

Title 54, Chapter 7.01, Section 54-145.4 through 145.10:11 and effective parts of the Virginia Asbestos Licensing Regulations, and other regulations which may apply.

Title 54, Chapter 7.00, Section 54-1 through 3 and effective parts of the Virginia State Board for Contractor's Regulations, and other regulations which may apply.

Title 54, Chapter 105, section 54.1-514 of the Code of Virginia.

Title 54, Chapter 5, Section 36.99.7, 54.1-103, 54.1-107, 54.1-500, 54.1-501, 54.1-502, 54.1-504, 54.1-515, 54.1-516, and 54.1-517 of the Code of Virginia.

Title 54, Chapter 49, Section 54.1-500 and 54.1-501 of the Code of Virginia.

Title 54, Chapter 50, Section 2.1-526.12 and 2.1-526.14:1 of the Code of Virginia.

Title 10.1, Chapter 10.1 through 1402 and effective parts of the Virginia Waste Management Board in accordance with Title 9, Chapter 9 through 6.14:4.1.C5 of the Solid Waste Management Regulations.

Virginia Uniform Statewide Building Code (VUSBC).

1.2.4 STANDARDS: Those standards that govern asbestos abatement work or transporting and disposal of asbestos waste materials include but are not limited to the following:

American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212) 354-3300
CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration," and Specification G-7.1-1966 "Commodity Specification for Air."

Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79.

Practices for Respiratory Protection Publication: Z88.2-80, AZ88.2-1988 and Z88.2-1992.

Safety Code for Portable Wooden Ladders: A14.1-1968

Safety Code for Portable Metal Ladders: A14.2-1956

Safety Requirements for Industrial Head Protection: Z89.1-1969

Safety Requirements for Industrial Eye Protection: Z87.1-1989

Safety Requirements for Men's Safety-Toe Footware: Z41.1-1967

Safety Requirements for Women's Safety-Toe Footware: Z41-1983

American Society for Testing and Materials (ASTM)
100 Barr Harbor Drive
West Conshohocken Pennsylvania 19428-2959
(610) 832-9585 FAX (610) 832-9555
Website: http://www.astm.org

Specification for Encapsulants for Friable Asbestos-Containing Building Materials Proposal, P-189.

Occupational and Health Requirements Relating to Occupational Exposure to Asbestos, E 849-82.

Standard Practice for Visual Inspection of Asbestos Abatement Projects, E 1368-90.

1.3 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.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z88.2 (1992) Respiratory Protection

ANSI Z9.2(2001) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM INTERNATIONAL (ASTM)

ASTM C 732 (2006) Aging Effects of Artificial Weathering on Latex Sealants

ASTM D 1331(1989; R 2001) Surface and Interfacial Tension of Solutions of Surface-Active Agents

ASTM D 2794(1993; R 2004) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)

ASTM D 522 (1993a; R 2008) Mandrel Bend Test of Attached Organic Coatings

ASTM E 119 (2007) Fire Tests of Building Construction and Materials

ASTM E 1368 (2005) Visual Inspection of Asbestos Abatement Projects

ASTM E 1494(1992; R 2002) Encapsulants for Spray- or Trowel-Applied Friable Asbestos-Containing Building Materials

ASTM E 736(2006) Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members

ASTM E 84 (2005) Surface Burning Characteristics of Building Materials

ASTM E 96 (2005) Water Vapor Transmission of Materials

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)

16 VAC 25-20-30Title 16, Agency 25, Chapter 20, Section 30: Notification and Permit Fee

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 560/5-85-024(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1926.103 Respiratory Protection

29 CFR 1926.1101 Asbestos

29 CFR 1926.200 Accident Prevention Signs and Tags

29 CFR 1926.51 Sanitation

29 CFR 1926.59 Hazard Communication

40 CFR 61-SUBPART A General Provisions

40 CFR 61-SUBPART M National Emission Standard for Asbestos

40 CFR 763 Asbestos

UNDERWRITERS LABORATORIES (UL)

UL 586 (publication date Aug. 14, 2009) High-Efficiency, Particulate, Air Filter Units

VIRGINIA OCCUPATIONAL SAFETY and HEALTH COMPLIANCE PROGRAM (VOSHA)

1910.120	Hazardous waste operations and emergency	response
1910.1200	Hazard Communications	
1910 subpart H	Hazardous Materials	
1910.307	Hazardous (classified) locations	

1.4 DEFINITIONS AND ABBREVIATIONS

1.4.1GENERAL: A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including any drawings. Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon. Definitions and explanations of this section are not necessarily complete nor exclusive.

1.4.2 DEFINITIONS
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).

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

Aggressive Sampling: High-activity level air sampling which results in all settled asbestos remaining airborne and uniformly distributed 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 CFR 763.90, Appendix A to Subpart E; and Guidance for Controlling ACM in Buildings, Appendix M.
Air Cell: Insulation used on pipes and duct work that is comprised of corrugated cardboard, which often consists of asbestos combined with cellulose or refractory binders.

Air Filtration Device (AFD): An 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.

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

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

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

Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), 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.

Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of total asbestos

of any type or mixture of types.

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

Authorized Visitor: County personnel authorized by the Project Officer, or a representative of any federal, state or local regulatory agency having authority over the project are considered authorized visitors.

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

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

Category I RACM: Includes asbestos-containing gaskets, packings, resilient floor coverings, resilient floor covering mastic, and asphalt roofing products containing more than one percent asbestos.

Category II RACM: Includes all other nonfriable ACM, for example, asbestos-cement (A/C) shingles, A/C tiles, and transite boards or panels containing more than one percent asbestos.

Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded at any time.

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

County: The County Board of Arlington County, Virginia

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.

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

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

Disposal Bag: A 6 mil thick, leak-proof polyethylene bag used for transporting asbestos waste from work to disposal site. Each is labeled in compliance with CFR 1910.1200(f) OSHA Hazard Communication standard:

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

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

1.4.3 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.

a. Removal Encapsulant (can be used as a wetting agent)

b. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material)

c. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage)

d. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).

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

Filter: A media component used in respirators to remove solid (i.e. fibers) particles from the respired air. Certain filters may also remove organic vapors from the air.

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

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.

General Supervisor, Site Superintendent, Foreman: is the Contractor's representative at the work site. This person will be the Competent Person required by OSHA, 29 CFR 1926.1101.

Glovebag: A bag (typically constructed of 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.

HEPA Filter: A high efficiency particulate 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.

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.

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.

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

Installer: The "installer" is defined as the entity (person or firm) engaged by the Contractor or

Subcontractor 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.

Landfill Manifest: Document signed by a landfill operator acknowledging the receiving of ACM waste.

Manifest: A document detailing chain of custody for ACM waste hauled that is signed by the authorized representative of the waste disposal site.

Negative Exposure Assessment (NEA): Demonstration by the Abatement Contractor (employer) that worker (employee) exposure during an operation is expected to be consistently below the PEL. NEAs shall be conducted pursuant to OHSA 29 CFR 1926.1101.

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

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

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.
OSHA Required Personal Sampling/Monitoring: Air samples taken in the breathing zone of workers as required by OSHA 29 CFR 1926.1101.

Owner: The County Board of Arlington County, Virginia.

Owner's Representative: The Person of a firm who will monitor the Contractor and represent the County during construction until final inspection. The Owner's Representative will advise and consult with the Project Officer regarding asbestos abatement. Instructions to the Contractor may be forwarded through the Owner's Representative or the Project Officer.

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 CFR 1926.1101. The PEL for asbestos is 0.1 fiber/cc.

Private Qualified Person (PQP)
That qualified person hired by the Contractor to perform the herein listed tasks.

Qualified Person (QP)
A Registered Architect, Professional Engineer, Certified Industrial Hygienist, consultant or other qualified person 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, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer; and has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The QP must be qualified to perform visual inspections as indicated in ASTM E 1368. The QP shall be appropriately licensed in the Commonwealth of Virginia.

Plasticize: means to cover floors and walls with polyethylene sheeting as herein specified and in accordance with Sections 1.7 WORK AREA CONTAINMENT and 3.2 ABATEMENT GENERAL PROCEDURES.

Pressure Differential System: A local exhaust system, utilizing HEPA filtration, capable of maintaining a negative 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.

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

Project Monitor: Virginia-licensed asbestos project monitor, provided by the County to monitor the project, perform area sampling and issue final clearance certification.

Project Officer: The County employee responsible for overall contract administration.

Property Owner: The County Board of Arlington County, Virginia.

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.

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.

Regulated ACM: means friable ACM, nonfriable ACM that has become friable, nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading or nonfriable 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.

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.

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

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

Rotating Blade (RB) Roof Cutter: RB roof cutter refers to an engine-powered roof cutting machine with one or more rotating cutting blades with edges of which are blunt. (Equipment with blades having sharp or tapered edges, and/or which does not use a rotating blade, is used for "slicing" rather than "cutting" the roofing materials; such equipment is not included in the term "RB roof cutter").

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.).

Submittal: Items which are required to be presented to the Project Officer and/or the Owner's Representative for review, consideration or decision.

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

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

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. Analyses 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 CFR 763, Subpart E, Appendix A).

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

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

Waste Shipment Record: means the original shipping document, originated and signed by the waste generator (abatement Contractor) used to track and substantiate the disposal of ACM waste as described in 40 CFR Part 61.

Waste Generator: The County Board of Arlington County, Virginia and the Abatement Contractor shall be listed as Co-generators. The Abatement Contractor shall assume all the duties pertaining to the Waste Generator.

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.

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 CFR 1926.1101.

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. The extent of the project site is and may or may not be identical with the description of land upon which the project is to be built.

1.5 ABBREVIATIONS AND ACRONYMS

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 date of Contract Documents:

ACM — Asbestos Containing Material

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

AIHA — American Industrial Hygiene Association
2700 Prosperity Avenue
Suite 250
Fairfax, VA 22031
(703) 849-8888

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

ASHRAE — American Society for Heating, Refrigerating, and Air Conditioning Engineers
1791 Tullie Circle N.E., Atlanta, GA 30329
(404) 636-8400

ASTM 1916 Race Street, Philadelphia, PA 19103 (215) 299-5400	American Society for Testing and Materials
CFR Available from Government Printing Office, Washington, D.C. 20402 (usually first published in Federal Register)	Code of Federal Regulations
CGA 1235 Jefferson Davis Highway, Arlington, VA 22202 (703) 979-0900	Compressed Gas Association
CS (U.S. Department of Commerce) Government Printing Office, Washington, D.C. 20402	Commercial Standard of NIST
EPA 401 M Street S.W., Washington, D.C. 20460 (202) 382-3949	Environmental Protection Agency
f/cc	fibers per cubic centimeter
FM	Factory Mutual
FS Administration) Obtain from Regional GSA Office, or purchase from GSA Specifications Unit (WFSIS); 7th and D Streets S.W., Washington, D.C. 20406 (202) 472-2205 or 2140	Federal Specification (General Services
GA 1603 Orrington Avenue, Evanston, IL 60201 (312) 491-1744	Gypsum Association
gpm	gallons per minute
GSA F and 18th Streets N.W., Washington, D.C. 20405 (202) 655-4000	General Services Administration
MIL (U.S. Department of Defense) Naval Publications and Forms Center 5801 Tabor Avenue, Philadelphia, PA 19129	Military Standardization Documents
MSHA	Mine Safety and Health Administration
NEC	National Electrical Code (by NFPA)
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association

Batterymarch Park, Quincy, MA 02269

NIOSH Health	National Institute for Occupational Safety and
NIST (U.S. Department of Commerce) Gaithersburg, MD 20234 (301) 921-1000	National Institute of Standards and Technology
OSHA (U.S. Department of Labor) Government Printing Office, Washington, D.C. 20402	Occupational Safety and Health Administration
PAT	Proficiency Analytical Testing
PS Government Printing Office, Washington, D.C. 20402	Product Standard of NIST
s/mm^2	structure per square millimeter (of filter surface)
TEM	Transmission Electron Microscopy
UL 333 Pfinngsten Road, Northbrook, IL 60062	Underwriters Laboratories

1.6 SUBMITTALS

NOTE: Edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A “G” following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a “G”. Only delete an existing “G” if the submittal item is not complex and can be reviewed through the Contractor’s Quality Control system. Only add a “G” if the submittal is sufficiently important or complex in context of the project.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. For information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.

NOTE: The submittals required for each project are very dependent upon the removal method to be used. Edit the submittals paragraph accordingly.

SD-03 Product Data

Local exhaust equipment; G

Vacuums; G

Respirators; G

Pressure differential automatic recording instrument; G

Amended water; G

Glovebags; G

Material Safety Data Sheets (MSDS) for all materials proposed for transport to the project site; G

Encapsulants; G

SD-06 Test Reports

Air sampling results; G

Pressure differential recordings for local exhaust system; G

Asbestos disposal quantity report; G

Encapsulation test patches; G

Clearance sampling; G

SD-07 Certificates

****
NOTE: Include contractor's and worker's licenses for Virginia projects.
****
Asbestos hazard abatement plan; G

Testing laboratory; G

Private qualified person documentation; G

Contractor's license; G

Competent person documentation; G

Worker's license; G

Landfill approval; G

Employee training; G

Medical certification requirements; G

Waste shipment records and if applicable exemption report; G

Respiratory Protection Program; G

Delivery tickets; G

Vacuums; G

Water filtration equipment; G

Ventilation systems; G

Other equipment used to contain airborne asbestos fibers; G

Chemical encapsulants sealers; G

Notifications

Show compliance with ANSI Z9.2 by providing manufacturers' certifications.

SD-11 Closeout Submittals

Notifications; G

Rental equipment; G

Respirator program records; G

Permits and licenses; G

Protective clothing decontamination quality control records; G

Protective clothing decontamination facility notification; G

1.7 QUALITY ASSURANCE

1.7.1 Private Qualified Person Documentation

NOTE: Edit requirement for private qualified person to have licensing.

Submit the name, address, and telephone number of the Private Qualified Person (PQP) selected to prepare the Asbestos Hazard Abatement Plan and documented evidence that the PQP has successfully completed training in and is accredited and where required is certified as, a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer as described by 40 CFR 763 and has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The PQP shall be appropriately licensed in the Commonwealth of Virginia as a Project Monitor. The PQP and the asbestos contractor shall not have an employee/employer relationship or financial relationship which could constitute a conflict of interest. The PQP shall be a first tier subcontractor.

1.7.2 Competent Person Documentation

NOTE: Edit requirement for licensing.

Submit training certification and a current Commonwealth of Virginia Asbestos Contractor's and Supervisor's License.

1.7.3 Worker's License

NOTE: Edit requirement for licensing.

Submit documentation that requires all workers have a current Commonwealth of Virginia Asbestos Workers License.

1.7.4 Contractor's License

NOTE: Edit requirement for licensing.

Contractor shall have current Virginia asbestos contractor's license. Submit a copy of the asbestos contractor's license issued by the Commonwealth of Virginia.

1.8 REQUIREMENTS

1.8.1 Scope of Work

NOTE: Specify the form, condition and approximate quantity square feet or linear feet of asbestos material to be controlled in the first blank and the location of the material in the second blank. Example: "The asbestos work includes the demolition and removal of 300 feet of 8 inch diameter asbestos insulation located on existing steam piping indicated to be removed in the boiler room." or "The asbestos work includes the encapsulation of 3,000 square feet of sprayed on asbestos containing fire proofing materials located above the ceiling throughout the structure."

The use of this section in the contract specification means that known asbestos material is involved. Estimate the quantity and specify as unit price items in Section 00200, "Instructions to Bidders" or Section

01200, "Price and Payment Procedures" per standard practice of the activity preparing the contract.
NOTE: Include reference to 40 CFR 763 when asbestos work occurs in a public or private school Grades K thru 12.
****
NOTE: Nonfriable ACM may not require special handling. However, during demolition and removal of this material dust and airborne asbestos fibers will sometimes be released. If the project contains nonfriable asbestos which may release fibers when demolished and removed, the nonfriable asbestos shall be removed in the same way as friable asbestos. Include "Under normal.... specified herein.", if material traditionally defined as non-friable asbestos materials are to be removed.
****
NOTE: The appropriate engineering control technique must comply with the requirements outlined in 29 CFR 1926.1101 which is selected based on existing conditions, but must be that technique that provides the best control during abatement at most reasonable cost.
****

The work covered by this section includes the handling and control of asbestos containing materials and describes some of the resultant procedures and equipment required to protect workers, the environment and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of any asbestos containing materials generated by the work. More specific operational procedures shall be outlined in the Asbestos Hazard Abatement Plan called for elsewhere in this specification. The asbestos work includes the demolition and removal encapsulation of asbestos containing material located in the building which is governed by 40 CFR 763. Under normal conditions non-friable or chemically bound materials containing asbestos would not be considered hazardous; however, this material may release airborne asbestos fibers during demolition and removal and therefore must be handled in accordance with the removal and disposal procedures as specified herein. Provide negative pressure enclosure techniques as outlined in this specification. The Navy will evacuate the building /work area during the asbestos abatement work. All asbestos removal work shall be supervised by a competent person as specified herein.

1.8.2 Medical Requirements
Provide medical requirements including but not limited to medical surveillance and medical record keeping as listed in 29 CFR 1926.1101.

1.8.2.1 Medical Examinations
Before exposure to airborne asbestos fibers, provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101 or other pertinent State or local directives. This requirement must have been satisfied within the 12 months prior to the start of work on this contract. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting radiologist and mark medical record jackets with the word "ASBESTOS."

1.8.2.2 Medical Records
NOTE: Medical records shall be retained at least 50 years. Some States require longer retention periods. Check with the State in which the project is located for the required retention time.

Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of indefinite time 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 (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

1.8.3 Employee Training
NOTE: Include bracketed sentence where required by law, regulation or statute.

Submit certificates, prior to the start of work but after the main abatement submittal, signed by each employee indicating that the employee has received training in the proper handling of materials and wastes that contain asbestos in accordance with 40 CFR 763; understands the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of the respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis. Certificates shall be organized by individual worker, not grouped by type of certification. Post appropriate evidence of compliance with the training requirements of 40 CFR 763. Train all personnel involved in the asbestos control work in accordance with United States Environmental Protection Agency (USEPA) Asbestos Hazard Emergency Response Act (AHERA) training criteria or State training criteria whichever is more stringent. The Contractor shall document the training by providing: dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the Contracting Officer. Furnish each employee with respirator training and fit testing administered by the PQP as required by 29 CFR 1926.1101. Fully cover engineering and other hazard control techniques and procedures. All asbestos workers shall have a current Commonwealth of Virginia asbestos worker's license.

1.8.4 Permits , Licenses, and Notifications

NOTE: The USEPA has delegated the responsibility of notification requirements to most States. Verify with the State and local authorities where the project is located whether the city, county, State, and/or USEPA has jurisdiction and whether a license is required.

For Virginia, use "Asbestos Control Clerk, Virginia Department of Labor" for the second sentence.

Obtain necessary permits and licenses 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 Regional Office of the United States Environmental Protection Agency (USEPA) Commonwealth's environmental protection agency, local air pollution control district/agency and the Contracting Officer in writing 20 working days prior to commencement of work in accordance with 40 CFR 61-SUBPART M and 16 VAC 25-20-30. Notify the Contracting Officer and other appropriate Government agencies in writing 20 working days prior to the start of asbestos work as indicated in applicable laws, ordinances, criteria, rules, and regulations. Submit copies of all Notifications to the Contracting Officer. Notify the local fire department 3 days prior to removing fire-proofing material from the building including notice that the material contains asbestos.

1.8.5 Environment, Safety and Health Compliance

NOTE: The designer shall research the State, regional and local laws, regulations, statutes, etc., and list by authority and document number in the blank spaces provided those which apply to the asbestos work to be performed by the Contractor.

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 as defined by the Government shall apply. The following laws, ordinances, criteria, rules and regulations regarding removal, handling, storing, transporting and disposing of asbestos materials apply:

a. 29 CFR 1926.1101

b. 40 CFR 61-SUBPART A

c. 40 CFR 61-SUBPART M.

d. 16 VAC 25-20-30.

1.8.6 Respiratory Protection Program
Establish and implement a respirator program as required by ANSI Z88.2, 29 CFR 1926.1101, and 29 CFR 1926.103. Submit a written description of the program to the Contracting Officer. Submit a written program manual or operating procedure including methods of compliance with regulatory statutes.

1.8.6.1 Respirator Program Records
Submit records of the respirator program as required by ANSI Z88.2, 29 CFR 1926.103, and 29 CFR 1926.1101.

1.8.7 Asbestos Hazard Control Supervisor
The Contractor shall be represented on site by a supervisor, trained using the model Contractor accreditation plan as indicated in the Federal statutes for all portions of the herein listed work.

1.8.8 Hazard Communication
Adhere to all parts of 29 CFR 1926.59 and provide the Contracting Officer with a copy of the Material Safety Data Sheets (MSDS) for all materials brought to the site.

1.8.9 Asbestos Hazard Abatement Plan
Submit a detailed plan of the safety precautions such as lockout, tagout, tryout, fall protection, and confined space entry procedures and equipment and work procedures to be used in the encapsulation, removal and demolition of materials containing asbestos. The plan, not to be combined with other hazard abatement plans, shall be prepared, signed, and sealed by the PQP. Provide a Table of Contents for each abatement submittal, which shall follow the sequence of requirements in the contract. Such plan shall include but not be limited to the precise personal protective equipment to be used including, but not limited to, respiratory protection, type of whole-body protection and if reusable coveralls are to be employed decontamination methods (operations and quality control plan), the location of asbestos control areas including clean and dirty areas, buffer zones, showers, storage areas, change rooms, removal, encapsulation method, interface of trades involved in the construction, sequencing of asbestos related work, disposal plan, type of wetting agent and asbestos sealer to be used, locations of local exhaust equipment, planned air monitoring strategies, and a detailed description of the method to be employed in order to control environmental pollution. The plan shall also include (both fire and medical emergency) response plans. The Asbestos Hazard Abatement Plan must be approved in writing prior to starting any asbestos work. The Contractor, Asbestos Hazard Control Supervisor, and QP shall meet with the Contracting Officer prior to beginning work, to discuss in detail the Asbestos Hazard Abatement Plan, including work procedures and safety precautions. Once approved by the Contracting Officer, the plan will be enforced as if an addition to the specification. Any changes required in the specification as a result of the plan shall be identified specifically in the plan to allow for free discussion and approval by the Contracting Officer prior to starting work.

1.8.10 Testing Laboratory
Submit the name, address, and telephone number of each testing laboratory selected for the sampling, analysis, and reporting of airborne concentrations of asbestos fibers along with evidence that each laboratory selected holds the appropriate State license and/or permits and certification that each laboratory is American Industrial Hygiene Association (AIHA) accredited and that persons counting the samples have been judged proficient by current inclusion on the AIHA Asbestos Analysis Registry (AAR) and successful participation of the laboratory in the Proficiency Analytical Testing (PAT) Program. Where analysis to determine asbestos content in bulk materials or transmission electron microscopy is required, submit evidence that the laboratory is accredited by the National Institute of Science and Technology (NIST) under National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analysis. The testing laboratory firm shall be independent of the asbestos contractor and shall have no employee or employer relationship which could constitute a conflict of interest.

1.8.11 Landfill Approval

NOTE: The USEPA has delegated the responsibility of approving landfills for the disposal of asbestos to most States. Verify with the State in which the project is located whether the State or USEPA has jurisdiction and what laws apply.

Submit written evidence that the landfill is for asbestos disposal by the U.S. Environmental Protection Agency, Region 3, Air Enforcement Section (38W12), and local regulatory agencies. Within 3 working days after delivery, submit detailed delivery tickets, prepared, signed, and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill. Submit a copy of the waste shipment records within 1 day of the shipment leaving the project site.

1.8.12 Medical Certification

Provide a written certification for each worker and supervisor, signed by a licensed physician indicating that the worker and supervisor has met or exceeded all of the medical prerequisites listed herein and in 29 CFR 1926.1101 and 29 CFR 1926.103 as prescribed by law. Submit certificates prior to the start of work but after the main abatement submittal.

1.9 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.9.1 GENERAL:

Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work. All service connections shall meet current, applicable VUSBC requirements. Lockout/tagout procedures shall be performed for mechanical, plumbing and electrical systems, as applicable, per OSHA requirements.

1.9.2 SCAFFOLDING:

During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged. Clean debris as necessary from non-slip surfaces.

At the completion of abatement work, clean all construction aids within the Work Area, wrap in one layer of 6 mil polyethylene sheet and seal before removal from the Work Area.

1.9.3 INSTALLATION:

Use Virginia licensed tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the work.

Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

1.9.4 WATER SERVICE:

a.Hot water shall be supplied by the Contractor at a minimum temperature of 100□F. Controls for hot and cold water will be controlled by the person in the shower. Supply hot and cold water to the Decontamination Unit.

b. Maintain hose connections and outlet valves in leakproof condition.

c. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

d. Temporary Water Service Connection: All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation at the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without

damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

e. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each Work Area and to each decontamination unit.

f. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shutoff nozzles and equipment.

g. Water supply to hoses shall be halted at the end of each workday.

1.9.5 ELECTRICAL SERVICE:
General: Comply with applicable VUSBC for materials and layout of temporary wiring and electrical power.

1.9.6 TEMPORARY LIGHTING:
Provide the following where natural lighting or existing building lighting does not meet the required light level: One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas, provide one 100-watt incandescent lamp every 50 feet. In stairways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere by combined use of daylight, general lighting, and portable plug-in task lighting.

Provide lighting in the Decontamination Unit as required to supply adequate illumination which is approved by Project Monitor.

1.9.7 TEMPORARY HEAT:
Provide temporary heat where indicated or needed for performance of the work. If work is completed during the winter months, sufficient heat shall be supplied to avoid freezing of water and waste piping systems in the building.

1.9.8 SANITARY FACILITIES:
Use of the Owner's existing toilet facilities, as indicated, will be permitted, so long as these facilities are properly cleaned and maintained in a condition acceptable to the Project Officer. At completion, restore these facilities to their condition at the time of initial use. Written permission from the Project Officer must be obtained prior to their use.

1.9.9 FIRE PREVENTION:
Throughout the project, the Contractor shall maintain unobstructed access to emergency/fire exits for use by abatement workers and building occupants as approved by the Fire Marshal. Comply with the applicable recommendations of NFPA Standard 10, "Standard for Portable Fire Extinguishers." Place fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area, in the Equipment Room, and outside Work Area in the Clean Room. Assure that type “A”, “B”, and “C” extinguishers are available.

1.10 WORK AREA CONTAINMENT

1.10.1 WORK AREA PREPARATION AND CONTAINMENT:

a. The Work Area is the location where asbestos-abatement work occurs. It is a function of the extent of

work in the Contract and sized according to project needs. It may be a portion of a room, a single room, or a complex of rooms. The Work Area is considered contaminated during the work and must be isolated from the balance of the building and decontaminated at the completion of the asbestos-control work. All persons entering the Work Area must be using the appropriate respiratory and personnel protection measures.

All abatement activities shall be limited to the Work Area. All electrical sources shall be locked out of the Work Area and a temporary source obtained, equipped with Ground Fault Circuit Interrupters (GFCIs).

b. Exterior non-friable RACM - The area surrounding the building shall be restricted during asbestos abatement. Polyethylene sheeting shall be placed from the building's edge extending out 10 to 30 feet. A construction barricade shall surround the designated work area.

c. The Contractor shall 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. If the area beyond the Work Area(s) becomes contaminated with asbestos-containing dust or debris as a consequence of the work, abatement work shall be halted and those areas are to be cleaned immediately. The Contractor shall perform all such required cleaning or decontamination at no additional cost to Owner.

d. Remove all uncontaminated removable furniture, equipment, and/or supplies from the Work Area before commencing work, or completely cover these items with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, securely taped in place with duct tape.
e. Coordinate with the County to isolate and shut down the affected HVAC systems or any other system bringing air into or out of the Work Area. Seal all vents in the area with polyethylene sheeting taped securely in place, unless vents directly feed air for water/waste systems actively in use. Provide for complete isolation of the Work Area from the remaining portion of the building.

1.10.2 CONTROL ACCESS:
Permit access to the Work Area only through the Personnel Decontamination Area. All other means of access shall be closed off, sealed and posted with warning signs displayed on the clean side of the sealed access.

For exterior abatement, the ground area shall be restricted by use of rope and construction tape or barricades. Polyethylene sheeting shall be laid down in all directions (10 feet of ground coverage for each 2 floors not to exceed 30 feet in any direction).

1.10.3 CRITICAL BARRIERS:
a. Seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other penetration into the Work Area with polyethylene sheeting at least 6 mil in thickness, secured in place with spray glue and duct tape. Completely separate the Work Area from other portions of the building and the outside by constructing barriers, using polyethylene sheeting at least 6 mil in thickness, spray glue, and duct tape. Maintain containment until all work including project decontamination, is completed. Take care in sealing off lighting fixtures and other heat producing objects to avoid melting or burning of the sheeting, or overheating of equipment.

b. For exterior abatement, coordinate with the Project Officer to isolate the HVAC system if the air intake or return is located on or near the Work Area. Seal all vents in the area with polyethylene sheeting glued and taped securely in place, unless these vents directly feed air for water/waste systems actively in use. If sealing vents is not feasible, extend the vents up and over the work area to avoid contamination.

c. Provide sheet polyethylene barriers at least 6 mil in thickness as required to completely seal penetrations from the Work Area into adjacent areas. Seal the perimeter of all sheet polyethylene barriers with spray cement and duct tape.

d. If polyethylene sheeting can not be secured by glue and tape alone, then mechanically support

polyethylene independently so that seals do not support the weight of the polyethylene. Other methods may be used if approved in writing by the Owner's Representative. Clean all overspray materials prior to construction of the Critical Barrier.

1.10.4 PRIMARY BARRIER:
a.Clean all contaminated furniture, equipment, and/or supplies with a HEPA filtered vacuum cleaner or by wet cleaning prior to being moved or covered. All equipment, furniture, etc., is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by the Owner.

b. Clean all surfaces in the Work Area with a HEPA filtered vacuum or by wet wiping prior to the installation of any polyethylene sheeting.

c.Enclose Work Areas with at least two (2) layers of 6 mil polyethylene sheeting on floor and walls, or as otherwise directed on the Contract Drawings or in writing by the Owner's Representative.

d.Cover the floor of the Work Area with 2 individual layers of clear polyethylene sheeting, each at least 6 mil in thickness, turned up at the walls by at least 12 inches. Form a sharp right-angle bend at the junction of the floor and the wall so that there is no radius that could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct-tape all seams in the floor covering. Locate the seams in the top layer six feet (6') from, or at right angles to, the seams in the bottom layer. Install the sheeting so that top layer can be removed independently of the bottom layer. If the carpet is to be saved, then cover the carpeting with three (3) layers of polyethylene sheeting at least 6 mil in thickness and place a corrugated cardboard sheet between the top and middle layers of the polyethylene.

e.Cover the polyethylene in areas where scaffolding is to be used with a single layer of 1/2" CDX plywood or 1/4" tempered hardboard. Wrap the edges and corners of each sheet with duct tape. At the completion of abatement work, wrap the plywood or hardboard with 2 layers of 6 mil polyethylene and move to the next Work Area or dispose of the boards as an asbestos-contaminated waste material.

f. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, etc., which cover any part of the surface to be worked on. Remove all general construction items such as cabinets, casework, doors window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference. Unless otherwise declared in writing by the Project Officer, clean, decontaminate, and reinstall all such materials, upon completion of all removal work, with materials, finishes, and workmanship to match existing installations before start of work.

g. Cover all walls in Work Area including "Critical Barrier" polyethylene barriers with one layer of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical Barrier" sheet polyethylene barriers. Tape, with duct tape, all joints including the floor joining, as indicated in this specification or in writing by the Owner's Representative.

Stairs and Ramps: Do not cover stairs or ramps with unsecured polyethylene sheeting. Where stairs or ramps are covered with polyethylene, provide 3/4" exterior grade plywood treads securely held in place, over the polyethylene. Do not cover rungs or rails of ladders with any type of protective materials

1.10.5 EXTENSION OF WORK AREA:
If the enclosure barrier is breached in any manner that could allow the release of asbestos debris or airborne fibers outside of work area, then add affected area to the Work Area, enclose it as required by this section of the specification, and decontaminate the area.

1.10.6 SECONDARY BARRIER:
Install a secondary layer of polyethylene as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work. Install a clear 6 mil sheet of polyethylene over the primary barrier as a drop cloth in all areas where asbestos removal work is to be carried out. Completely cover

the floor with sheet polyethylene. Where the work is within 10'-0" of a wall, extend the secondary barrier up the wall to the ceiling. Support the sheet polyethylene on the wall with spray glue and duct tape and seal the top of the secondary barrier polyethylene to the primary barrier with spray glue and duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall supports as necessary to support the sheet polyethylene and prevent its falling during removal operations.

1.11 NEGATIVE PRESSURE ENCLOSURE

1.11.1 QUALITY ASSURANCE:

Prior to job start up and each time a new containment area is installed, the Contractor shall provide qualitative evidence to the Owner's Representative that the directional air flows are correct and will provide high level containment. Ventilation smoke tubes can be used for this test.

Monitor and record the pressure differential across the Decontamination Area with a differential pressure meter or manometer equipped with a strip chart. The two sensing ports must be located at appropriate points.

1.11.2 PRESSURE DIFFERENTIAL:

Except for exterior non-friable abatement, provide a fully operational pressure differential system within the Work Area maintaining a minimum pressure differential across Work Area enclosures of 0.02 inches of water column (WC). Demonstrate to the Owner's Representative the pressure differential by use of a pressure differential meter or a manometer before disturbance of any asbestos-containing materials. The pressure differential must operate 24 hours a day, seven days a week for the duration of the project until final clearance has been given by the Owner's Representative.

1.11.3 MONITORING:

Continuously monitor and record the pressure differential between inside the Work Area and outside the Work Area with a monitoring device incorporating a strip chart recorder.

1.11.4 VENTILATION AND EXHAUST:

a. Determining the Ventilation Requirements: Provide fully operational pressure differential systems supplying a minimum of one air change every 15 minutes. Determine the volume in cubic feet of the Work Area by multiplying floor area by ceiling height. Determine the total ventilation requirement in cubic feet per minute (cfm) for the Work Area by dividing this volume by the air exchange time.
Ventilation Required (cfm) = Volume of Work Area (cu. ft.)/15 min.

b. Determine number of units needed to achieve 15-minute change rate by dividing the ventilation requirement (cfm) above by capacity of exhaust unit(s) used. "Capacity of a unit" for purposes of this section is the capacity in cfm with fully loaded filters (pressure differential that causes loaded filter warning light to come on) in the machine's labeled operating characteristics.
Number of Units Needed = Ventilation Requirement(cfm)
Capacity of Unit with Loaded Filters (cfm)

Add one (1) additional unit as a backup AFD in case of equipment failure or machine shutdown for filter changing.

c. Location of Exhaust Units: Locate the exhaust unit(s) so that the makeup air enters the Work Area primarily through the decontamination facilities and traverses the Work Area as much as possible. This may be accomplished by positioning the exhaust unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place the end of the exhaust unit or its exhaust duct through an opening in the polyethylene critical barrier or wall covering. The polyethylene around the unit or duct shall then be sealed with duct tape. Air shall be exhausted outside of the building, unless authorized in writing by the Owner's Representative.

d.Supplemental Makeup Air Inlets: Provide, where required by the Owner's Representative, openings in the polyethylene sheeting that allow air from outside the building into the Work Area. Locate supplemental makeup air inlets as far as possible from the exhaust unit(s) (e.g., on an opposite wall), off the floor, preferably near the ceiling, and away from barriers that separate the Work Area from occupied clean areas. Cover the openings with polyethylene flaps to reseal automatically if the pressure differential system shuts down for any reason. Spray the flap and around the penetration with spray adhesive so that flap automatically seals to the barrier if it closes.

1.10.5 USE OF THE PRESSURE DIFFERENTIAL SYSTEM:
a. General: Each air filtration device (AFD) unit shall be serviced by a dedicated minimum 115V-20A circuit with a current overload protection device tied into an existing building electrical panel that has sufficient spare capacity to accommodate the current load of all connected AFDs. Dedication of an existing circuit may be accomplished by shutting down and locking out existing loads on the circuit.

b.Provide the appropriate number of Air Filtration Devices (AFDs) in the vicinity of the work. Arrange the AFDs so that airflow is into the Work Area and oriented in a direction away from the work. Extend a 12" diameter, flexible, non-collapsing duct from the intake end to a point no more than 4'-0" from any scraping or nylon brushing activity.

c. Locate the intake of the duct so that airflow is directed horizontally and slightly downward into intake. Replace the pre-filter on the AFD at intervals no greater than 60 minutes. Do not allow more than one scraping or brushing activity per AFD.

d.Testing the System: Test the pressure differential system before any ACM is wetted or removed. After the Work Area has been prepared, the decontamination facility set up, and the exhaust unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of the pressure differential system to the Owner's Representative, by allowing the units to run for a minimum of 24 hours prior to disturbing the ACM.

e.Demonstration of a properly operating pressure differential system to the Owner's Representative will include, but not be limited to, the following:
That the polyethylene barriers and sheeting moves lightly in towards the Work Area, but does not tear away from taped seams and edges. Curtain of the Decontamination Area moves lightly in towards the Work Area.

That there is a noticeable movement of air through the Decontamination Area. Use a ventilation smoke tube to demonstrate the air movement from the Clean Room to the Shower Room, from the Shower Room to the Equipment Room, and from the Equipment Room to the Work Area,

Use smoke tubes to demonstrate air motion across all areas in which work is to be performed.

f. Modify the pressure differential system as necessary to successfully demonstrate the above items.

g. Use of System During Abatement Operations: Start the exhaust units before beginning work (before any ACM is disturbed). After the abatement work has begun, run the units continuously to maintain a constant pressure differential until decontamination of the Work Area is complete. Do not turn off the units at the end of the work shift or when the abatement operations temporarily stop.

Do not shut down the pressure differential system during encapsulating procedures unless authorized by the Owner's Representative in writing.

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

i.At the completion of the abatement work, allow the AFDs to run to remove airborne fibers that may have been generated during the abatement work and cleanup and to purge the Work Area with clean makeup air. The AFDs may be required to run for an extended time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

j. Dismantling the System: When a final inspection and the results of final air sampling indicate that the area has been successfully decontaminated, the exhaust units may be decontaminated and removed from the Work Area. Before removal of the AFD units from the Work Area, remove and properly dispose of the pre-filters and seal the intake to the machine with 6 mil polyethylene to prevent environmental contamination from the primary (HEPA) filter of each AFD.

1.12 WORKER PROTECTION

1.12.1 GENERAL:

a .Except for respiratory protection, this section describes the equipment and procedures required for protecting workers from exposure to asbestos and other workplace hazards. Provide separate personnel and equipment decontamination facilities. Require that the Personnel Decontamination Area (hereinafter "Decontamination Area" or "Decon") be the only means of ingress and egress for the Work Area. Require that all equipment and ACM waste exit the Work Area through the Equipment Decontamination Area (hereinafter "Waste Load-out"). Locations of decontamination if shown on drawings contained within this specification, are approximate. Exact locations or changes to drawings shall be determined at the pre-construction meeting by the Owner's Representative.

b. Provide worker protection as required by the most stringent OSHA, EPA, or Virginia standards applicable to the work involved. The following procedures, at a minimum, are to be adhered to regardless of fiber count in the Work Area.

c. Each time the Work Area is entered, remove all street clothes in the Clean Room of the personnel decontamination unit, put on a new disposable coverall, and a clean respirator. Proceed through Shower Room to Equipment Room and put on work boots and hard hat, if necessary.

1.12.2 WORKER TRAINING:

Workers shall be trained in accordance with 29 CFR 1926.1101, 40 CFR 61, 40 CFR 763 and Section 2.1-526.14 and 36-99.7 of the Code of Virginia. Additionally, all workers shall receive training on the dangers inherent in handling asbestos and breathing asbestos dust, in proper work procedures, and personal and area protective measures.

1.12.3 MEDICAL EXAMINATIONS:

Provide medical examinations, in accordance with federal requirements for all workers who may encounter an airborne fiber level of 0.1 fibers/cubic centimeters (f/cc) or greater for an 8-hour time weighted average. In the absence of specific airborne fiber data, provide medical examinations for employees who will enter the Work Area for any reason. Examinations shall at a minimum meet OSHA requirements as set forth in 29 CFR 1926.1101.

1.12.4 CONTRACTOR'S PERSONAL MONITORING:

The Abatement Contractor will be responsible for compliance with all OSHA and Virginia personal sampling requirements including calculating time weighted average (TWA) worker exposure excursion limits, Negative Exposure Assessment (NEA), posting requirements, and the disclosure of information.

1.12.5 PERSONNEL DECONTAMINATION AREA LAYOUT AND PURPOSE:

A.For interior abatement, provide a Decontamination Area to include a Clean Room, Shower Room, and Equipment Room connected in a series. Require all persons to pass through this Decontamination Area for entry to or egress from the Work Area except for fire or health emergency response. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through the Decontamination

Area.

B.For exterior non-friable abatement, build a two or three chamber decontamination area, as determined by the Owner's Representative, with a separate waste load-out area. The decon area shall be constructed at the entrance to the Work Area, but need not be contiguous. A single equipment room shall be connected to the shower, which shall be connected to a clean room. All personnel shall dispose of coveralls as ACM waste and shower when exiting the Work Area. A solid wall perimeter shall be constructed around any part of the decontamination area located outside the building and not protected by existing structures. All doors shall be lockable with hasp locks on the outside to secure the Work Area during non-work hours.

C.Clean Room: Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing. Construct, using polyethylene sheeting, at least 6 mil in thickness, to provide an airtight seal between the Clean Room and the rest of the building. Locate so that access to Work Area from Clean Room is through Shower Room. Separate Clean Room from the building by a polyethylene doorway.

Require workers to remove all street clothes in this room, dress in clean disposable coveralls, and don respiratory protection equipment. Do not allow asbestos-contaminated items to enter this room. Require workers to enter this room either from outside the structure dressed in street clothes or naked from the showers.

An existing room may be utilized as the Clean Room if it is suitably located and of a configuration whereby workmen may enter the Clean Room directly from the Shower Room. Protect all surfaces of room with two layers of 6 mil polyethylene. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction, detailing layout and protective measures proposed.

Maintain floor of Clean Room dry and clean at all times. Do not allow overflow water from shower to wet floor in Clean Room.

Damp-wipe all surfaces twice after each shift change with a disinfectant solution.

Provide a continuously adequate supply of disposable bath towels.

Provide posted information for all emergency phone numbers and procedures.

Provide one (1) storage locker per employee.

D. Shower Room: Provide a completely water-tight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Clean Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining floor in shower room at elevation of top of pan.

Separate this room from the rest of the building with air-tight walls fabricated of 6 mil polyethylene.

Provide splash proof entrances to Clean Room and Equipment Room with 2 doors arranged in the following configuration:
Doors shall be fabricated from overlapping sheets with openings a minimum of three feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between entrance and exit of any room.

If the decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4-inch hardboard or 1/2-inch plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness, covering the top of the "ceiling."

Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.

Provide a soap dish and a continuously adequate supply of soap and maintain these in a sanitary condition.

Provide a continuously adequate supply of dry, disposable towels.

Arrange the shower so that water from showering does not splash into the Clean Room or Equipment Rooms.

Arrange the water shutoff and drain pump operation controls so that a single individual can shower without assistance from either inside or outside the Work Area.

Pump the waste water to the drain. Provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change the filters daily or more often if necessary. Locate the filters inside the shower unit so that the water lost during filter changes is caught by shower pan.

E. Equipment Room (contaminated area): A change and transit area for workers, separated from the Work Area by a 6 mil polyethylene flap doorway, used for storage of contaminated work equipment, footwear and work clothing.

Separate this room from the rest of the building with air-tight walls fabricated of 6 mil polyethylene.

Separate this room from the Shower Room with a weighted 6 mil polyethylene flap doorway.

F.Work Area Separation: Separate Work Area from the Equipment Room by 3 polyethylene sheets. The Contractor's employees shall not eat, drink, smoke, chew gum or tobacco or apply cosmetics in the Work Area.

If the airborne asbestos level in the Work Area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment Room and the Work Area. Damp-wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil polyethylene per shift change and remove contaminated layer after each shift.

1.12.6 CONSTRUCTION OF DECONTAMINATION AREA:
a. Walls and Ceiling: Construct air-tight walls and ceiling using polyethylene sheeting, at least 6 mil in thickness. Attach walls and ceiling to the existing building components or a temporary framework.

If the decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4-inch hardboard or 1/2-inch plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness covering the top of the "ceiling."

b.Floors: Use 2 layers (minimum) of 6 mil polyethylene sheeting to cover floors in the Equipment, Shower (underneath shower pan), and Clean Rooms. Provide an additional layer in the Equipment Room for every shift change expected. Roll one layer of 6 mil polyethylene from Equipment Room into Work Area after each shift change. Provide a minimum of two (2) layers of polyethylene at all times. Use only clear polyethylene to cover floors.

c.Doors: Doors shall be fabricated from 3 overlapping sheets with openings a minimum of three feet (3') wide. Configure the doors so that sheeting overlaps adjacent surfaces. Weight sheets at bottoms as

required so that they quickly close after being released. Put arrows on the sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between the entrance and exit of any room.

d.Visual Barrier: Where the decontamination area is immediately adjacent to and within view of occupied areas, provide an extra visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct the barrier with wood or metal studs covered with minimum 1/4-inch thick hardboard or 1/2-inch thick plywood. Where the solid barrier is provided, the extra opaque sheeting need not be used.

e. Electrical: Connect all electrical branch circuits in the Decontamination Area, including any pumps in Shower Room, to a ground-fault circuit protection device located outside the Work Area.

1.12.7 ALTERNATIVE DECONTAMINATION FACILITIES:
Alternate methods of providing decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.

1.12.8 PERSONNEL DECONTAMINATION PROCEDURES:
a. Entering Work Area: The worker enters Clean Room and removes street clothing, puts on clean disposable coveralls and respirator, and passes through the Shower Room into the Equipment Room.

Any additional clothing and equipment left in Equipment Room and needed by the worker are put on in the Equipment Room.

The worker then proceeds to the Work Area.

b.Exiting Work Area: Before leaving the Work Area, require the worker to remove all gross contamination and debris from disposable coveralls and feet. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment. Extra work clothing may be stored in the contaminated end of the Equipment Room. Disposable coveralls are placed in a bag for disposal with other ACM waste material. Decontamination procedures shall be followed by all individuals leaving the Work Area.

c. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid exposure to asbestos fibers while showering. The following procedure is required as a minimum:

Thoroughly wet body, including hair and face. If using a PAPR, hold blower unit above head to keep canisters dry (if applicable to the type of respirator).

With respirator still in place, thoroughly wash body, hair, respiratory face piece and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps. Do not saturate the respirator cartridges.

Completely wet hair, face, and respirator. Take a deep breath, and while holding breath or exhaling slowly, remove respirator and hold it away from the face before starting to inhale.

Carefully wash facepiece of respirator inside and out, using a wet towel to avoid direct water streams hitting the cartridges.If using PAPR: shut down in the following sequence: 1) cap inlets to filter cartridges, 2) turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit), 3) thoroughly wash blower unit and hoses, 4) carefully wash battery pack with wet towel (be extremely cautious of getting water in battery pack as this

will short out and destroy battery).

Shower completely with soap and water.

Rinse thoroughly.

Rinse Shower Room walls and floor prior to exiting.

Proceed from shower to Clean Room, dry body and respirator with disposable towel and change into street clothes or into new disposable work items.

Store respirator in sealed container or bag with wearer's name or identification.

1.13 RESPIRATORY PROTECTION

1.13.1 GENERAL:

a. Instruct and train each worker involved with friable ACM in proper use of respiratory protection equipment and require that each worker always wear a respirator, properly fitted on the face, in the Work Area from the start of any operation that may produce airborne asbestos fibers until the Work Area is completely decontaminated and meets clearance criteria. Use respiratory protection appropriate for the fiber concentrations encountered in the workplace or as required for other toxic or oxygen-deficient situations encountered. This includes protection from organic vapors which may be present in spray adhesives or mastic removers.

b. Respirators Not Permitted: Do not use single-use disposable or quarter-mask respirators for any abatement project. Additionally, respirators with faulty, missing, altered, or substituted parts are not permitted on abatement projects.

c. Respiratory Protection Program: Comply with OSHA 29 CFR 1910.314 and 1926.103 and ANSI Z88.2 "Practices for Respiratory Protection." Require that respiratory protection be used at all times when there is any possibility of disturbance of ACM, whether intentional or accidental.

Require that an acceptable respirator as specified herein be worn by anyone in an asbestos Work Area at all times, regardless of activity, during a period that starts with any operation that could cause release of airborne fibers until the area has been cleared for re-occupancy; unless a Negative Exposure Assessment (NEA) demonstrates that worker exposure during an operation is expected to be consistently below the PEL.

1.13.2 FIT TESTING:

Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a trained industrial hygienist or equivalent. Fit test the types of respirator to be actually worn by each individual. Allow a person to use only those respirators for which he has been trained and fit tested. Provide documentation of current fit tests for each respirator worn by every worker.

1.13.3 EQUIPMENT

Provide full or half-face powered air purifying respirators until a baseline airborne fiber concentration can be determined. Provide respiratory protection to workers to equal or exceed the protection factor required by OSHA 29 CFR 1926.1101 based on the Owner's Representative's air monitoring results for total fibers-in-air. If fiber-in-air concentrations are high enough to require greater protection, then workers shall don appropriate respirators as needed.

1.12.4 POWERED AIR PURIFYING RESPIRATORS (PAPR):

When using powered air purifying respirators, a sufficient supply of charged replacement batteries, new filters, and a flow test meter shall be available in the Clean Room. Equip full-face respirators with a nose

cup or other anti-fogging device as would be appropriate for use in air temperatures less than 40 degrees Fahrenheit.

Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so workers can change filters at any time that flow through the facepiece decreases to the level at which the manufacturer recommends filter replacement. Require, regardless of flow and for maximum filter use, filter cartridges be replaced daily. Require entire exterior housing of respirator including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be washed each time a worker leaves the Work Area. Caution will be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while the other is in use. A PAPR shall be provided to any employee who requests such, as long as the respirator provides adequate protection, based on air monitoring data.

1.12.5 SUPPLIED-AIR RESPIRATORY SYSTEMS (Type C):
Type "C" Respirator: Continuously monitor the air system operation, including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual, trained by manufacturer of the equipment in the use, operation, and maintenance of the system, to provide this monitoring. Do not assign other duties to this individual that will take him/her away from monitoring the air system.

Provide air used for breathing in Type "C" supplied-air respiratory systems that meets or exceeds standards set for CGA type 1 (Gaseous Air) Grade "D" respirable. Contractor's records shall show testing of supplied-air to meet these standards for all tanks of air used. Where a compressor is used to supply breathing air, a continuous in-line carbon monoxide monitor will be required with audible and visual alarm systems located at the compressor as well as in the Work Area. Additionally, an attendant will be specifically assigned to maintain the compressor or breathing air cylinder supply to assure continuous flow of air to workers.

1.13 EQUIPMENT
1.13.1 Rental Equipment

Provide a copy of the written notification to the rental company concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment

PART 2 PRODUCTS

2.1 SUMMARY
a.This section specifies administrative and procedural requirements governing the Contractor’s selection of products for use in the Project.
The Contractor’s Construction Schedule and the Schedule of Submittals are included under Section 1.4 SUBMITTALS.

b. Standards: Refer to Section 1.CODE, REGULATIONS and STANDARDS for applicability of industry standards to products specified.

c. Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 ENCAPSULANTS

Shall conform to current USEPA requirements, shall contain no toxic or hazardous substances as defined in 29 CFR 1926.59, and shall conform to the following performance requirements.

2.2.1 Removal Encapsulants

Requirement	Test Standard
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Life Expectancy - 20 years	ASTM C 732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96

2.2.2 Bridging Encapsulant

Requirement	Test Standard
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Life Expectancy - 20 years	ASTM C 732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E 119
Impact Resistance - Minimum 43 in/lb	ASTM D 2794 Gardner Impact Test
Flexibility - no rupture or cracking	ASTM D 522 Mandrel Bend Test

2.2.3 Penetrating Encapsulant

Requirement	Test Standard
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Life Expectancy - 20 years	ASTM C 732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96
Cohesion/Adhesion Test - 50 pounds of force/foot	ASTM E 736
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E 119
Impact Resistance - Minimum 43 in/lb	ASTM D 2794 Gardner Impact Test

Flexibility - no rupture or cracking	ASTM D 522 Mandrel Bend Test

2.2.4 Lock-down Encapsulant

Requirement	Test Standard
Flame Spread: 25, Smoke Emission - 50	ASTM E 84
Life Expectancy: 20 years	ASTM C 732 Accelerated Aging Test
Permeability: Minimum 0.4 perms	ASTM E 96
Fire Resistance: Negligible affect on fire resistance rating over 3 hour test (Tested with fireproofing over encapsulant applied directly to steel member)	ASTM E 119
Bond Strength: 100 pounds of force/foot (Tests compatibility with cementitious and fibrous fireproofing)	ASTM E 736

2.3 PROTECTIVE CLOTHING

2.3.1 Boots: For exterior non-friable removal, provide neoprene booties to wear over ANSI certified footwear. For interior removal, provide disposable shoe covers to wear with ANSI-certified footwear that are replaced each time a worker leaves the work area.
2.3.2Coveralls: Provide disposable full-body protective coveralls and disposable foot and head covers and require that they be worn by all workers and visitors in the Work Area. Provide a sufficient quantity for all required changes for all workers and visitors to the Work Area.
2.3.3Gloves: 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. Dispose of them as asbestos-containing waste at the end of the work shift or project.
2.3.4Goggles and Face Shields: Provide eye and face protection (goggles or face shields) as required by OSHA for all workers involved in scraping, spraying, stripping or any other activity which may potentially cause eye or face injury. Thoroughly clean and decontaminate goggles or face shields before removing them from Work Area at the end of the project.
2.3.5Hard Hats: Provide head protection (hard hats) meeting ANSI criteria, as required by OSHA for all workers and provide 4 spares for use by Owner's Representative 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 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 the Work Area at the end of the work.

2.4 PRODUCTS REGARDING RESPIRATORY PROTECTION

2.4.1 Air Purifying Respirators:
a.Respirator bodies: Provide half face or full face type respirators. 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.
b.Filter Cartridges: Provide, at a minimum, HEPA-type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists, including Asbestos-Containing Dusts and Mists" and color-coded in accordance with ANSI Z88.2. As applicable, provide combination cartridges for any solvents used that are labeled with the appropriate color code and NIOSH/MSHA Certification.

c. Respirators Not Permitted: Do not use single-use disposable or quarter-face respirators.

2.4.2 Supplied-air respirator systems:
a.Provide equipment capable of producing air of the quality and volume required by the above-referenced standards applied to the job-site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.
b.Aftercooler: Provide an aftercooler at entry to filter system capable of reducing temperatures to that of outside ambient air.
c. Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from motors or buildings.
d. Alarm Test: Each alarm system shall be tested at the start of each work shift in which the system will be in use. If the alarm system fails, the air supply shall not be used for breathing air.
e. Auxiliary Backup System: In atmospheres which contain sufficient oxygen (greater than or equal to 19.5% oxygen), provide a pressure-demand full facepiece supplied-air respirator equipped with an emergency backup HEPA filter.
f.Attendant: An attendant will be assigned to maintain the compressor or breathing-air cylinder supply to assure continuous flow of air to workers.
g. Backup Air Supply: Provide a reservoir of compressed air located outside the Work Area that will maintain a continuous source of air automatically available to each connected respirator in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the backup air supply to allow a minimum escape time of one-half hour times the number of connections to the Work Area. The air requirement at each connection is the required air supply of an average-sized adult male engaged in moderately strenuous activity.
h.Compressor Motor: Provide an electrically operated compressor. Do not use gas or diesel engines to drive compressor. Ensure that electrical supply available at the Work Area is adequate to energize motor.
i. Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart recorder carbon monoxide (CO) levels. Place monitors in the air line between compressor and backup air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under “Warning Devices.”
j. Compressor Shutdown: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:
Carbon monoxide (CO) concentrations exceed 5 PPM/V in the air line between the cascade system and backup air supply.
Compressor temperature exceeds normal operating range.
k. Compressor Location: Locate compressor outside of building so it will not impede access to the building and will not cause a noise or odor nuisance to occupants of the building.
l. Warning Device: Provide an in-line carbon monoxide monitor as a warning device that will operate independently of the building’s power supply. Locate the alarm so that it 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:
Compressor shutdown or other fault requiring use of backup air supply, or,
Carbon Monoxide (CO) levels in excess of 5 parts per million by volume (PPM/V).
m. Escape Air Supply: In atmospheres which are oxygen deficient (less than 19.5% 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 facepiece.
Facepiece and Hose: Provide full facepiece and hose by the same manufacturer that has been certified by NIOSH/MSHA as an approved Type “C” respirator assembly operating in pressure-demand mode.

2.4.3Self-Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of ½-hour 2260 PSI SCBA cylinders utilized for emergency situations.

2.5 SCAFFOLDING & LADDERS

Provide all scaffolding, ladders and/or staging, etc., as necessary to accomplish the work of this Contract. 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 all scaffolding shall comply with OSHA 29 CFR 1926.450 Subpart L, 1926.451 and 1926.452 and other applicable regulations.
Equip rungs of all metal ladders, etc., with an abrasive, non-slip surface.
Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.6 TEMPORARY HEAT
If necessary, provide temporary heating units that have been tested and labeled by UL. Use steam or hot water radiant heat where available, and where not available use electric resistant radiation supplied from a branch circuit with ground fault circuit interrupter. Under no circumstances shall forced-air or fan type units be utilized inside a Work Area.

2.7 TEMPORARY COOLING
Cooling Units: Provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.8 SELF-CONTAINED TOILETS
If toilets are not approved for use or available at the site, provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

2.9 FIRST AID
First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

2.10 FIRE EXTINGUISHERS
Provide Type “ABC” dry-chemical extinguishers or a combination of several extinguishers of NFPA recommended types. Fire extinguishers shall have an annual maintenance inspection and a monthly visual inspection card documenting the inspection dates in accordance with NFPA 10. Comply with the applicable recommendations of NFPA Standard 10, “Standard for Portable Fire Extinguishers.” Place fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area, in the Equipment Room, and outside Work Area in the Clean Room. Assure that type “A”, “B”, and “C” extinguishers are available.

2.11 ELECTRICAL SERVICE

2.11.1 GENERAL: Comply with applicable VUSBC for materials and layout of temporary wiring and electrical power.

2.11.2Lamps and Light Fixtures: Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.11.3 For power hand tools and task lighting, provide temporary double duplex outlets at each Decontamination Unit, located in Equipment Room. Provide a separate 110-120 Volt, 20 Amp circuit for each outlet (4 outlets per circuit).

2.12 TEMPORARY LIGHTING

Provide the following where natural lighting or existing building lighting does not meet the required light level: One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas, provide one 100-watt incandescent lamp every 50 feet. In stairways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere by combined use of daylight, general lighting, and portable plug-in task lighting.

Provide lighting in the Decontamination Unit as required to supply illumination approved by Project Monitor.

2.13 SHOWERS

2.13.1 Shower Pan: Provide a one-piece waterproof/leak-proof shower pan with no holes, specifically designed for the shower and is approved by the Owners Representative.

2.13.2 Shower Head and Controls: Provide a factory-made shower head producing a spray of water that can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shutoff is from inside the shower without requiring outside aid.

2.13.3 Filters: Provide progressive 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.

Primary Filter - Passes particles 20 microns and smaller

Secondary Filter - Passes particles 5 microns and smaller

2.13.4 Hose Bibb: Provide heavy bronze angle-type with wheel handle, vacuum breaker, and 3/4” Nationl Standard male hose outlet.

2.13.5 Shower Stall: In Clean Room, provide leak-tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material. The stall shall be approximately 4’ X 4’ square with minimum 6 feet-high sides. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4’-0” above drain pan. Connect drain to a reservoir, pump water from reservoir through filters to a drain. Mount filters inside shower stall on side wall beneath hose bibb. Shower stall shall be thoroughly washed down at the end of each work shift by the last worker exiting through the Decontamination Area.

2.13.6 Sump Pump: Provide a totally submersible waterproof sump pump with integral float switch. Provide a unit with a capacity to pump two times the intended volume of all showers or hoses supplying water to the sump through the filters specified herein. When the filters become loaded with debris, replacement is required. Provide a pump unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to the mechanism of the pump. Adjust the float switch so that a minimum of 3” remains between the top of the liquid and the top of the sump pan.

2.14 Warning Sign

Provide vertical format conforming to 29 CFR 1926.200, and 29 CFR 1926.1101 minimum 20 by 14 inches displaying the following legend in the lower panel:

Legend	Notation

Danger	one inch Sans Serif Gothic or Block
Asbestos	one inch Sans Serif Gothic or Block
Cancer and Lung Disease Hazard	1/4 inch Sans Serif Gothic or Block
Authorized Personnel Only	1/4 inch Gothic
Respirators and Protective Clothing are Required in this Area	1/4 inch Gothic

Spacing between lines shall be at least equal to the height of the upper of any two lines.

2.14.1 Warning Labels

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

2.15 AIR FILTRATION DEVICES (AFDs):
2.15.1GENERAL: Supply the required number of HEPA equipped AFDs to the site in accordance with these Specifications. Each unit shall include the following:

Cabinet: The cabinet shall be constructed of steel or other durable materials and able to withstand damage from rough handling and transportation. The width of the cabinet shall be less than 30 inches to fit through standard-size doorways. The cabinet shall be mounted on casters or wheels and sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance. Access to, and replacement of all air filters shall be from the intake end.
Fans: Rate the capacity of the fan according to the usable air-moving capacity under the actual operating conditions. Use a centrifugal-type fan.
HEPA Filters: The final filter shall be the HEPA type. The filter media must be completely sealed on all edges with a structurally rigid frame and provide a gasket-type seal. A continuous rubber gasket shall be located between the filter and the filter housing to form a tight seal. Each filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97% when challenged with 0.3 micron particles. Testing shall be in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Each filter shall bear a UL586 label to indicate the ability to perform under specified conditions.
Each filter shall be marked with: the name of the manufacturer, serial number, airflow rating, efficiency and resistance, and the direction of test air flow.
Prefilters: Prefilters that protect the final filter by removing the larger particles are required to prolong the

operating life of the HEPA filter. Two stages of prefiltration are required. The first-stage prefilter shall be a low-efficiency type (e.g., for particles 10 microns and larger). The second-stage (or intermediate) filter shall have a medium efficiency (e.g., effective for particles down to 5 microns). Prefilters and intermediate filters shall be installed either on or in the intake grill of the unit and held in place with special housings or clamps.
Instrumentation: Each unit shall be equipped with a manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. A table indicating the usable air-handling capacity for various static pressures on the Magnahelic gauge and filter change requirements shall be affixed near the gauge for reference. Provide units equipped with an elapsed time meter to show the total accumulated hours of operation.
Safety and Warning Devices: Each AFD shall have an electrical (or mechanical) lockout to prevent the fan from operating without a HEPA filter. Units shall be equipped with automatic shutdown system to stop the fan in the event of a major rupture in the HEPA filter or a blocked air discharge. Warning lights are required to indicate normal operation, excessive pressure drop across the filters (i.e., filter overloading), and too low of a pressure drop (i.e., major rupture in HEPA filter or obstructed discharge).Electrical components shall be approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit shall be equipped with current overload protection rated for the equipment. The motor, fan, fan housing, and cabinet shall be grounded.
Auxiliary Generator: Provide a gasoline powered, self-starting generator with a capacity adequate to power a minimum of 50% of the AFDs in operation at any time during the work. The generator shall be located in an area so that carbon monoxide does not enter work area.
Auxiliary Power Switch: Provide a switching relay which will automatically start the auxiliary generator and switch over power supplied to the AFDs to the auxiliary generator.

2.16 WETTING MATERIALS

For wetting prior to disturbance of ACM, use either amended water or a removal encapsulant. When the temperature at the point of wetting is below 0□ C (32□ F) it is not mandatory to use wet removal methods (but is recommended). During the periods when wetting operations are suspended due to freezing temperatures, the Contractor shall record the temperature in the Work Area at the start, middle, and end of each work day. Those records shall be maintained at the work-site and then retained as part of the record-keeping for at least 2 years.
Amended Water: Provide a mixture of surfactant and water that performs equal to or greater than one ounce of 50% polyoxyethylene ester and 50% polyoxyethylene ether, mixed with five (5) gallons of water, in wetting the ACM and retarding fiber release during disturbance of the material,. Other surfactants may be used, but must be reviewed and approved by the Owner's Representative prior to use.

2.17 OTHER MATERIALS AND EQUIPMENT

Roofing Cutter: Roofing cutters used for cutting roofing ACM shall be approved by the Project Officer prior to the start of the project and shall be equipped with local exhaust to capture emission at the source. Dust emissions from cutting any part of the roof shall be locally exhausted to a vacuum equipped with a HEPA Filter.
Waste Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled with three labels with text as follows:
First Label:Provide in accordance with CFR 1910.1200(f) OSHA Hazard Communication standard:
DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE FIBERS IS
HAZARDOUS TO YOUR HEALTH
Second Label:Provide in accordance with U.S. DOT regulation on hazardous waste marking, 49 CFR 171 and 172:

RQ-ASBESTOS WASTE
CLASS 9
NA2212-PG III

Third Label: Provide in accordance with EPA NESHAP. 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. Peel and stick type labels are expressly prohibited:
name of waste generator, location from which the waste was generated, and
names and addresses of the Contractor and transporter.

Barrier Tape
Glovebag
Bone saw
Water sprayer
Surfactant/amended water/removal encapsulant
Razor knife
Labels
HEPA Vacuum, wet/dry tank type with hose and attachments
Commercial type hand-held hot air blower or radiant heat source
Heavy duty scraper with 4-inch blade and 6 to 8-foot handle
Hammer
Weighted scraper with long handle
Mastic remover
Other tools as may be required

Lumber: Provide lumber of any grade or wood that is capable of withstanding the construction of the containment without losing its integrity from physical use, temperature and water.
Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6 mil thick as indicated, and clear, frosted, or black, as indicated.
Duct Tape: Provide duct tape in 2” or 3” widths as indicated, with an adhesive that is formulated to stick tenaciously to sheet polyethylene.
Spray Cement: Provide methylene chloride-free spray adhesive that sticks tenaciously to sheet polyethylene, in aerosol cans.

PART 3 EXECUTION

3.1 ABATEMENT GENERAL PROCEDURES

3.1.1 Occupants and Workers Protection

a. The Contractor shall take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos and to protect all persons in the immediate vicinity from any identified asbestos-containing materials. Such measures shall include the procedures and methods described herein, and compliance with applicable federal, state and local regulations.

b. Occupants and Workers protection shall be considered first and foremost throughout the project. The Contractor will post signs and advise building officials where work is commencing so there is no unauthorized entry. Abatement workers will use appropriate lights, clothing, proper respiratory protection, and implement the best engineering controls available for reducing airborne asbestos concentrations.

c. Wet removal is required **unless indicated otherwise in the Contract documents, to reduce the** possible release of asbestos fibers and assist the removal process.

d. Engineering controls shall be selected and implemented to assist in maintaining airborne fiber

concentrations below maximum use concentrations for the selected respiratory protective devices and for reducing airborne asbestos concentrations

e. Exterior abatement activities shall not utilize a negative pressure enclosure due to weather exposure and safety concerns.

3.1.2 Building Access: Entry and exit to the work area shall be coordinated with the Project Officer. Throughout the project, the Contractor shall maintain unobstructed access to emergency/fire exits for use by abatement workers and building occupants as approved by the Fire Marshal.
3.1.3 Moveable Object Cleaning: All moveable objects throughout the proposed Work Area shall be decontaminated as necessary by HEPA vacuuming and/or wet-wiping by the Contractor prior to abatement activities. The Contractor shall be responsible for moving all items impeding access to the materials to be abated, unless otherwise specified in this Section.
3.1.4 Construction of Barriers:
3.1.5 Construction of Decontamination Chamber: Locations of decontamination chambers, if shown in drawings, are approximate, and may be relocated at the request of the Contractor, with the approval of the Owner's Representative. The Contractor shall post the following telephone numbers and locations of emergency services in the clean room of the decontamination unit, including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.
Shut Down of building systems: Coordinate with the Project Officer to shutdown the appropriate HVAC system, disconnect emergency lighting battery packs, and fire or smoke detection systems by providing adequate notice.
Pre-cleaning:
Isolate Work Area:
Constructing the Negative Pressure Enclosure: Negative Pressure Enclosure (NPE) systems shall be used where the configuration of the work area does not make the erection of the enclosure infeasible. The Owner's Representative will determine feasibility based on space availability and safety considerations. Exceptions to negative pressure enclosure are glovebag operations and mini-enclosure activities.
Observation Window: Install a 1' x 1' square plexiglass window in the wall of the containment at a location designated by the Owner's Representative. The plexiglass shall be scratch-free and remain clean (both inside and outside) at all times.
Pressure Differential: Air Filtration Devices shall be installed per the direction of the Owner's Representative.
Removal of Asbestos-Containing Materials (ACM)/Decontamination: Prior to stripping and/or tooling, thoroughly wet (to the satisfaction of the Owner's Representative) the ACM to be removed to reduce fiber dispersal into the air. Accomplish this wetting by application of a fine spray (mist) of amended water or removal encapsulant via airless sprayers or pump sprayers. Saturate the material sufficiently to wet through to the substrate without causing excess dripping. Allow time for the water or removal encapsulant to penetrate the material thoroughly. If amended water is used, spray the material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply it in strict accordance the with manufacturer's written instructions.
Perforate the outer covering of any installation that has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or carefully strip away the coating while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.
Mist the Work Area continuously with amended water whenever necessary to reduce airborne fiber levels. Remove the saturated ACM in small sections from all areas. Do not allow the material to dry out. As it is removed, simultaneously pack ACM while still wet into disposal bags. Twist the neck of bags, fold the neck over and seal the neck with a minimum of three wraps of duct tape. Clean the outside of the bags and move them to the washdown station adjacent to the Equipment Decontamination Area.
3.1.6 The abatement work is complete when the Work Area is certified to be visually clean by the Owner's Representative, and final clearance criteria as defined in this specification, have been met.
3.1.7 Negative Pressure Glovebag Procedures:
The Work Area shall be isolated with barrier tape and signs by the Contractor to limit access to authorized

personnel.
3.1.8 Use at least two persons to perform glovebag removal operation. Use each glovebag only once. Do not move glovebag once it has been mounted in place.
Glovebags must be installed so that they completely cover the pipe or other structure where asbestos abatement is to be done. Glovebags are installed by cutting the sides of the glovebag to fit the size of the pipe from which asbestos is to be removed. The glovebag is attached to the pipe by folding the open edges together and securely sealing them with tape. All openings in the glovebag must be sealed with duct tape or equivalent material. The bottom seam of the glovebag must also be sealed with duct tape or equivalent to prevent any leakage from the bag that may result from a defect in the bottom seam. A polyethylene flap, taped inside the bag over an opening cut into the bag, must be used to enable makeup air to enter the bag without allowing it to leave.
The workers who are performing the asbestos removal and workers who are in close contact with the glovebag who may be exposed as a result of gaps in the seams of the bag or holes accidentally punched through the bag must don at least: a half-mask, dual-cartridge, HEPA-equipped respirator, and a disposable Tyvek suit with hood and booties.
Horizontal surfaces within 10 feet of the glovebag site shall be pre-cleaned by wet wiping and HEPA vacuuming.

Critical Barriers of 2 layers of 6 mil polyethylene shall be applied to seal all openings to the Work Area. Floors and all surfaces directly under the material to be abated by glovebag removal and extending a minimum of ten feet in every direction will be covered with a 6 mil thick layer of polyethylene. This area is to include all surfaces to be contacted by personnel performing removal or assisting in removal or equipment (i.e. scaffolding, ladders, etc.) used by removal personnel. This area, covered by polyethylene, is here defined as the work area.
All building structures likely to be contacted by removal personnel performing glovebag removal will be sheeted with polyethylene of 6 mil thickness.
The HVAC system components effected by glove-bagging shall be shut down and locked out or isolated in the work area.
Exposed friable piping insulation will be wetted with amended water and sprayed with an encapsulant prior to application of the glovebag.
All necessary precautions will be taken to minimize the potential for fiber release during removal, including the operation of an AFD, equipped with HEPA filters, within the immediate Work Area and the storage of sufficient polyethylene sheeting to isolate the immediate Work Area in the event of asbestos exposure hazard.
If the size of the pipe warrants it, a rigid plastic collar shall be inserted to prevent collapse of the bag. Place tools in the bag. The ends of each glovebag will be securely taped to the adjoining pipe; additionally, all openings will be sealed (i.e., HEPA vacuum ports). Prior to removal of ACM, the glovebag seal will be checked by means of a smoke tube.
Pressure differential will be maintained within the negative pressure glovebag at all times during removal operation, by means of an HEPA vacuum with hose attached to the glovebag.
The removed asbestos material from the pipe or other surface that has fallen into the enclosed bag must be thoroughly wetted with a surfactant (applied with an airless sprayer through the precut port provided in most glovebags or applied through a small hole in the bag).
Once the asbestos material has been thoroughly wetted, it can be removed from the pipe, beam, or other surface. Once the insulation covering has been peeled away, the ACM underneath may be dry, in which case it shall be re-sprayed with a wetting agent to ensure that it produces as little dust as possible when removed. If the ACM is covered with wire mesh, the mesh shall be cut with metal shears, tin snips, or other appropriate tool and removed. If the ACM is banded, cut the bands prior to removal.
A wetting agent must then be used to spray any layer of dry material that is exposed beneath the mesh, the surface of the stripped underlying structure, and the inside of the glovebag.
After removal of the layer of ACM, the pipe or surface from which asbestos has been removed must be thoroughly cleaned with a nylon brush and wet-wiped with a wetting agent until no traces of the ACM can be seen. Exposed ends of ACM remaining on the pipe shall be encapsulated and sealed with duct tape.
Any asbestos-containing material edges that have been exposed as a result of the removal or maintenance activity must be encapsulated with bridging encapsulant to ensure that the edges do not

release asbestos fibers into the atmosphere after the glovebag has been removed.
All tools within the glovebag during removal operations will be considered contaminated and will be removed from a glovebag only by using the following procedure:
a. The worker shall grasp all tools with the glovebag hand, insert glove and pull his/her hand out of the glovebag, inverting the hand insert. The worker will then tape the inverted hand insert above the tool storage area and between the main glovebag, isolating the tools within the hand insert area and cut between the taped areas. This pouch must be appropriately labeled.
b. When the asbestos removal and encapsulation have been completed, a vacuum hose from a HEPA filtered vacuum must be inserted into the glovebag through the port to remove any air in the bag that may contain asbestos fibers. When the air has been removed from the bag, the bag shall be squeezed tightly (as close to the tape as possible), twisted, and closed with tape, to keep the asbestos materials safely in the bottom of the bag. The HEPA vacuum can then be removed from the bag and the existing penetration taped closed.
3.1.9 Personnel Equipment Decontamination:
All workers entering the removal zone or working within the removal zone are required to do the following :
a. Workers will wash the respirator face mask and the facial area surrounding their respirator face mask prior to removing their respiratory protection.
b. Workers will wash all exposed skin surfaces prior to removal of their protective clothing.

c. Workers will HEPA vacuum and/or wet-wipe all protective clothing prior to removal of their clothing.
d.Workers will wet-wipe equipment used within the removal zone prior to removal of equipment from the removal zone.
3.1.10 Area Decontamination and Cleanup:
Upon completion of removal within the removal zone the following decontamination protocol will be followed:
Polyethylene surfaces will be wet-wiped and/or HEPA vacuumed.
Equipment will be wet-wiped and moved off the polyethylene surface.
Expended glovebags will be rebagged in labeled, 6 mil thick bags.
The disposal bag will be wet-wiped and moved off the polyethylene surface.
The polyethylene surface will be wet-wiped and bagged.
All equipment will be checked by the County Representative before being removed from the zone to assure equipment has been satisfactorily decontaminated.
MINI-ENCLOSURE PROCEDURES:
Mini-enclosures shall be built in compliance with 29 CFR 1926.1101 and 40 CFR 763 Subpart E, Appendix B, to enclose the Work Area. The mini-enclosure consists of a small Work Room with an attached separate Change Room.
3.1.11 Electrical
Supply: Electrical power shall be obtained from outside the enclosure and include GFCI.
HVAC System:
Shut down the HVAC system controlling this part of the building. Seal all vents in the area with polyethylene sheeting taped securely in place. The HVAC system will remain isolated and shut down until final air sampling has been completed.
Pre-clean:
HEPA vacuum/wet-wipe the Work Area prior to construction of enclosure.
Step-off Area:
Cover the floor in front of the entry to the Change Room with one layer of 6 mil sheet polyethylene. Securely anchor the sheet polyethylene to prevent slipping.
Change Room:
Appropriate respiratory protection and clothing shall be worn during abatement procedures. Provide a Change Room, with additional space as required for storage, attached to each Work Room. Construct a small Change Room made of 2 layers of 6 mil polyethylene attached to and supported by 2" X 4" lumber or PVC pipe. The Change Room shall be contiguous to the mini-enclosure and is necessary to allow the worker to vacuum off disposable protective coveralls and remove them before leaving the Work Area.
Work Room:

The enclosure is to be constructed by installing 2 layers of 6 mil polyethylene on all walls and floors of the identified Work Area with tape and adhesive. Seal any penetration such as pipes, ducts, or electrical conduits with tape. Completely isolate the Work Area from the other portions of the building.
Signs:
At entry to Change Room post a sign as required by 29 CFR 1926.1101.
Pressure Differential:
Pressure differential will be created by the use of a HEPA filtered air filtration device or high volume HEPA vacuum. Six (6) air changes per hour (four (4) air changes per hour, if building is unoccupied) are required at minus 0.02 inches of water pressure during the mini-enclosure procedures.
Removal of ACM:
Wet removal methods shall be employed during all removal procedures. Wet ACM using airless spray equipment with amended water. Remove ACM material using scrapers, brushes, or rags until no visible debris remains on contaminated surfaces. Use work procedures that result in an 8-hour TWA airborne fiber count less than that indicated in the section of these Specifications on "Air Monitoring - Test Laboratory Services." If airborne fiber counts exceed this level, immediately mist the area with amended water to lower the fiber counts and revise the work procedures to maintain airborne fiber levels within the required limits.
3.1.12 Decontamination:
A thorough cleaning of all surfaces by HEPA vacuuming or wet-cleaning after completion of the abatement in these Work Areas is required.
3.1.13 Lock-down:
After the completion of all abatement and cleanup procedures, a visual inspection by the Owner's Representative shall be performed. Following authorization from the Owner's Representative, a lock-down encapsulant that will not impede installation of new finishes shall be applied to all surfaces previously contaminated or those that have become contaminated with asbestos.

3.2 REMOVAL OF RACM CATEGORIES I AND II (NON-FRIABLE MATERIALS):

3.2.1 GENERAL:

The County assumes that all non-friable asbestos materials may have the potential of becoming friable as defined by EPA, therefore, these materials shall be treated as regulated asbestos-containing materials (RACM). RACM as defined in NESHAP, 40 CFR Part 61.141, includes friable ACM; Category I non-friable ACM; Category I non-friable ACM that has become friable; Category I non-friable ACM that has been or will be sanded, ground, cut or abraded; or Category II non-friable ACM that has already been or is likely to become crumbled, pulverized, or reduce to powder.

This section discusses the scope of work specific to RACM categories I and II and how it will be conducted. It also describes the removal and specific concerns of the abatement project. Determining exact quantities and site measurements are the responsibility of the Contractor.

3.2.2 Flooring Materials:

a.Removal of ACM Flooring
Before removal begins, a Competent Person must assess the job and may make a Negative Exposure Assessment (NEA) based on data in the OSHA rulemaking record when all three of the following requirements are met:
1. Compliant (recommended) work practices are used;
2. Workers are properly trained; and
3. The resilient flooring is intact and is likely to remain intact throughout the removal process.

A NEA is not justified if these three conditions are not met. If a NEA is not or cannot be made, or if applicable OSHA exposure limits are exceeded, other provisions and requirements of the OSHA asbestos regulation remain in full force and effect.

c. The Work Area shall be isolated with barrier tape and signs by the Contractor to limit access to authorized personnel.

d. Workers must don at least a half-mask, dual-cartridge, HEPA-equipped respirators and disposable Tyvek suits with hoods and booties.
e.Critical Barriers of 2 layers of 6 mil polyethylene shall be applied to seal all openings to the Work Area. If mastic remover is to be used, install a two-foot high splash guard made of two layers of 6-mil polyethylene, surrounding the removal area. Install a walkway consisting of two layers of 6-mil polyethylene wherever personnel performing or assisting removal will contact floor surfaces not being removed. The area covered by polyethylene is hereby defined as the work area.
f. Drape surfaces and structures within 10 feet of the work area with polyethylene sheeting of 6 mil thickness.
g.The HVAC system shall be shut down or isolated in the work area.
h. All necessary precautions will be taken to minimize the potential for fiber release during removal, including the operation of a HEPA-filtered AFD within the immediate Work Area, use of wet methods, and the storage of sufficient polyethylene sheeting to isolate the immediate Work Area in the event of asbestos exposure hazard.
i. Removal of ACM: Wet removal methods shall be employed during all removal procedures. Wet ACM with amended water using airless spray equipment. Do not sand or dry sweep resilient floor covering or backing. Avoid creating dust.
j. Carpet shall be treated as non-ACM and left on site. If during flooring abatement, ACM flooring persistently adheres to carpet, that section shall be cut away and abated.

3.2.3 Removal of Resilient Sheet Flooring:
a.Wear layer removal:
Remove any binding strips or other restrictive moldings from doorways, walls, etc.
Make a series of parallel cuts 4" to 8" apart through the top layers and about halfway through the backing, parallel to the wall.
Start at the end of the room farthest from the entrance door and pry up the corner of a strip, separating the backing layer. The cut strips shall be peeled from the backing by pulling or by rolling around a core which will control the stripping angle to create a uniform tension (some resilient flooring wear layers may not be readily removable and may require scraping). Tie or tape the removed material securely and place in the heavy-duty impermeable trash bag or closed impermeable container for disposal.
Do only one three-strip area at a time. Stand on the remaining floor covering or clean floor (do not stand on the felt).

b. Felt backing removal by wet:

Pour amended water solution into the sprayer or sprinkling can.
Thoroughly wet the residual felt with this solution. Wait a few minutes to allow the solution to soak into the felt.
Stand on the remaining floor covering (not the felt), and use the stiff-bladed scraper to scrape up the wet felt.
Re-wet the felt if it dries out or if dry felt is exposed during scraping. Pick up the scrapings as they are removed from the floor and place in waste bag or container. Scrape all felt from this floor area before proceeding further.
Repeat the above on the next series of strips.
Repeat this operation until the felt has been removed from the whole floor. Close full bags tightly, seal securely, and label for disposal as ACM waste.
When the whole floor has been cleaned of felt and dirt, vacuum the floor using the HEPA vacuum cleaner with a metal floor tool and let it dry. Position the vacuum cleaner so that the discharge air does not blow on the floor being cleaned.
After vacuuming, used HEPA filters and cleaner bags shall be removed carefully and placed in a sealable plastic bag, appropriately labeled and disposed as asbestos waste.

3.2.4 Removal of Resilient Floor Tile:
Areas exposed to heavy foot-traffic usually have tiles that are tightly adhered. Therefore, start the removal in those sections which receive the least traffic. Try to remove individual tiles as a complete unit.

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

When the first tile is removed, place it, without breaking into smaller pieces, in the waste bag or container.

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

Some tiles will release quite easily while others require varying degrees of force. Where the adhesive is spread heavily or is quite hard, it may prove easier to force the scraper through the tightly adhered areas by striking the scraper handle with a hammer, using blows of moderate force while maintaining the scraper at 25- to 30- degree angle to the floor. Wear safety glasses when using this procedure.

Where even the above methods will not remove the tiles, try thoroughly heating the tiles with a hot-air blower until the heat penetrates through the tile and softens the adhesive. NOTE: Handle the hot-air blower carefully to avoid injury. Do not use a blowtorch or open flame. Use caution not to burn or char the tile. Use adequate ventilation with this procedure.

3.2.5 REMOVAL OF ACM FLOORING MASTIC:

a. Using an Owner-approved mastic remover and appropriate personal protection, apply the mastic remover according to the manufacturer's instructions.

b. Scrape and/or mop up the mastic remover solution, taking care not to splash the solution on surrounding surfaces. Dispose of the solution and uncleanable equipment and materials in containers or bags designated for asbestos waste.

c. Encapsulate with bridging encapsulant, any asbestos-containing material edges that have been exposed as a result of the removal activity.

d. The substrate from which the ACM has been removed must be thoroughly cleaned with a nylon brush and wet-wiped with a wetting agent until no visible debris is seen.

e. Area Decontamination and Clean-up: Thoroughly clean all surfaces in the work area by HEPA vacuuming or wet-cleaning after completion of the abatement. The following decontamination protocol will be followed:
wet-wipe the equipment used prior to removal of the equipment from the work area.
Polyethylene surfaces will be wet-wiped and/or HEPA vacuumed, then placed in double bags.
ACM and work area waste will be double-bagged in labeled, 6-mil polyethylene bags.
The disposal bag will be wet-wiped and moved off the polyethylene surface.
All equipment will be checked by the Owner's Representative before removal from the work area to assure that the equipment is free of contamination.

3.2.6 Roofing Materials:

All roof abatement work shall be coordinated daily to prevent water damage of County property. The Contractor shall be responsible for coordinating the work to allow adequate time for the exposed area to be waterproofed by others before the end of the work day. The Contractor shall be responsible for all damages resulting from the lack of such coordination.

Contractor shall follow appropriate sections for Roof Cutting in 40 CFR Part 61, Interpretive Rule for Roof Removal Operations Under the Asbestos NESHAP. Removal of RACM roof materials as interpreted by EPA shall comply with "adequately wet" and "discharge no visible emission" requirements of NESHAP.

Asbestos-containing materials are to be removed in small enough sections (i.e., 2 ft x 2 ft sections) to be easily lifted by one person.

Asbestos-containing shingles shall be carefully pried up and removed. A flat prying tool shall be used and no visible dust created in the removal process. The shingles shall be fine-water misted with an airless sprayer without saturating the underlying structural components, decks, or non-ACM insulation. If screws anchor siding, the screws shall be wetted and removed.

For buildings to be re-roofed or repaired, the Contractor must not over-wet the underlying roofing components ,such as felt, decks, walls or non-ACM insulation, with amended water.

3.3 REMOVAL OF RACM CATEGORIES III AND IV (FRIABLE ACM)
Wet removal is required unless indicated otherwise in the contract documents to reduce the possible release of asbestos fibers and assist the removal process.

Engineering controls shall be implemented to assist in maintaining airborne fiber concentrations below maximum use concentrations for the selected respiratory protective devices.

3.3.1 Pipe Insulation: Spray insulation with a mist of amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate the material to the substrate. If a removal encapsulant is used, use it in strict accordance with the manufacturer's instructions. Cut bands holding pre-formed pipe insulation, slit insulation jackets at seams, remove any insulation and hand-place it in a disposal bag. Do not drop insulation onto the floor. Remove any residue from pipe or fittings with a stiff bristle hand brush.

In locations where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos containing fibrous material, remove the fibrous material 6 inches from the point where it contacts the asbestos-containing insulation.

3.3.2 Procedures for Removing ACM Flexible Duct Connector:
Enclosure: An enclosure shall be constructed as a mini-enclosure or the existing enclosure shall remain in place during work procedures. The pressure differential system shall be operational throughout the abatement procedures at specified pressure and air changes per hour.

Wet Flex Joint: The flex joint material shall be wetted with amended water and kept wet throughout the abatement procedure.

Remove Retaining Collar: Unbolt/unscrew retaining collar from the air handling unit/duct. The collar may only be cut after all attempts have been unsuccessful to unfasten the collar and remove it. If cutting the duct is required to remove the collar, smooth edges shall be left to facilitate replacement.

Remove ACM: The ACM flex joint shall be removed from the retaining collar using amended water, and disposed as ACM waste. The collar shall be decontaminated and all residue removed from the surface of the duct.

Decontaminate Duct: Thoroughly clean the immediate area on all sides of the interior of the duct as far as possible. At a minimum, the area to which the new collar is to be attached will be decontaminated.

Visual Inspection: Prior to replacing the flex joint, an inspection of the duct and immediate area will be conducted by the Owner's Representative.

Lock-down: A lock-down encapsulant that will not impede installation of new finishes or corrode retaining collar or duct surfaces shall be applied to all surfaces previously contaminated with asbestos.

Replace Flex Duct: A non-ACM flex joint shall be used to replace the flex joint. The flex joint will be inserted into the new or decontaminated retaining collar. The retaining collar and flex joint will then be affixed to the duct.

3.3.3 Fire Door Removal Procedures:
The Work Area shall be isolated with barrier tape and signs by the Contractor to limit access to authorized personnel.
The HVAC system shall be shut down or isolated in the work area.

The workers who are performing the asbestos removal must don at least a half-mask, dual-cartridge, HEPA-equipped respirator and disposable tyvek suit with hood and booties.

Prepare work area with polyethylene drop cloth. Seal all HVAC duct openings within ten feet of the work area with 1 layer of 6-mil polyethylene and duct tape.

Wet any damaged areas of the door (s) with amended water. Place two layers of polyethylene sheeting on the floor for wrapping the door.

If the door is equipped with a closer, detach the closer arm from the door frame. Remove screws attaching closer to door. HEPA vacuum or wet clean screws, closer, and area where closer was attached to door, then dispose as ACM waste.

Remove hinge pins or screws attaching hinges to door frame. Lay door on polyethylene. Wrap door for disposal, in two layers of polyethylene sheeting sealing with spray glue and duct tape.

All necessary precautions will be taken to minimize the potential for fiber release during removal, including the operation of an AFD, equipped with HEPA filters, within the immediate Work Area and the storage of sufficient polyethylene sheeting to isolate the immediate Work Area in the event of asbestos exposure hazard.

Personnel Equipment Decontamination: All workers entering the removal zone or working within the removal zone are required to do the following :

Workers will wash the respiratory face mask and the facial area surrounding their respiratory face mask prior to removing respiratory protection.

Workers will wash all exposed skin surfaces prior to removal of protective clothing.

Workers will HEPA vacuum and/or wet-wipe all protective clothing prior to removal of clothing.

Workers will wet-wipe equipment used within the removal zone prior to removal of equipment from the removal zone.

Area Decontamination and Cleanup: Upon completion of removal within the removal zone the following decontamination protocol will be followed:

Polyethylene surfaces will be wet-wiped and/or HEPA vacuumed.

Equipment will be wet-wiped and moved off the polyethylene surface.

Attach appropriate labels to all individually-wrapped doors.

All equipment will be checked by the County Representative before being removed from the removal zone to assure equipment has been satisfactorily decontaminated.

3.3.4 Fiber Release Episodes: If visible fibers are released, the area affected must be immediately sprayed with amended water. (NOTE: Fire doors contain amosite asbestos.) Any visible openings in the door must be immediately sealed, and the project monitor immediately notified to ascertain the need for air monitoring.

3.4 ASBESTOS HAZARD REDUCTION-CLEANING AND DECONTAMINATION

3.4.1 First Cleaning:
Replace the 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. (Note: A HEPA vacuum will fail if used with wet material) Do not dry-dust or dry-sweep. Use each surface of a cleaning cloth one time only and then dispose the cloth as contaminated waste. Continue cleaning until there is no visible dust, debris, or residue on polyethylene sheeting and other surfaces.

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 the decontamination procedure from that point.

Allow sufficient time for the Work Area to completely dry while operating the HEPA filtered fan units. Use 24" diameter floor fans, as necessary, to assure circulation of air in all parts of Work Area during this period. Maintain operation of the pressure differential system during the drying period.

Second Cleaning:
Repeat cleaning and inspection tasks in the same manner as the first cleaning.

Final Cleaning:
Carry out a final cleaning and inspection in the same manner as the first cleaning. Submit a Certificate of Readiness for Visual Inspection to the Owner's Representative.

3.5 PROJECT DECONTAMINATION

3.5.1 Equipment and Waste Decontamination
Equipment and Waste Container Decontamination Area (Waste Load Out):
Provide an Equipment Decontamination Area consisting of a serial arrangement of rooms (Holding Room and Wash Room) for removal of equipment and material from Work Area. Do not allow personnel to enter or exit Work Area through Equipment Decontamination Area.

a.Washdown Station: Provide an enclosed shower unit located in Work Area just outside Wash Room as an equipment, bag and container cleaning station.

b. Wash Room: Provide a Wash Room for cleaning of bagged or containerized asbestos-containing waste materials passed from the Work Area. Construct the Wash Room of 2" X 4" wood framing and polyethylene sheeting, at least 6 mil in thickness, and located so that packaged materials, after being wiped clean, can be passed to the Holding Room. Separate this room from the Work Area by weighted triple flaps of 6 mil polyethylene sheeting.

c. Holding Room: Provide a Holding Room as a drop location for bagged asbestos-containing materials passed from the Wash Room. Construct the Holding Room of 2" X 4" wood framing and polyethylene sheeting, at least 6 mil in thickness, and located so that bagged materials can be passed from the Wash Room to the Holding Room. Separate this room from the Wash Room by triple flaps of at least 6 mil polyethylene sheeting. Separate this room from the rest of the building by a 6 mil polyethylene triple flapped, weighted doorway.

Equipment or Material: Take all equipment or material from the Work Area through the Equipment Decontamination Area according to the following procedure:
At the washdown station, thoroughly wet-clean contaminated equipment or sealed polyethylene bags and pass them into Wash Room.

When passing equipment or containers into the Wash Room, close all doorways of the Equipment Decontamination Area except the doorway between the Washdown Station and the Wash Room. Keep all outside personnel clear of the Equipment Decontamination Area.

Once inside the Wash Room, wet-clean the bags and/or equipment.

When cleaning is complete, pass the items into the Holding Room.

Workers from the building exterior shall enter the Holding Room and remove decontaminated equipment and/or containers for disposal. These workers shall wear full protective clothing and appropriate respiratory protection. At no time is a worker from the building exterior to enter the Holding Room when an abatement worker is inside the Holding Room.

3.5.2 For Exterior Abatement (roofing, siding, etc.):
Decontamination: After removal of RACM materials is complete, polyethylene and all affected surfaces shall be HEPA vacuumed to remove debris, and wet-wiped to decontaminate. If organic solvents are used for this process, appropriate respirator filters/cartridges for asbestos dust and organic solvents shall be used.

3.5.3 Cleaning of Decontamination Chambers:
Clean debris and residue from inside the Decontamination chambers on a daily basis or as otherwise indicated on Contract Drawings. Damp-wipe or hose down all surfaces after each shift change. Clean debris from the shower pans on a daily basis.

If the Clean Room of the Personnel Decontamination Area becomes contaminated with asbestos-containing debris, abandon the entire Decontamination Area and erect a new Decontamination Area. Use the former Clean Room as an inner section of the new Equipment Room.

3.5.4 SIGNS:
Post a 20" X 14" caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:
DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE
REQUIRED IN THIS AREA

Post an approximately 10" X 14" manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:
NO FOOD, BEVERAGES OR TOBACCO
PERMITTED

ALL PERSONS SHALL DON PROTECTIVE CLOTHING (COVERINGS)
BEFORE ENTERING THE WORK AREA

ALL PERSONS SHALL SHOWER IMMEDIATELY AFTER LEAVING WORK AREA AND BEFORE ENTERING THE CHANGING AREA

3.5.5 PROJECT MONITORING, CLEARANCE AND DEMOBILIZATION

3.5.6 DESCRIPTION OF WORK:
This section describes the air monitoring and visual inspection procedures, sets airborne fiber limits both inside and outside the Work Area, describes the action required by the Contractor if an action level is met or exceeded, and specifies final clearance criteria for a variety of abatement situations.

3.5.7 AIR MONITORING:
a. The purpose of the County's air monitoring will be to detect faults in the Work Area isolation, such as contamination inside and outside the Work Area or a failure in the pressure differential system. If this occurs, the Contractor shall immediately cease abatement activities until the fault is corrected. Work shall not recommence until written authorization is given by the Owner's Representative.

b.The performance and execution of the work shall be closely and continuously monitored by the Owner's Representative. The monitoring shall be inside the Work Area and surrounding areas to ensure full compliance with these Specifications and all applicable regulations.

c. Continuous visual monitoring and checking will be conducted by the Owner's Representative and will include area air samples inside and outside the Work Area and Decontamination Area. Personal air samples may be taken when determined to be necessary by the Owner's Representative. Personal air samples will not be collected by the Owner's Representative to comply with the OSHA 29 CFR 1926.1101. The monitoring will include checking the Standard Operating Procedures, engineering controls, respiratory protection systems, and the transporting, temporary storage and disposal of asbestos.

d. Continuous air monitoring will be conducted by the Owner's Representative to include air samples outside the enclosure, in the Decontamination Area, and personal samples (if necessary). The Owner's Representative will be on site to perform sampling and analysis of the air samples, and samples will be submitted daily so that verbal reports on air samples can be obtained within 24 hours. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished by the Owner's Representative to the Project Officer.

3.5.8 LABORATORY/ANALYTICAL METHODS: The County will use a Virginia licensed NVLAP accredited testing laboratory, or Virginia licensed NIOSH Proficiency Analytical Testing (PAT) Program proficient laboratory to analyze air samples. Samples will be sent to the laboratory daily or read at the job site, so that verbal reports on air samples can be obtained within 24 hours unless stated otherwise in writing by the Project Officer. Analysts who analyze air samples on-site will be employed by a Virginia licensed Asbestos Analytical Laboratory.

Samples of airborne-asbestos concentrations will be collected and analyzed by the TEM Method in 40 CFR Part 763, Subpart E, Appendix A or the PCM Method in NIOSH Method 7400. Pumps will be calibrated before and at the end of the project sampling cycle and a record of this calibration furnished to the Project Officer upon demand. If air sampling procedures vary from these procedures, an explanation for such variation shall be part of the inspection report.

3.5.9 CONTRACTOR’S RESPONSIBILITY:
If work has stopped due to high airborne fiber counts, air samples will be secured in the same area by the Owner's Representative for analysis by electron microscopy. Airborne fibers counted in samples analyzed by TEM shall be only asbestos fibers. The cost of such analysis will be borne by the Contractor at no additional cost to the Owner.

Personal samples shall be collected by the Contractor to comply with the regulatory requirements of 29 CFR 1926.1101. Such results shall be posted in the Clean Room in compliance with 29 CFR 1926.1101 and be made available to the Project Officer and the Owner's Representative.

All costs, including the laboratory and monitoring work required, incurred due to exceeding the fibers-in-

air limits specified on the initial final clearance tests, shall be borne by the Contractor.

3.6 PRIOR TO COMMENCEMENT OF WORK:
Sealing the Work Area, building of systems, and setting up the pressure differential system and all other required project equipment shall be completed and tested prior to notifying the Owner's Representative for inspection.

The Contractor must notify the Owner's Representative of the Contractor's work schedule to allow collection of the required air sampling before, during, and after the Contract work, and to allow the Owner's Representative to be present to monitor the asbestos removal, including the adequacy of seals, prior to work start up and throughout the removal.

The Project Monitor reserves the right to inspect any and all equipment and supplies brought on the project site. The inspection will involve identifying asbestos contamination from use on a previous project, or any defect in the condition of equipment or supplies. The Contractor must ensure that all materials brought onto the project are free from prior asbestos contamination and that they are in good condition for use in accordance with its manufacture's specifications. The Project Monitor can reject the use of any equipment or material by the Contractor if it is determined to be in compliance with this specification

3.7 REPORTS:
A complete record, certified by the Contractor or the Contractor's agent, of all air monitoring tests and laboratory reports, shall be made available upon request to the Owner's Representative and the Project Officer. All information shall be recorded in the Contractor's air monitoring log. Written reports of all air monitoring tests will be posted at the job site on a daily basis.

Laboratory reports shall list each sample's calculated concentration, time and date when sample was taken, and exact location of where it was collected. The exact locations of the monitors shall be described by referencing locations of major building structures near the monitoring sites. In addition to area samples, collected samples shall include personal monitoring for both long and short-term sample periods to assess both long-term time weighted averages and excursion limits.

3.8 AIRBORNE FIBER LEVELS
Inside Work Area: An average airborne 8-hour concentration in the Work Area of less than 0.1 fibers per cubic centimeter (f/cc) will be maintained. If the fiber counts rise above this figure for any sample period, revise the work procedures and implement more effective engineering controls to lower the fiber counts. If the TWA fiber count for any work shift or 8-hour period exceeds 0.1 f/cc, stop all work and leave pressure differential system in operation. Do not recommence work until authorized in writing by the Owner's Representative.

If the airborne fiber counts exceed 2.0 f/cc for any period of time, cease abatement activities until fiber counts fall below 0.5 f/cc. After the work has been stopped, do not recommence work until authorized in writing by the Owner's Representative.

Outside Work Area: If any air sample taken outside of the Work Area exceeds the background level or 0.01 f/cc, immediately stop all work. If this air sample was taken inside the building, or around the Work Area, promptly identify and resolve the problem and erect new critical barriers to isolate the affected area. Decontaminate the affected area prior to recommencing abatement activities.

3.9 VISUAL INSPECTION:
The Contractor shall decide when they feel the abatement and decontamination is complete and then request the Owner's Representative to conduct a visual inspection of the Work Area. The visual inspection will be conducted by the Owner’s Representative in compliance with ASTM E 1368-90, Standard Practice for Visual Inspection of Asbestos Abatement Projects.

The Owner's Representative will visually inspect each functional Work Area where abatement activity was conducted to determine whether the action has been properly completed and to detect any visible asbestos dust or contamination. Final visual inspection shall be conducted in compliance with ASTM E 1368-90, Standard Practice for Visual Inspection of Asbestos Abatement Projects. If the visual inspection does not reveal any dust or other signs of contamination, the final air monitoring will take place.

3.10 ENCAPSULANT APPLICATION:
After the visual inspection, an approved lock down encapsulant shall be applied to the all surfaces in the work area. The encapsulant used shall not impede installation of new finishes. After sufficient drying time, determined by the Owner's Representative, the final clearance sampling can take place.

3.11 FINAL INSPECTION AND TESTING
After the minimum of three (3) thorough cleanings of the Work Area and if a high degree of cleanliness has been achieved, notify the Owner's Representative that the Work Area is ready for inspection and final clearance testing.

3.12 AGGRESSIVE SAMPLING:
All air samples will be taken using aggressive sampling techniques in compliance with 40 CFR Part 763, Subpart E, Appendix A. Before sampling pumps are started, the exhaust from forced-air equipment (leaf blower with electric motor, minimum one (1) horsepower) will be swept against all walls, ceilings, floors, ledges, and other surfaces in the room. This procedure will be continued for 5 minutes per 10,000 cubic feet of room volume. One 20-inch-diameter fan per 10,000 cubic feet of room volume will be mounted in a central location at approximately 2 meters above floor, directed toward ceiling and operated at low speed for the entire period of sample collection.

Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors or vents.

After air sampling pumps have been shut off, fan(s) will be shut off.

3.13 FINAL AIR TESTING:
Upon determination by the Contractor that the area is ready for final visual inspection and air testing, the Owner’s Representative shall be notified by presenting a Contractor-signed copy of the CERTIFICATION OF READINESS FOR VISUAL INSPECTION, found in section 3.12. The Owner's Representative will visually inspect each Work Area in compliance with ASTM E 1368-90, Standard Practice for Visual Inspection of Asbestos Abatement Projects. If the required criteria are met, then final air testing will proceed.

Final air clearance testing shall be conducted by the Owner’s Representative, who will use aggressive air sampling techniques in the Work Area in accordance with EPA 40 CFR Part 763.90 [i], [2, i] and Appendix A. After meeting final clearance criteria in the Work Area, critical barriers separating the Work Area from the balance of the building area may be removed.

If the final visual inspection does not reveal any dust or other signs of contamination, the final air monitoring will take place. Dust samples may be taken for analysis to confirm the results of the final testing at the discretion of the Owner's Representative.

3.14 FINAL CLEARANCE CRITERIA:
a. Phase Contract Microscopy (PCM): PCM clearance may be used for final clearance on abatement projects involving greater than 160 square feet of non-friable material if the material is determined to be non-friable by the County Representative before, during and after abatement activities have been performed in accordance with 40 CFR 61 NESHAP Subpart M, (Revised Subpart B) Regulation. Final clearance for all projects smaller than 160 square feet or 260 linear feet will be analyzed using Phase Contrast Microscopy. Phase contrast microscopy analysis will be performed in accordance with NIOSH

Method 7400, entitled "Fibers," published in NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987 or in compliance with the appropriate schedule identified in EPA 40 CFR Part 763.90 [I], [4-8]. Final Clearance Criteria are met when test results shall show contamination levels not to exceed 0.01 f/cc when using phase contrast microscopy. Air samples shall have volume of 3,000 liters per sample but may vary depending on size of Work Area and other variables.

b.Transmission Electron Microscopy (TEM): Final air clearance shall be analyzed by TEM for all projects involving greater than 160 square feet or 260 linear feet of friable material in compliance with the appropriate schedule identified in EPA 40 CFR Part 763.90 [I], [4-8]. Sampling shall be conducted in accordance with 40 CFR 763, Subpart E, Appendix A, i.e., at a minimum, five ambient air samples inside the Work Area, five ambient samples outside the Work Area; two field blanks and one sealed blank are also to be collected. Volumes for final air clearance samples shall be greater than 1,199 L of air for a 25 mm filter and 2,799 L of air for a 37 mm filter.

Final Clearance Criteria are met when the average concentration of asbestos for the five air samples collected inside the Work Area does not exceed the filter background level of 70 structures per square mm. The project may also be considered complete when the average concentration of the five inside samples is not statistically significantly different from the outside samples, as determined by the Z-test calculation. If the samples were collected at the same time, analyzed in the same manner, and the average concentration of the three field blanks is below the filter background level of 70 structures per square mm, as analyzed by the TEM method of 40 CFR 763, Subpart E, Appendix A, the project may be considered complete. Dust samples may be taken for analysis to confirm the results of the final testing at the discretion of the Owner. If the results of the final testing are not satisfactory, the thorough wet cleaning and/or HEPA vacuuming shall be repeated until the required decontamination levels have been achieved at no additional cost to the Owner.

c.For exterior RACM removal and other removal performed without a negative pressure enclosure: Final Clearance Criteria will be a combination of passing visual inspection and personal samples not to exceed the fibers-in-air levels specified for PCM or TEM final clearance criteria.

3.15 REPEAT FINAL CLEANING EXPENSES:
Repeat cleaning required after the first final cleaning will be performed at the expense of the Contractor. Additional hours required by the Owner's Representative will also be an expense paid for by the Contractor, as well as necessary repeat final air clearance analyses.

3.16 PROJECT DEMOBILIZATION:
Once the Owner’s Representative has decided that final clearance criteria have been met, the containment barriers and decontamination area may be taken down unless being used for other Phases.

3.17 NOTICE OF VACATING AREA:
At least two (2) days prior to vacating each work area, the Contractor must notify County .

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

The polyethylene barriers and decontamination chambers shall be disposed, following the procedures listed in this section and 3.13 DISPOSAL OF WASTE. Remove all barriers, signs, equipment, materials and leave the property clean and free of debris. Thoroughly clean all surfaces by HEPA vacuuming and wet-wiping after barriers are removed.

Remove all duct tape and spray adhesive residue left on surfaces except for sites intended for demolition.

3.18 DISPOSAL OF WASTE
3.18.1 GENERAL: The Contractor shall conduct removal, transporting, disposal, or other regulated activity regarding all asbestos-containing (ACM) waste generated under this Contract, in compliance with

EPA, DOT, state and local regulations. The Contractor, as Co-Generator, shall perform all duties of the Generator, including signing the waste manifest.

Non-asbestos-containing (non-ACM) waste designated as uncontaminated or asbestos-contaminated shall be disposed of as regular solid waste, in compliance with all applicable regulations.

3.19 WASTE CONTAINERS:
All asbestos-containing waste shall be double bagged or completely wrapped with 2 layers of 6-mil polyethylene and taped prior to removal from the Work Area for disposal. The bags or wrapped waste shall be decontaminated and have appropriate labeling attached before entering the truck or dumpster. Additionally, all trucks or dumpsters used to store or transport waste shall be lined with 6-mil polyethylene sheeting, and have appropriate asbestos warning signs displayed during loading and unloading of waste.

If the ACM waste has sharp edges or protrusions which may puncture the polyethylene bag, it must be placed in sealed, appropriately labeled fiber barrels.

3.20 MOVING WASTE THROUGH THE WORK SITE:
The bags, wrapped waste, or fiber barrels may be lowered to the ground by use of a hoist. The hoist shall be constructed and used in compliance with OSHA 29 CFR 1926.554. Work areas higher than 3 stories require that the waste material be transported through the building.

3.21 TEMPORARY STORAGE OF WASTE:
Do not store bagged material outside the Work Area. Take bags from the Work Area directly to a sealed truck or dumpster and directly to the approved landfill. Waste from the site may not be mixed with waste from other sites once it leaves the site until it reaches the landfill unless approved by Arlington County prior to job startup and all pertinent submittals have been approved at least 5 days prior to startup.

The Asbestos Abatement Contractor shall not temporarily store ACM waste off County site unless pre-approved by the County's Representative. ACM waste stored off-site in a temporary facility shall be monitored and records shall be kept (i.e. number of bags, barrels etc.). The Contractor shall notify the County as to the location of the temporary site, and shall inform the County when the waste is to be transported to the landfill. The County has the right to inspect the temporary site at any time. The Contractor shall provide a waste shipment record of the ACM transported to the landfill.

3.22 TRANSPORTATION:
a.Mark vehicles used to transport ACM waste during the loading and unloading of waste so that the signs are visible and in compliance with NESHAP regulations. ACM waste shall be placed in a leak-tight container and properly labeled. Carefully load contained waste on sealed trucks (plasticized interior of bed) or other appropriate vehicles for transport.

b.All transport of ACM waste and bagged materials shall be in enclosed vehicles. Double-bagged material may be transported on open trucks if the materials are first loaded in sealed fiber drums. Label drums with the same type warning label as the bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of these in accordance with this Specification.

c. Exercise care before and during transport to ensure that no unauthorized persons have access to the material. Assure that vehicles are not over loaded, and comply with DOT weight restrictions. Assure that the load is evenly distributed in the vehicle.
d. Advise the approved landfill operator at least 24 hours in advance of transport, the quantity of material to be delivered.

e. At the landfill, containers, bags or drums must be carefully unloaded from the truck. If containers are torn or ripped exposing the waste, they shall be rebagged and sealed prior to unloading. The polyethylene lining of the truck bed shall be wet wiped and then be disposed as ACM waste. The

Contractor or subcontractor transporting the ACM waste shall not back haul or use the vehicle for any other use except the transport of ACM waste until the vehicle has been thoroughly decontaminated via HEPA vacuuming and wet wiping in compliance with applicable regulations.

3.23 DISPOSAL SITE:
Asbestos-containing waste material and debris which is packaged in accordance with the provision of this Specification may be disposed at EPA approved landfills when precautions are taken, or approved conversion sites, identified in 40 CFR 61 (NESHAPS). Each shipment of ACM waste over one (1) pound must comply with the latest DOT requirements for labeling, and a DOT Non-Hazardous Material Manifest shall be completed and accompany the shipment. Disposal containers (including bags) shall contain the appropriate OSHA, DOT, and any state required lettering. The name of the Contractor listed as Co-Generator, date, and location from which the waste was generated shall also be affixed to the container.

A copy of the Waste Shipment Record required by 40 CFR 61 (NESHAPS) shall be completed and signed by the Contractor, submitted with each shipment to the landfill and retained as part of the records for at least 2 years. The Contractor shall supply the Project Officer with an executed copy of the Waste Shipment Record within 35 days from the time the waste was accepted by the initial waste transporter prior to request for final payment.

The Contractor shall report in writing to EPA Region III office within 45 days if an executed copy of the Waste Shipment Record is not received from the operator of the disposal site. The report to the EPA Regional office shall include:
A copy of the original Waste Shipment Record and
A cover letter signed by the Contractor explaining the efforts taken to locate the asbestos waste shipment and results of those efforts.
Dispose of nonfriable ACM in accordance with applicable regulations.

3.24 ASBESTOS DISPOSAL QUANTITY REPORT
NOTE: Normal practice is to have the Contractor hire one independent Private Qualified Person (the PQP) to perform all required functions. However, some applicable laws forbid this approach and will dictate when the PQP, the NC or both will be required to perform the function involved. However, the Contractor shall always hire a PQP.

Direct the PQP to record and report, to the Contracting Officer, the amount of asbestos containing material removed and released for disposal. Deliver the report for the previous day at the beginning of each day shift with amounts of material removed during the previous day reported in linear feet or square feet as described initially in this specification and in cubic feet for the amount of asbestos containing material released for disposal.

-- End of Section --

CERTIFICATE OF READINESS FOR VISUAL AND FINAL INSPECTION

****

CERTIFICATE OF READINESS FOR VISUAL INSPECTION

The Contractor hereby certifies that the entire Work Area is ready for the Owner's Representive to perform a visual inspection and that no dust, debris or residue remains on any surfaces including pipes, beams, ledges, walls, ceiling, floor, Decontamination Area, plastic sheeting, etc..

by: (Signature) **Date**

(Print Name)

(Print Title)

****

****

CERTIFICATE OF READINESS FOR FINAL INSPECTION AND SAMPLING

The Contractor hereby certifies that the entire Work Area is ready for the Owner's Representative to perform a final visual inspection and final clearance sampling and that all ACMs identified in Arlington County Contract No._____, have been located and removed and that no ACM dust, debris, or residue remains.

by: (Signature) **Date**

(Print Name)

(Print Title)

****

SECTION 13286

FLUORESCENT LAMP MERCURY (FLM) & PCB FLUORESCENT LIGHT BALLASTS (PCB FLB) ABATEMENT

Part 1 GENERAL

1.1 SUMMARY OF WORK - LEAD-BASED PAINT ABATEMENT

1.1.1 PLAN OF ACTION:

Submit a detailed job-specific plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location, size, layout and details of the work areas and worker decontamination facilities. Include the sequencing of abatement work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Describe the methods that will be used to comply with VOSHA requirements.

.

1.2 DEFINITIONS AND ABBREVIATIONS

1.2.1 GENERAL:

A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including any drawings. Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon. Definitions and explanations of this section are not necessarily complete nor exclusive.

1.2.2 DEFINITIONS

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).

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

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

Authorized Visitor: County personnel authorized by the Project Officer, or a representative of any federal, state or local regulatory agency having authority over the project are considered authorized visitors.

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

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

Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded at any time.

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

Contaminant: Polychlorinated biphenyl- or mercury-containing materials located where there is unacceptable risk of contact or exposure to unprotected persons.

County: The County Board of Arlington County, Virginia

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.

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

Disposal Bag: A 6 mil thick, leak-proof polyethylene bag used for transporting waste from work to disposal site.

Electric Lamp: The bulb or tube portion of a lighting device specifically designed to produce radiant energy, most often in the ultraviolet (UV), visible, and infra-red (IR) regions of the electromagnetic spectrum. Examples of common electric lamps include, but is not limited to, incandescent, fluorescent, high intensity discharge, neon lamps.

Filter: A media component used in respirators to remove solid (i.e. fibers) particles from the respired air. Certain filters may also remove organic vapors from the air.

Fluorescent Lamp Mercury (FLM): Mercury which is a component of a fluorescent lamp.

Fluorescent Fixture ballast (FFB): A small capacitor in a fluorescent light fixture. A FFB contains PCBs if the oil in the capacitor has been determined to contain greater than 50 ppm. A FFB which does not carry the label "No PCBs" is assumed to be PCB containing

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.

General Supervisor, Site Superintendent, Foreman: is the Contractor's representative at the work site. This person will be the Competent Person required by OSHA, 29 CFR 1926.1101.

HEPA Filter: A high efficiency particulate 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.

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.

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

Installer: The "installer" is defined as the entity (person or firm) engaged by the Contractor or Subcontractor 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.

Landfill Manifest: Document signed by a landfill operator acknowledging the receiving of waste.

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.

Manifest: A document detailing chain of custody for a shipment that is signed by the authorized representative of the receiver site.

Mercury: A heavy metal toxin that is a systemic poison which interferes with the function of the liver and kidneys.

Negative Exposure Assessment (NEA): Demonstration by the Abatement Contractor (employer) that worker (employee) exposure during an operation is expected to be consistently below the PEL or TLV. NEAs shall be conducted pursuant to OHSA 29 CFR 1926.1101.

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.

Owner: The County Board of Arlington County, Virginia.

Owner's Representative: The Person of a firm who will monitor the Contractor and represent the County during construction until final inspection. The Owner's Representative will advise and consult with the Project Officer regarding abatement. Instructions to the Contractor may be forwarded through the Owner's Representative or the Project Officer.

Permissible Exposure Limit (PEL): The maximum allowable limit to which a worker may be exposed to an environmental contaminant, as determined by the OSHA Reference Method of 29 CFR 1926.1101. For PCB's (Aroclor 1254)the PEL is 0.5 mg per cubic meter for an 8 hour TWA.

Personal Monitoring: Sampling of the contaminant levels within the breathing or other contact zone of an employee.

Plasticize: means to cover floors and walls with polyethylene sheeting as herein specified.

Polychlorinated Biphenyl (PCB): One of several aromatic compounds containing a biphenyl structure with one or more chlorine constituent atoms. (as defined by EPA)

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

Project Monitor: Project monitor, provided by the County to monitor the project, perform area sampling and issue final clearance certification.

Project Officer: The County employee responsible for overall contract administration.

Property Owner: The County Board of Arlington County, Virginia.

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.

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.

Recycle: To process at a permitted or licensed recycling facility in order to regain material for re-use.

Recycling Facility: Facility federally-permitted to recycle waste materials from this project, and complies with state and local regulations.

Regulated Area: An area where abatement operations are performed which is isolated by physical boundaries to prevent entry of unauthorized persons or the spread of contaminants. Within this area, the concentration of contaminants could reasonably be expected to exceed the PEL.

Removal: To eliminate from a specified location, a designated material or contaminant.

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

Rotating Blade (RB) Roof Cutter: RB roof cutter refers to an engine-powered roof cutting machine with one or more rotating cutting blades with edges of which are blunt. (Equipment with blades having sharp or tapered edges, and/or which does not use a rotating blade, is used for "slicing" rather than "cutting" the roofing materials; such equipment is not included in the term "RB roof cutter").

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.

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.

Submittal: Items which are required to be presented to the Project Officer and/or the Owner's Representative for review, consideration or decision.

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

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

Testing Laboratory: The "testing laboratory" is an independent entity to perform specific sampling and analysis at the work site and associated areas, to report and (if required) interpret results. Analyses 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 also be accredited by the National Institute of Standards and Technology (NIST) through the National Voluntary Laboratory Accreditation Program (NVLAP E, Appendix A).

Threshold Limit Value (TLV): The ACGIH value set for the concentration of a substance to which nearly all workers may be repeatedly exposed without adverse effect. The threshold limit value for mercury is 0.05 milligrams per cubic meter.

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

Toxicity Characteristic Leaching Procedure (TCLP): EPA-approved test for determining if the waste classification would be hazardous or non-hazardous. The regulatory TCLP limit for mercury is 0.2 milligrams per liter (mg/L).

Universal Waste: Universal Waste means any of the following hazardous wastes that are managed under the universal waste requirements 40 CFR 273:

(1) Batteries as described in Sec. 273.2 of this chapter;
(2) Pesticides as described in Sec. 273.3 of this chapter;
(3) Thermostats as described in Sec. 273.4 of this chapter; and
(4) Lamps as described in Sec. 273.5 of this chapter.

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

Waste Shipment Record: means the original shipping document, originated and signed by the waste generator (abatement Contractor) used to track and substantiate the disposal of regulated waste as described in 40 CFR Part 61.

Waste Generator: The County Board of Arlington County, Virginia and the Abatement Contractor shall be listed as Co-generators. The Abatement Contractor shall assume all the duties pertaining to the Waste Generator.

Wet Cleaning: The process of eliminating contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils that have been dampened with amended water

Work Area: The area where abatement-related work or removal operations are performed; the Work Area is defined and/or isolated to prevent the spread of contaminants and entry by unauthorized personnel. The Work Area is a Regulated Area as defined by 29 CFR 1926.1101.

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. The extent of the project site is and may or may not be identical with the description of land upon which the project is to be built.

1.2.3 ABBREVIATIONS AND ACRONYMS

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 date of Contract Documents:

ACGIH American Conference of Government Industrial Hygienists

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

AIHA American Industrial Hygiene Association
2700 Prosperity Avenue
Suite 250
Fairfax, VA 22031
(703) 849-8888

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

ASHRAE American Society for Heating, Refrigerating, and Air Conditioning Engineers
1791 Tullie Circle N.E., Atlanta, GA 30329
(404) 636-8400

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, D.C. 20402 (usually first published in Federal Register)
CGA	Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202 (703) 979-0900
CS	Commercial Standard of NIST (U.S. Department of Commerce) Government Printing Office, Washington, D.C. 20402
EPA	Environmental Protection Agency 401 M Street S.W., Washington, D.C. 20460 (202) 382-3949
f/cc	fibers per cubic centimeter
FM	Factory Mutual
FS	Federal Specification (General Services Administration) Obtain from Regional GSA Office, or purchase from GSA Specifications Unit (WFSIS); 7th and D Streets S.W., Washington, D.C. 20406 (202) 472-2205 or 2140
GA	Gypsum Association 1603 Orrington Avenue, Evanston, IL 60201 (312) 491-1744
gpm	gallons per minute
GSA	General Services Administration F and 18th Streets N.W., Washington, D.C. 20405 (202) 655-4000
MIL	Military Standardization Documents (U.S. Department of Defense) Naval Publications and Forms Center 5801 Tabor Avenue, Philadelphia, PA 19129
MSHA	Mine Safety and Health Administration
NEC	National Electrical Code (by NFPA)
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association Batterymarch Park, Quincy, MA 02269
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, D.C. 20402
PAT	Proficiency Analytical Testing
PCB	Polychlorinated biphenyls. Also refers to materials containing polychlorinated biphenyls.
PPE	Personal Protective Equipment
PS	Product Standard of NIST Government Printing Office, Washington, D.C. 20402
s/mm^2	structure per square millimeter (of filter surface)
TEM	Transmission Electron Microscopy
TLV	Threshold Limit Value of ACGIH
UL	Underwriters Laboratories 333 Pfinngsten Road, Northbrook, IL 60062
USC	United States Code
VHWMR	Virginia Hazardous Waste Management Regulations

1.3 CODES, REGULATIONS, AND STANDARDS

1.3.1 GENERAL: The contract work shall comply with the provisions or requirements of EPA, OSHA, federal and state regulations and to other elements that are included in this project.

This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits that are known to the County and that either must be applied for and received or that must be given to governmental agencies before start of work.

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

1.3.2 CODES AND REGULATIONS:

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, temporary waste storage, disposal, and protection of workers, visitors, 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 County and Owner's Representative harmless for failure to comply with any applicable regulation for which the Contractor, Contractor's employees, or subcontractors are responsible.

1.3.3 REGULATORY REQUIREMENTS:
Those requirements that govern PCB FFB and FLM abatement work or hauling and disposal of related waste materials include but are not limited to the following:

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

Respiratory Protection, 29 CFR 1910, Section 134.

Respiratory Protection, 29 CFR 1926, Section 103.

Construction Industry, 29 CFR 1910, Section 1001 and 1926 Section 1101.

Access to Employee Exposure and Medical Records, 29 CFR 1926, Section 33

Hazard Communication, 29 CFR 1910.1200, 29 CFR 1926.59

First Aid/Medical Attention, 29 CFR 1926.23

Illumination 29 CFR 1926.26

Sanitation 29 CFR 1926.27

Employee Training and Education 29 CFR 1926.21

Specifications for Accident Prevention Signs and Tags, 29 CFR 1910, Section 145.

Ladders and Scaffolding, 29 CFR 1926.450, 451, and 452.

Control of Hazardous Energy (lockout/tagout) 29 CFR 1926.147

Confined Space Entry 29 CFR 1926.21

b. EPA: U.S. Environmental Protection Agency:
CERCLA: Comprehensive Environmental Response, Compensation and Liability Act, 42 USC 9601 et seq., 40 CFR 300 et seq.

EPCRA: Emergency Planning and Community Right to Know Act, 42 USC 11004

RCRA: Resource Conservation and Recovery Act, 42 USC 6901 et seq., 40 CFR 240-268

SARA: Superfund Amendments and Reauthorization Act, 40 CFR 302-313

TSCA: Toxic Substances Control Act, 15 USC 2602-2671, 40 CFR 720-761

Designation of Hazardous Substances, 40 CFR 116

Identification and List of Hazardous Waste Materials, 40 CFR 261

Standards Applicable to Transporting of Hazardous Waste, 40 CFR 263

Standards for Owners and Operators of Hazardous Treatment Storage and Disposal Facilities, 40 CFR 264

Landfill Disposal Restrictions, 40 CFR 268

Verification of PCB Spill Cleanup by Sampling and Analysis, EPA-560/5-85-026, August 1985.

Wipe Sampling and Double Wash/Rinse Cleanup as Recommended by The EPA PCB Spill Cleanup Policy, June 23, 1987, Revised and Clarified April 18, 1991.

Field Manual For Grid Sampling of PCB Spill Sites to Verify Cleanup, EPA-560/5-86-017, May 1986.

c. DOT: Department of Transportation:

Hazardous Materials Transportation Act, 49 USC 1801 et seq., 49 CFR

Transportation, 49 CFR 170-179.

d. Commonwealth of Virginia:

Title 10.1, Chapter 10.1 through 1402 and effective parts of the Virginia Waste Management Board in accordance with Title 9, Chapter 9 through 6.14:4.1.C5 of the Solid Waste Management Regulations.

Virginia Department of Environmental Quality Waste Division, Office of Waste Resource Management, VHWMR, Section 3.2.G.3. and 6.1

Title 54, Chapter 7.00, Section 54-1 through 3 and effective parts of the Virginia State Board for Contractor's Regulations, and other regulations which may apply.

Title 54, Chapter 105, section 54.1-514 of the Code of Virginia.

Title 54, Chapter 5, Section 36.99.7, 54.1-103, 54.1-107, 54.1-500, 54.1-501, 54.1-502, 54.1-504, 54.1-515, 54.1-516, and 54.1-517 of the Code of Virginia.

Title 54, Chapter 49, Section 54.1-500 and 54.1-501 of the Code of Virginia.

Title 54, Chapter 50, Section 2.1-526.12 and 2.1-526.14:1 of the Code of Virginia.

Title 10.1, Chapter 10.1 through 1402 and effective parts of the Virginia Waste Management Board in accordance with Title 9, Chapter 9 through 6.14:4.1.C5 of the Solid Waste Management Regulations.

Virginia Uniform Statewide Building Code (VUSBC).

1.3.4 STANDARDS:

Those standards that govern PCB FFB and FLM abatement work or transporting and disposal of related waste materials include but are not limited to the following:

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

CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration," and Specification G-7.1-1966 "Commodity Specification for Air."

Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79.

Practices for Respiratory Protection Publication: Z88.2-80, AZ88.2-1988 and Z88.2-1992.

Safety Code for Portable Wooden Ladders: A14.1-1968

Safety Code for Portable Metal Ladders: A14.2-1956

Safety Requirements for Industrial Head Protection: Z89.1-1969

Safety Requirements for Industrial Eye Protection: Z87.1-1989

Safety Requirements for Men's Safety-Toe Footware: Z41.1-1967

Safety Requirements for Women's Safety-Toe Footware: Z41-1983

American Society for Testing and Materials (ASTM)
100 Barr Harbor Drive
West Conshohocken Pennsylvania 19428-2959
(610) 832-9585 FAX (610) 832-9555
Website: http://www.astm.org

1.4 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.

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)

9 VAC 20-60 Title 9, Agency 20, Chapter 60: Hazardous Waste Management Regulations

9 VAC 20-80 Title 9, Agency 20, Chapter 80: Solid Waste Management Regulations

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.1000 Air Contaminants

40 CFR 260 Hazardous Waste Management System: General

40 CFR 261 Identification and Listing of Hazardous Waste

40 CFR 262 Standards Applicable to Generators of Hazardous Waste

40 CFR 263 Standards Applicable to Transporters of Hazardous Waste

40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 268 Land Disposal Restrictions

40 CFR 270 EPA Administered Permit Programs: The Hazardous Waste Permit Program

40 CFR 273 Standards For Universal Waste Management

40 CFR 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

49 CFR 178 Specifications for Packagings

VIRGINIA OCCUPATIONAL SAFETY and HEALTH COMPLIANCE PROGRAM (VOSHA)

1910.120 Hazardous waste operations and emergency response
1910.1200 Hazard Communications
1910 subpart H Hazardous Materials
1910.307 Hazardous (classified) locations

1.5 QUALITY ASSURANCE

1.5.1 Regulatory Requirements

Perform PCB related work in accordance with 40 CFR 761 and 9 VAC 20-60 and 9 VAC 20-80. Perform mercury-containing lamps storage and transport in accordance with 40 CFR 261, 40 CFR 264, 40 CFR 265, 40 CFR 273 and 9 VAC 20-60 and 9 VAC 20-80.

1.5.2 Training

Certified industrial hygienist (CIH) shall instruct and certify the training of all persons involved in the removal of PCB containing lighting ballasts and mercury-containing lamps. The instruction shall include: The dangers of PCB and mercury exposure, decontamination, safe work practices, and applicable OSHA and EPA regulations. The CIH shall review and approve the PCB and Mercury-Containing Lamp Removal Work Plans.

1.5.3 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 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 265, 40 CFR 268, 40 CFR 270, 40 CFR 273 and 9 VAC 20-60 9 VAC 20-80 and of the Contractor removal work plan and disposal plan for PCB and for associated mercury-containing lamps.

1.5.4 Qualifications of CIH

Submit the name, address, and telephone number of the Industrial Hygienist selected to perform the duties in paragraph entitled "Certified Industrial Hygienist." Submit training certification that the Industrial Hygienist is certified, including certification number and date of certification or re certification.

1.5.5 PCB and 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 Personal Protective Equipment (PPE), spill cleanup procedures and equipment, eating, smoking and restroom procedures. The plan shall be approved and signed by the Certified Industrial Hygienist. Obtain approval of the plan by the Contracting Officer prior to the start of PCB and/or lamp removal work.

1.5.6 PCB and Lamp Disposal Plan

Submit a PCB and lamp Disposal Plan with 45 calendar days after award of contract. The PCB and Lamp Disposal Plan shall comply with applicable requirements of federal, state, and local PCB and Universal 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, as required.

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.

1.5 SUBMITTALS

Arlington County (AC) approval is required for submittals with a "AC" designation; submittals not having a "AC" designation are for Contractor Quality Control approval.

SD-07 Certificates

Qualifications of CIH; AC

Training Certification; AC

PCB and Lamp Removal Work Plan; AC

PCB and Lamp Disposal Plan; AC

SD-11 Closeout Submittals

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

Certification of Decontamination

Certificate of Disposal and/or recycling. Submit to the Government 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.

DD Form 1348-1

1.6 ENVIRONMENTAL REQUIREMENTS

Use special clothing:

a. Disposable gloves (polyethylene)

b. Eye protection

c. PPE as required by CIH

1.7 SCHEDULING

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

Part 2 PRODUCTS

2.1 SUMMARY

a. This section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
The Contractor's Construction Schedule and the Schedule of Submittals are included under Section 1.5 SUBMITTALS.

b. Standards: Refer to Sections 1.1 & 1.2 DEFINITIONS & ABBREVIATIONS and CODES, REGULATIONS & STANDARDS for applicability of industry standards to products specified.

c. Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 STARTUP SUBMITTALS

2.2.1 PRODUCT LIST SCHEDULE: Prepare a schedule showing products specified in a tabular form acceptable to the Owner's Representative. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed. Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.

2.2.2 FORM: Prepare the product listing schedule with information on each item tabulated under the following column headings:

Related Specification Section number.
Generic name used in Contract Documents.
Proprietary name, model number and similar designations.
Manufacturer's name and address.
Supplier's name and address.
Installer's name and address.
Projected delivery date, or time span of delivery period.

2.2.3 INITIAL SUBMITTAL: Minimum of 5-days prior to start of work, submit 3 copies of an initial product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.

2.2.4 OWNER'S REPRESENTATIVE'S ACTION: The Owner's Representative will respond in writing to the Contractor within 5 days of receipt of the completed product list schedule. The Owner's Representative's response will identify both accepted and unacceptable selections. A brief explanation will accompany any unacceptable designations.

2.3 QUALITY ASSURANCE

Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

2.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

2.5 PRODUCT SELECTION

2.5.1 GENERAL PRODUCT REQUIREMENTS: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects. Where products or manufacturers are specified by name, accompanied by the term "or equal," or" approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

2.5.2 DESCRIPTIVE SPECIFICATION REQUIREMENTS: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

2.5.3 PERFORMANCE SPECIFICATION REQUIREMENTS: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a

product is implied where the product is specified for a specific application.

2.5.4 Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

2.5.5 COMPLIANCE WITH STANDARDS, CODES AND REGULATIONS: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

All cleanup tools and materials shall contain less than 2 ppm (weight per weight) PCBs.

2.6 PROTECTIVE CLOTHING

2.6.1 BOOTS: All workers working in the Work Area shall wear ANSI certified foot wear.

2.6.2 COVERALLS: Provide disposable full-body protective coveralls and disposable foot and head covers and require that they be worn by all workers and visitors in the Work Area. Provide a sufficient quantity for all required changes for all workers and visitors to the Work Area.

2.6.3 GLOVES: Provide work gloves made of nitrile rubber, or equivalent PCB protection, to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area. The gloves used for handling PCB FFB can be used in handling the fluorescent lamps. However, do not handle the fluorescent lamps with PCB contaminated gloves, especially if the lamps are going to be recycled.

2.6.4 GOGGLES AND FACE SHIELDS: Provide eye and face protection (goggles or face shields) as required by OSHA for all workers involved in scraping, spraying, stripping or any other activity which may potentially cause eye or face injury. Thoroughly clean and decontaminate goggles or face shields before removing them from Work Area at the end of the project.

2.6.5 HARD HATS: Provide head protection (hard hats) meeting ANSI criteria, as required by OSHA for all workers and provide 4 spares for use by Owner's Representative 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 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 the Work Area at the end of the work.

2.7 PRODUCTS REGARDING RESPIRATORY PROTECTION

2.7.1 AIR PURIFYING RESPIRATORS:

a. Respirator bodies: Provide half face or full face type respirators. 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.
b. Filter Cartridges: Provide, at a minimum, HEPA-type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists, including Asbestos-Containing Dusts and Mists" and color-coded in accordance with ANSI Z88.2. As applicable, provide combination cartridges for any solvents used that are labeled with the appropriate color code and NIOSH/MSHA Certification.
c. Respirators Not Permitted: Do not use single-use disposable or quarter-face respirators.

2.8 SCAFFOLDING & LADDERS

Provide all scaffolding, ladders and/or staging, etc., as necessary to accomplish the work of this Contract. 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 all scaffolding shall comply with OSHA 29 CFR 1926.450 Subpart L, 1926.451 and 1926.452 and other applicable regulations.
Equip rungs of all metal ladders, etc., with an abrasive, non-slip surface.
Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.9 TEMPORARY HEAT

If necessary, provide temporary heating units that have been tested and labeled by UL. Use steam or hot water radiant heat where available, and where not available use electric resistant radiation supplied from a branch circuit with ground fault circuit interrupter. Under no circumstances shall forced-air or fan type units be utilized inside a Work Area.

2.10 TEMPORARY COOLING

Cooling Units: Provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.11 SELF-CONTAINED TOILETS

If toilets are not approved for use or available at the site, provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

2.12 FIRST AID

First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

2.13 FIRE EXTINGUISHERS

Provide Type “ABC” dry-chemical extinguishers or a combination of several extinguishers of NFPA recommended types. Fire extinguishers shall have an annual maintenance inspection and a monthly visual inspection card documenting the inspection dates in accordance with NFPA 10. Comply with the applicable recommendations of NFPA Standard 10, “Standard for Portable Fire Extinguishers.” Place fire extinguishers where they are most convenient and effective for their intended purpose. Assure that type “A”, “B”, and “C” extinguishers are available.

2.14 ELECTRICAL SERVICE

2.14.1 GENERAL: Comply with applicable VUSBC for materials and layout of temporary wiring and electrical power.

2.14.2 LAMPS AND LIGHT FIXTURES: Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.14.3 For power hand tools and task lighting, provide temporary double duplex outlets

2.15 TEMPORARY LIGHTING

Provide the following where natural lighting or existing building lighting does not meet the required light level: One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas, provide one 100-watt incandescent lamp every 50 feet. In stairways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere by combined use of daylight, general lighting, and portable plug-in task lighting.
Provide lighting in the Decontamination Unit as required to supply illumination approved by Project Monitor.

2.16 SIGNS:

Post a 20” X 14” caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926.

WARNING

POLYCHLORINATED BIBHENYLS (PCB’S) AND MERCURY-CONTAINING LAMPS
WORK AREA

POISON

NO SMOKING OR EATING

2.16.1 WASTE HANDLING EQUIPMENT, TOOLS AND MATERIALS

STORAGE/SHIPPING CONTAINERS FOR PCB'S:

Use DOT 17C 55-gallon open head steel drums approved for transporting PCB-containing hazardous waste. Place three to six inches of absorbent material in the bottom of each drum. Add a layer of absorbent material between each layer of ballasts. Drums with non-leaking ballasts may be packed without layering absorbent material between layers of ballasts provided that the disposal site will accept the drums. Weight of each loaded drum shall not exceed 900 pounds.

All drums containing ballasts shall bear the yellow, EPA-approved label:

"CAUTION: CONTAINS PCB'S (Polychlorinated Biphenyls). A toxic environmental contaminant requiring special handling and disposal in accordance with U.S. Environmental Protection Agency Regulations 40 CFR 761-For Disposal Information contact the nearest U.S.E.P.A. office. In case of accident or spill involving more than one pound of PCB oil, immediately telephone toll free the National Response Center: 800) 424-8802. Also telephone the Arlington County, VA Fire Department Emergency No. 911."

In addition each drum shall contain a material profile with the name, address and telephone number of the waste generator, the date on which the ballasts were first removed; a description of the material ("Discarded Fixture ballasts"), and the Department of Transportation Shipping Description ("RQ, Polychlorinated Biphenyls, 9, UN2316, PGII").

Accurate scale, for weighing each ballast.

STORAGE/SHIPPING CONTAINERS FOR FLM's:
Waste or recycling containers for fluorescent lamps, shall meet applicable industry, federal, state and local standards.

OTHER CONTAINERS:Provide 6 mil thick leak-tight polyethylene bags labeled with labels, as required by EPA and OSHA.

LABELS:All containers shall be labelled. All labels must be durable, able to repel dirt and moisture (e.g. permanent marker). Label must be placed directly on containers in a legible format. Peel and stick type labels are expressly prohibited. All labels must list –

names of waste co-generators

location from which the waste was generated, and
names and addresses of the Contractor and transporter.

2.17 OTHER MATERIALS AND EQUIPMENT

2.17.1 Lumber: Provide lumber of any grade or wood that is capable of withstanding the construction of the containment without losing its integrity from physical use, temperature and water.

2.17.2 Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6 mil thick as indicated, and clear, frosted, or black, as indicated.

2.17.3 Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to stick tenaciously to sheet polyethylene.

2.17.4 Spray Cement: Provide methylene chloride-free spray adhesive that sticks tenaciously to sheet polyethylene, in aerosol cans.

2.17.5 Hand tools - wrenches, screwdrivers, pliers, etc. normally used for removing and dismantling electrical ceiling light fixtures

2.17.6 Barrier Tape

2.17.7 Surfactant/amended water

2.17.8 HEPA Vacuum, wet/dry tank type with hose and attachments

2.17.9 PCB solvent-An organic solvent in which PCB's are soluble to at least 5% by weight.

2.17.10 Scrub brushes and/or disposable scrubbing pads for PCB's, compatible with PCB solvent and cleaner solutions

2.17.11 Absorbent paper or cloth wiping pads for PCB's, compatible with PCB solvent and cleaner solutions

2.17.12 Absorbent cloth mop for PCB's

2.17.13 Cleaner solution for PCB's made up of concentrated or industrial strength detergent or non-ionic surfactant

2.17.14 Mercury Spill kit, County-approved, consisting of at minimum; complete instructions for use, equipment and materials for clean-up of mercury contaminated materials resulting from broken FLM lamps.

2.17.15 Other products, as may be required

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 Contracting Officer prior to commencing the operation.

c. Reporting leaks and spills to the Contracting Officer.

d. Cleaning up spills.

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

f. Maintaining inspection, inventory and spill records.

3.2.1 Occupants and Workers Protection

a. The Contractor shall take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to PCB’s and mercury. Such measures shall

include the procedures and methods described herein, and compliance with applicable federal, state and local regulations.

3.2.2 Building Access: Entry and exit to the work area shall be coordinated with the Project Officer. Throughout the project, the Contractor shall maintain unobstructed access to emergency/fire exits for use by abatement workers and building occupants as approved by the Fire Marshal.

3.2.4 Shut Down of building systems: Coordinate with the Project Officer to shutdown the appropriate HVAC system, disconnect emergency lighting battery packs, and fire or smoke detection systems by providing adequate notice.

3.2.5 HVAC System: The HVAC system will remain isolated and shut down until final clearance sampling has been completed.

3.2.6 Signs: At entry to Change Room post a sign as required by 29 CFR 1926.1101.

3.3 REMOVAL OF PCB FFB and FLM

3.3.1 GENERAL:
This section describes the procedures of the abatement project. Determining exact quantities and site measurements are the responsibility of the Contractor.

a. Coordinate all work with any asbestos abatement and/or lead-based paint abatement performed during this project, so as to prevent and control the unnecessary disturbance of asbestos containing materials, and/or lead-based paint.

b. The Contractor shall coordinate with the County to lockout and tagout all electrical power to the project fixtures to be abated.

c. The Contractor shall insulate the ends of all exposed wires left by the project. Either electrical insulation tape or wire nuts may be used. The Contractor shall carefully remove the lamps from the fixtures and place them, unbroken, in the fluorescent lamp storage/transport boxes, to avoid crushing. If any fluorescent lamps are broken, stop work in the area and follow decontamination/cleanup procedures specified in Section 3.5.

d. After removal of the lamps, the Contractor shall disconnect the project fixtures and place them in a staging area on floor covered with 2 layers of poly sheeting.

e. Workers, using hand tools, shall dismantle the fixtures and remove the ballasts. Clip all connecting wires close to the ballast and cap with wire nuts. If any ballasts are observed to be leaking an oily substance, stop work in the area and follow decontamination/cleanup procedures specified in Section 3.5. Follow procedures specified in Section 3.13, Disposal of Waste, for proper packing of all ballasts.

f. Non-contaminated remaining portions of the fixtures shall be disposed of as non-hazardous waste at a local landfill. If designated in writing by the County, these non-hazardous waste materials may be left on site in a location designated by the County.

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 test results of cleanup and certification of decontamination.

3.3 PCB AND MERCURY HAZARD REDUCTION-LEAK CLEANUP AND DECONTAMINATION

This section describes decontamination of the Work Area where visible leakage of PCB's and/or fluorescent lamps breakage has occurred, in addition to final cleaning and inspection of the work area. When decontaminating surfaces which will remain in place, use the following procedures.

3.3.1 FOR SPILLED/LEAKING PCB'S:

a. General:

1) Thoroughly wipe/mop the entire spill area with absorbent paper or cloth material, until there are no visible signs of the liquid on the surface.

2) All PCB wash/rinse cleaning/absorbent materials must remain intact (i.e. do not shred, crumble or leave visible fragments on the surface) after the double wash/rinse operation.

3) During the double wash/rinse process, all washing and rinsing liquids/solvents must be contained, captured and properly disposed in accordance with local, state and federal regulations.

4) Following use in the double wash/rinse process, all equipment and absorbent materials must also be disposed in accordance with local, state and federal regulations.

5) Use the most appropriate of the following double wash/rinse procedures:

b. <u>For PCB spills on surfaces that are **not** dusty or grimy or are of non-porous material such as glass, newly-poured concrete, or polished wood:</u>

1) <u>WASH 1</u>: After having removed the visible liquid, cover the entire surface with PCB solvent. Contain and collect any runoff solvent for disposal as hazardous waste. Scrub rough surfaces with a scrub brush or disposable scrubbing pad. Add solvent such that the surface is always very wet for one minute per square foot. Wipe surfaces with a solvent-soaked, disposable absorbent pad for one minute per square foot. Any surface less than one square foot shall also be washed for one minute. Wipe, mop, and/or absorb the solvent onto absorbent material until no visible traces of the solvent remain.

2) <u>RINSE 1</u>: Wipe all of the wet surface with a disposable absorbent pad wetted with the organic solvent used for washing, for one minute per square foot. Any surface less than one square foot shall also be wiped for one minute. Immediately wipe/soak up the solvent on the surface with a dry absorbent pad.

3) <u>WASH 2</u>: Repeat WASH 1.

4) <u>RINSE 2</u>: Repeat RINSE 1.

c. <u>For PCB spills on surfaces which are dusty, grimy, greasy or are of porous materials:</u>

1) <u>WASH 1</u>: After having removed the visible liquid, cover the entire surface with a cleaner solution of concentrated or industrial strength detergent or non-ionic surfactant solution.

Contain and collect all cleaning solutions for proper disposal. Scrub rough surfaces with a scrub brush or scrubbing pad, adding cleaning solution so that the surface is always very wet, for one minute per square foot. Wipe spill area with a cleaner solution-soaked disposable absorbent pad for one minute per square foot. Any surface less than one square foot shall also be washed for one minute. Mop up or absorb the residual cleaner solution and suds with absorbent pads until the surface appears dry. Continue until residual dirt, dust, grime or other absorbent materials left on the surface are removed.

2) RINSE 1: Rinse off the wash solution with one gallon of water per square foot and capture the rinse water for disposal as hazardous waste. Mop up the wet surface until the surface appears dry.

3) WASH 2: Next, cover the entire surface with the PCB solvent. Scrub rough surfaces with a scrub brush or disposable scrubbing pad adding solvent such that the surface is always very wet for one minute per square foot. Wipe surfaces with a solvent-soaked, disposable absorbent pad for one minute per square foot. Any surface less than one square foot shall also be washed for one minute. Wipe, mop, and/or absorb the solvent onto absorbent material until no visible traces of the solvent remain.

4) RINSE 2: Wipe the surface with an absorbent pad wetted with the same solvent as in WASH 2 (above) and immediately wipe up the solvent on the surface with a dry absorbent.

3.3.2 FOR BROKEN FLUORESCENT LAMPS:

If fluorescent lamps are broken, the Contractor shall incur all costs associated with their clean up, to include air and/or wipe sampling for mercury-contamination as determined by the Owner's representative.

Cleanup steps for broken lamps:

1) At the time a lamp breaks, all workers nearby must stop work and begin clean up procedures, addressing the mercury hazard first.

2) Person involved in the clean-up shall wear protective gloves. Additional personal protective equipment may be required.

3) Prior to collecting the broken glass, workers shall use a mercury spill kit, per manufacturer's instructions, for absorbing any spilled liquid mercury. Cleanup of the mercury spill area shall continue until there is no liquid mercury visible.

4) All mercury-contaminated waste shall be disposed of in approved containers and not mixed with the asbestos waste or lead-based paint waste.

5) After the liquid mercury spill area has been sufficiently cleaned and the waste contained, workers shall pickup broken pieces of the lamp. The pieces shall be treated and handled as mercury-containing hazardous waste.

6) All mercury-contaminated waste shall be placed in approved hazardous waste containers, sealed and labeled, "MERCURY".

3.4 REMOVAL

3.4.1 Ballasts

As ballast are 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. If there are less than 1600 "No PCB" labeled lighting ballasts dispose of them as normal demolition debris. If there are more than 1600 "No PCB" labeled ballasts, establish whether the "No PCB" labeled ballasts contain diethylhexyl phthalate (DEHP) either by test or by checking with the ballast manufacturer indicated on the label. Submit testing results and/or written confirmation from the manufacturer to the Contracting Officer. If the ballasts do not contain DEHP, dispose of them as normal construction debris. If they do contain DEHP, dispose of them as hazardous material in accordance with Federal, State, and local regulations. As a basis of bid assume ballasts with "No PCB" labels do not contain DEHP and may disposed of as normal construction debris. If 1600 or more DEHP ballasts are disposed of in a 24 hour period, notify the National Response Team at 800-424-8802.

3.4.2 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 universal waste as specified herein.

3.5 STORAGE FOR DISPOSAL

3.5.1 Storage Containers for PCBs

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

3.5.2 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 273.

3.5.3 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 40 CFR 273. Affix labels to all lighting waste containers.

3.6 DISPOSAL

Dispose of off Government property in accordance with EPA, DOT, and local regulations at a permitted site.

3.6.1 Identification Number

Federal regulations 40 CFR 761, and 40 CFR 263 require that generators, transporters, commercial storers, and disposers of PCB 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. For mercury containing lamp removal, Federal regulations 40 CFR 273 require that large quantity handlers of Universal waste (LQHUW) must provide notification of universal waste management to the appropriate EPA Region (or state director in authorized states), obtain an EPA identification number, and retain for three years records of off-site shipments of universal waste. The contractor shall verify that the activity has a U.S. EPA generator identification number for use on the Universal 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.

3.6.2 Transporter Certification

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

3.6.2.1 Certificate of Disposal and/or Recycling

40 CFR 761. Certificate for the PCBs and PCB items 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 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 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 --

SECTION 13283
LEAD-BASED PAINT ABATEMENT

PART 1. GENERAL

The Project consists of the removal of the following lead-containing materials, in conjunction with a major building renovation:

1.1 SUMMARY OF WORK - LEAD-BASED PAINT ABATEMENT

1.1.1 PLAN OF ACTION:

Submit a detailed job-specific plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location, size, layout and details of the work areas and worker decontamination facilities. Include the sequencing of abatement work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Describe method of removal to reduce lead dust generation in the work area, and packaging of removed lead paint, dust and debris. Describe the methods that will be used to comply with VOSHA requirements .

1.2 REFERENCE STANDARDS AND DEFINITIONS

1.2.1 DEFINITIONS

Abatement: means any set of measures designed to eliminate lead-based paint hazards in accordance with standards proposed by the United States Environmental Protection Agency under Title IV of TSCA and per Virginia DPOR Statute 54.1, Chapter 5. Abatement does not include activities whose primary intent is not to permanently eliminate lead-based paint hazards, but is instead to repair, restore or remodel, even though these activities may incidentally result in a reduction in lead-based paint hazards.

Accreditation: A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.

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.

Accredited Training Provider: means a training provider that meets the standards established by EPA to train risk assessors, inspectors, supervisors, and workers.

Action Level: Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air calculated as an 8-hour Time Weighted Average (TWA) (OSHA 29 CFR 1926.62).

Adhesion: the ability of dry paint or other coating to attach to or remain fixed on a surface without blistering, flaking, cracking, or being removed by tape.

Approved: The term approved, when used in conjunction with the Owner's Representative action on the Contractor's submittals, applications, and requests, is limited to the Owner's Representative duties and responsibilities as stated in the Conditions of the Contract.

Area Sampling: Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel (approximately 5 to 6 feet above the floor).

Authorized Visitor: County personnel authorized by the Project Officer, or a representative of any federal, state or local regulatory agency having authority over the project are considered authorized visitors.

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).

Board: means the Virginia Board for Asbestos Licensing and Lead Certification.

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.

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

Certified Contractor: means a firm which has been issued an authorization by the department permitting the firm to enter into contracts to perform abatement activities. The term Contractor is used for Certified Contractor throughout this specification.

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

Certified Inspector/Risk Assessor for Target Housing and Public Buildings: means an individual who has been issued a certification by the department to perform inspections and risk assessments for target housing and public buildings.

Certified Inspector Technician for Target Housing and Public Buildings: means an individual who has been issued a certification by the department to perform inspections in target housing and public buildings.

Certified Lead Worker for Target Housing and Public Buildings: means an individual who has been issued a certification by the department to perform deleading, lead removal, and demolition activities under the supervision of a certified supervisor on target housing and public buildings.

Certified Planner/Project Designer for Target Housing and Public Buildings: means an individual who has been issued a certification by the department to plan and design abatement projects in target housing and public buildings.

Certified Supervisor for Target Housing and Public Buildings: means an individual who has been issued a certification by the department to supervise lead-based paint abatement projects on target housing and public buildings, and to design abatement projects involving fewer than 10 units on target housing and public buildings.

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.

Common Area: A room or area that is accessible to all tenants in a project (e.g., hallway, boiler room). Generally, any area that is not kept locked.

Competent Person: An agent of the Contractor who is a Competent Person as defined by OSHA in 29 CFR 1926.62. This person must be capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has Authorization by the Contractor to take prompt corrective measures to eliminate them. The Competent Person has authority to shut down the project in accordance with OSHA 1962.62.

Completion: The work of this contract is complete when all work set forth in the Contract Documents is completed and accepted by the County.

Contaminated Room: Refers to a room for removal of contaminated personal protective equipment (PPE).

County: The County Board of Arlington County, Virginia

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

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.

Department: means the Department of Professional and Occupational Regulation (DPOR) or any successor agency.

Deteriorated Paint: means paint which is cracking, flaking, chipping, or peeling from a building component.

Encapsulation: means a process that makes lead-based paint inaccessible, by providing a barrier between the lead-based paint and the environment, with this barrier being formed using a liquid applied coating or an adhesively bonded material, and when the primary means of attachment is by the bonding of the product to the surface either by itself or through the use of an adhesive. This excludes painting unless abrasive surface preparation is performed.

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.

Federal Register: A document published daily by the Federal government that contains either proposed or final regulations.

Furnish: The term furnish means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.

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:

a) Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
b) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
c) As defined in the regulations, a solid waste is hazardous if it meets one of four conditions:
   i. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24).
   ii. Has been listed as hazardous (40 CFR Section 261.31 through 261.33).
   iii. 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).
   iv. Is not excluded from regulation as a hazardous waste

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.

High Phosphate Detergent: Detergent which contains at least 5% tri-sodium phosphate (TSP).

Indicated: The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Location is not limited.

Inspection: means a surface-by-surface investigation for the presence of lead-based paint conducted by a certified inspector technician or inspector/risk assessor according to the procedures in the Virginia lead-based paint activities regulations(VA DPOR 54.1, 5).

Install: The term install describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform. The term experienced, when used with the term Installer, means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.

Interim Controls: means a set of measures designed to reduce temporarily human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs.

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.

Lead: Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds (OSHA, 29 CFR 1926.62).

Lead-containing Substance: (VA DPOR 54.1,5) means any coating, paint, plaster or surface encapsulation material containing more than 0.5 percent lead by weight of dry film or more than one milligram of lead per square centimeter of dry film, or other materials meeting standards that are consistent with applicable federal regulations. (NOTE: OSHA regulations may have a different standard.)

Lead-based Paint Activities: means (1) in the case of target housing, risk assessment, inspection, planning, project designing and abatement; and (2) in the case of any public building constructed before 1978, commercial building, bridge, or other structure or superstructure, identification of lead-based paint and materials containing lead-based paint, deleading, removal of lead from bridges, and demolition.

Lead-contaminated Soil: means bare soil on residential or child-occupied real property that contains lead at or in excess of, the levels determined to be hazardous.

Lead Control Area: A system of control methods to prevent the spread of lead dust, paint chips or debris to adjacent areas that may include temporary containment, floor or ground cover protection, physical boundaries, and warning signs to prevent unauthorized entry of personnel. HEPA filtered local exhaust equipment may be used as engineering controls to further reduce personnel exposures or building/outdoor environmental contamination.

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 work day, the PEL shall be determined by the following formula:

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

Material Containing Lead/Paint with Lead (MCL/PWL): Any material, including paint, which contains lead as determined by the testing laboratory using a valid test method. The requirements of this section does not apply if no detectable levels of lead are found using a quantitative method for analyzing paint or MCL using laboratory instruments with specified limits of detection (usually 0.01%). An X-Ray Fluorescence (XRF) instrument is not considered a valid test method.

Manifest: A document detailing chain of custody for lead waste hauled that is signed by the authorized representative of the waste disposal site.

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.

Owner: The County Board of Arlington County, Virginia

Owner's Representative: The Person of a firm who will monitor the Contractor and represent the County during construction until final inspection. The Owner's Representative will advise and consult with the Project Officer regarding lead abatement. Instructions to the Contractor may be forwarded through the Owner's Representative or the Project Officer.

Permissible Exposure Limit (PEL) for Lead: (OSHA 29 CFR 1926.62) Fifty Micrograms per cubic meter of air as an 8-hour time weighted average. If an employee is exposed to lead for more than 8 hours in any work day, the employee's allowable exposure as a Time Weighted Average (TWA) for that day, shall be reduced according to the following formula:

Allowable Employee Exposure ($\mu g/m^3$) = 400/Hours Worked in the Day.

Personal Monitoring: Sampling of the lead dust concentrations within the breathing zone of an employee.

Personal Protection Equipment (PPE): means specialized clothing and equipment, including but not limited to, respirators, masks and gloves, designed to protect workers against chemical and physical hazards.

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.

Project Manager (Contractor): The lead-based paint abatement contractor's employee responsible for the total oversight of the project.

Project Manual: A bound manual consisting of the General Conditions, the Supplementary Conditions, any Special Conditions and the specification sections.

Project Monitor: This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Project Monitor is a full time representative of the Owner at the job site. The Project Monitor has the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgement of the Project Monitor or the Owner's Representative, the Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.

Project Officer: The County employee responsible for overall contract.

Property Owner: The County Board of Arlington County, Virginia

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.

Provide: The term provide means to furnish and install, complete and ready for the intended use.

Public Building: means any building constructed prior to 1978, except target housing, which is generally open to the public or occupied or visited by children, including but not limited to, schools, daycare centers, museums, airport terminals, hospitals, stores, restaurants, office buildings, convention centers, and government buildings.

Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

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

Risk Assessment: means an on-site investigation conducted by a certified inspector/risk assessor according to the procedures in these regulations to determine the existence, nature, severity and location of lead-based paint hazards, and the provision to the property owner/occupant of a report explaining the results of the investigation and providing options for reducing lead-based paint hazards with a rationale for those options.

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.

Student T-Test: means a statistical analysis used to determine if the difference between pre-and post-abatement soil lead levels are significantly different from each other.

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.

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

TSP: Acronym for tri-sodium phosphate.

ULPA - Ultra Low Particulate Air: Means a filter capable of filtering out particles of 0.13 microns or greater from a body of air at 99.9995% efficiency or greater.

Visual Inspection for Clearance Testing: means the visual examination of the abatement site following an abatement action for evidence that the abatement has been successfully completed, as indicated by the absence of visible residue, dust and debris.

Waste Generator: The County Board of Arlington County, Virginia and the Abatement Contractor shall be listed as Co-generators. The Abatement Contractor shall assume all the duties pertaining to the Waste Generator, including signing the waste manifests and applying for the Waste Generator ID Number.

Wet Cleaning (Wet Detergent Wash): The process of eliminating lead dust contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with a solution of water and trisodium phosphate (TSP) or appropriate substitute and afterwards thoroughly decontaminated or disposed of as lead contaminated waste.

Work Area: The area where lead based paint abatement or related work is performed which is defined and/or isolated to prevent the spread of lead dust, or debris, and entry by unauthorized personnel.

Work Practice: A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

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 may or may not be identical with the description of land upon which the project is to be built.

1.2.2 INDUSTRY STANDARDS

1) Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

2) Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.

3) Conflicting Requirements: Where compliance with 2 or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and uncertainties to the Owner’s Representative for a decision before proceeding.

a. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Owner’s Representative for a decision before proceeding.

4) Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

a. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.

5) Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

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

A2LA American Association for Laboratory Accreditation
656 Quince Orchard Road #300
Gaithersburg, MD 20878 (301) 670-1377

AIA The American Institute of Architects
1735 New York Ave., NW
Washington, DC 20006 (202) 626-7300

AIHA American Industrial Hygiene Assoc.
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031-4307 (703) 849-8888

ANSI American National Standards Institute
11 West 42nd St., 13th Floor
New York, NY 10036 (212) 642-4900

ASTM American Society for Testing and Materials
1916 Race St.
Philadelphia, PA 19103-1187 (215) 299-5400

GA Gypsum Association
810 First St., NE, Suite 510
Washington, DC 20002 (202) 289-5440

IESNA Illuminating Engineering Society of North America
345 E. 47th St.
New York, NY 10017 (212) 705-7926

ML/SFA Metal Lath/Steel Framing Assoc.
(A Division of the National Association
of Architectural Metal Manufacturers)
600 S. Federal St., Suite 400
Chicago, IL 60605 (312) 922-6222

NEC National Electrical Code (from NFPA)

NEMA National Electrical Manufacturers Assoc.
2101 L St., NW, Suite 300
Washington, DC 20037 (202) 457-8400

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

NSF National Sanitation Foundation
3475 Plymouth Rd.
P.O. Box 130140
Ann Arbor, MI 48113-0140 (800) 223-2301;(313) 769-8010

PDCA Painting and Decorating Contractors of America
3913 Old Lee Highway Suite 33-B
Fairfax, VA 22030 (703) 359-0826

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

1.2.3 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. 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.

CFR Code of Federal Regulations
(Available from the Government Printing Office)
N. Capitol St. between G and H St. NW
Washington, DC 20402 (202) 783-3238
(Material is usually first published in the
"Federal Register")

CPSC Consumer Product Safety Commission
5401 Westbard Ave.
Bethesda, MD 20207 (800) 638-2772

EPA Environmental Protection Agency
401 M St., SW
Washington, DC 20460 (202) 382-2090

HUD Department of Housing and Urban Development
Office of Lead-Based Paint Abatement and Poisoning Prevention
Room B-133
451 7th St. SW, Washington, DC 20410 (202) 755-1805

MSHA Mine Safety and Health Administration
(U.S. Department of Commerce)
4015 Wilson Blvd
Arlington, VA 22203 (703) 235-1565

NIOSH National Institute of Occupational Safety and Health
U.S. Dept. of Labor, Room N-3718
200 Constitution Ave, N.W.

Washington, D.C. 20210 (800) 35-NIOSH

NIST National Institute of Standards and Technology
(U.S. Department of Commerce)
Gaithersburg, MD 20899 (301) 975-2000

OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)
200 Constitution Ave., NW
Washington, DC 20210 (202) 219-6091

1.3 CODES, REGULATIONS AND STANDARDS - LEAD-BASED PAINT

1.3.1 SUMMARY

1) This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

2) Requirements include adherence to work practices and procedures set forth in applicable codes, regulations, guidelines and standards.

3) Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

4) 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.

5) 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 Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

1.3.2 FEDERAL REQUIREMENTS:

Which govern lead based paint abatement work or hauling and disposal 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 1926.20 -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 Standard;

29 CFR 1926.62 -Lead Construction Standard

29 CFR 1926.103 -Respiratory protection;

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

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)

40 CFR 745 (Proposed) Lead Based Paint Activities: Training, Certification, and Work Practice Requirements

4) HUD: Department of Housing and Urban Development

24 CFR 35, 905, 941, 965 and 968 Lead Based Paint Hazard Elimination; Interim Rule

1.3.3 COMMONWEALTH OF VIRGINIA

Title 54.1 Chapter 5, Virginia Lead-based Paint Activities Regulations, October 1, 1995.

16 VAC 25-35 Title 16, Agency 25, Chapter 35: Regulation Concerning Certified Lead Contractor's Notification, Lead Project Permits And Permit Fees

18 VAC 15-30 Title 18, Agency 15, Chapter 30: Virginia Lead-Based Paint Activities Regulations

1.3.4 VIRGINIA OCCUPATIONAL SAFETY and HEALTH COMPLIANCE PROGRAM (VOSHA)

1910.120 Hazardous waste operations and emergency response
1910.1200 Hazard Communications
1910 subpart H Hazardous Materials
1910.307 Hazardous (classified) locations

1.3.5 UNDERWRITERS LABORATORIES (UL)

UL 586 (1996; Rev thru Apr 2000) High-Efficiency, Particulate, Air Filter Units

1.4 SUBMITTALS

1.4.1 GENERAL:

Before Start of Work: Submit a copy of each item in this article to the Owner and Owner's Representative. No work shall begin until these submittals are approved.

1) State and Local Regulations: Submit copies of codes and regulations applicable to the work.

2) State Notification: Submit copy of notification to the Virginia Department of Labor and Industry per VA DPOR 54.1, Chapter 5.

3) Permits: Submit copies of current valid permits required by state and local regulations, including building and electrical.

4) Licenses: Submit copies of all State and Local licenses and permits necessary to carry out the work of this contract.

5) Lead abatement workplan: Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification including the following information:
Sequencing of abatement work
Interfacing with other trades, such as demolition and exterior repairs
Work isolation plan
Routing plan for removal of lead waste from the site

6) For all lead abatement workers and supervisors-Copies of current VA licenses

7) Written description of lead abatement work procedures, including coordination and interfacing with other trades, such as demolition and painting

8) SAMPLE of fully executed Waste Manifest signed by the Contractor as Co-Generator

9) SAMPLE of waste container labels to be used indicating the Contractor as Co-Generator

10) Licenses and/or permits for all proposed waste disposal sites and waste transporters. Include any proposed temporary off-site storage.

11) Material Safety Data Sheets for all liquids and other chemical proposed for use in the abatement work.

12) Written description of lead abatement work procedures, including coordination with other trades, such as demolition and painting.

Arlington County (AC) approval is required for submittals with a "AC" designation; submittals not having a "AC" designation are for Contractor Quality Control approval.

SD-01 Preconstruction Submittals

Occupational and Environmental Assessment Data Report (if objective data is used to justify excluding the initial occupational exposure assessment); G

Lead Compliance Plan including CP approval
(signature, date, and certification number); G

Competent Person qualifications; G

Training Certification of workers and supervisors; G

Lead waste management plan; G

Written evidence that TSD is approved for lead disposal; G

Certification of Medical Examinations; G

SD-06 Test Reports

Sampling results; G

Occupational and Environmental Assessment Data Report; G

SD-07 Certificates

Testing laboratory qualifications; G

Occupant Notification; G

Third party consultant qualifications; G

Clearance Certification; G

SD-11 Closeout Submittals

Completed and signed hazardous waste manifest from treatment or disposal facility; G

Waste turn-in documents or weight tickets for non-hazardous wastes that are disposed of at sanitary or construction and demolition landfills; G

1.4.2 SUBMITTAL PROCEDURES

Coordinate preparation and processing of submittals with performance of construction activities. Transmit pre-start submittals, one copy each, to Owner and Owner’s Representative, at least 5 days prior to start of work. Submit invoice/closeout submittals with the final invoice.

The following submittals are required: Bid Submittals (due with bid), Start-up Submittals (due 5-days prior), and Invoice Submittals (due with Final Payment Request).

The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

1.5 QUALITY ASSURANCE
1.5.1 Qualifications
1) 1.5.1.1 Competent Person (CP)

Submit name, address, and telephone number of the CP selected to perform responsibilities specified in paragraph entitled "Competent Person (CP)
Responsibilities." Provide documented construction project-related experience with implementation of OSHA's Lead in Construction standard (29 CFR 1926.62) which shows ability to assess occupational and environmental exposure to lead, experience with the use of respirators, personal protective equipment and other exposure reduction methods to protect employee health. Submit proper documentation that the CP is trained and licensed in accordance with federal, Commonwealth (18 VAC 15-30) and local laws. The competent person shall be a licensed lead-based paint abatement Supervisor/Project Designer in the Commonwealth of Virginia.

2) 1.5.1.2 Training Certification

Submit a certificate for each worker and supervisor, signed and dated by the accredited training provider, stating that the employee has received the required lead training specified in 29 CFR 1926.62.

3) 1.5.1.3 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the air and wipe analysis, testing, and reporting of airborne concentrations of lead. Use a laboratory participating in the EPA
National Lead Laboratory Accreditation Program (NLLAP) by being accredited by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis. Laboratories selected to perform blood lead analysis shall be OSHA approved.

1.5.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

1) Schedule: Provide proposed detailed schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates.

2) Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit Work by separate Contractors and partial occupancy by the Owner prior to Completion.

3) Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation. Include indication of start and finish times for the following:

1. Non lead-based paint demolitions.
2. Preparation of the Work Area
3. Lead-based paint removal
4. Removal of lead-based painted installations.
5. Clearance Testing
6. Completion.

1.5.3 DAILY CONSTRUCTION REPORTS

Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Owner's Representative at weekly intervals:

1. Log of those entering and leaving Work Area.
2. List of subcontractors at the site.
3. Approximate count of personnel at the site.
4. High and low temperatures, general weather conditions.
5. Accidents and unusual events.
6. Meetings and significant decisions.
7. Stoppages, delays, shortages, losses.
8. Meter readings and similar recordings.
9. Emergency procedures.
10. Orders and requests of governing authorities.
11. Change Orders received, implemented.
12. Services connected, disconnected.
13. Equipment or system tests and start-ups.
14. Partial Completions, occupancies.
15. Completions authorized.

1.5.4 PRODUCT DATA

1) Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

2) Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

a)Manufacturer's printed recommendations.
b)Compliance with recognized trade association standards.
c)Compliance with recognized testing agency standards.
d)Application of testing agency labels and seals.
e)Notation of dimensions verified by field measurement.
f) Notation of coordination requirements.

1.5.5 SUBMITTALS REGARDING CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

Before the Start of Work: Submit the following to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Begin no work until these submittals are approved.

1) Scaffolding: submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.

2) Hot water heater: Submit manufacturers name, model number, size in gallons, heating capacity, power requirements.

3) Decontamination Unit Sub-panel: Submit product data.

4) Ground Fault Circuit Interrupters (GFCI): Submit product data.

5) Lamps and Light Fixtures: Submit product data.

6) Temporary Heating Units: Provide product data.

7) Temporary Cooling Units: Provide product data and installation instructions.

8) Self Contained Toilet Units: Provide product data and name of sub-contractor used for servicing self contained toilets. Submit method to be used for servicing.

9) First Aid Supplies: Provide list of contents of first aid kit. Submit in form of check list.

10) Fire Extinguishers: Provide product data. Submit schedule indicating location at job site.

1.5.6 SUBMITTALS REGARDING NEGATIVE PRESSURE ENCLOSURES

Before Start of Work: Submit design of pressure differential system to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Do not begin work until submittal is approved.

1) Number of HEPA filtered fan units required and the calculations necessary to determine the number of machines

2) Description of projected air flow within Work Area and methods required to provide adequate air flow in all portions of the work area

3) Anticipated pressure differential across Work Area enclosures

4) Description of methods of testing for correct air flow and pressure differentials

5) Manufacturer's product data on the HEPA filtered fan units to be used

6) Location of the machines in the Work Area

7) Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power

8) Description of work practices to insure that airborne dust travels away from workers

9) Manufacturer's product data on equipment used to monitor pressure differential between inside and outside of Work Area

10) Manufacturer's product data on auxiliary generator to be used

11) Manufacturer's product data on auxiliary power switch to be used

12) Schematic diagram of power and auxiliary power supply to HEPA filtered fan units

On a weekly basis: Submit printout from pressure differential monitoring equipment. Mark printout with date and start of time for each day. Use printout paper that indicates elapsed time in intervals no greater than hours. Indicate on each day's record times of starting and stopping abatement work, type of work in progress, breaks for lunch or other purposes, periods of stop work, and filter changes. Cut printout into segments by day, attach to 8 2" by 11" paper. Label with project name, contractors name and date.

1.5.7 SUBMITTALS REGARDING WORKERS PROTECTION

Before Start of Work: Submit the following to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Do not start work until these submittals are approved.

1) Certifications: Submit evidence that all workers and supervisors have been trained, certified and accredited as required by federal, state, or local code or regulation.

2) Certificate of Worker's Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the Work Area.

3) Training Program: Submit a course outline of the worker and supervisor training courses. Include date and time course was given, name and title of teacher.

4) Report from Medical Examination: conducted within last 12 months as part of compliance with medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:

a. Name and Social Security Number

b. Physicians Written Opinion from examining physician including at a minimum the following:

i Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from lead exposure.

ii Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

iii Results of blood lead determinations and any actions taken as a result of recommendations.

iv Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that necessitates further medical exam or treatment.

c. Copy of information that was provided to physician prior to the examination.

d. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

e. Compliance Program: Submit program in compliance with 1926.62.

f. Exposure Assessment: Submit assessment in compliance with 1926.62.

g. Notarized Certifications: Submit certification signed by an officer of the contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept as required in this specification.

1.5.8 SUBMITTALS REGARDING RESPIRATORY PROTECTION

Before Start of Work submit the following to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Do not begin work until these submittals are approved.

1) Written Respiratory Protection Program: Submit written respiratory protection program in accordance with the OSHA Respiratory Protection Standard 29 CFR 1926.103, 29 CFR 1910.134 and OSHA Lead Construction Standard 1926.62.

2) Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

3) Respiratory Protection Schedule: Submit level of respiratory protection intended for each operation required by the project.

4) Historic Sampling Data: Submit air sampling data from previous projects to substantiate selection of respiratory protection proposed. Data submitted shall include at least the following for each procedure required by the work

a. Date of measurements
b. Operation monitored
c. Sampling and analytical methods used and evidence of their accuracy
d. Number, duration, and results of samples taken
e. Workers name, social security number and job classification
f. Type of respirator worn by workers
g. Type of material
h. Control Methods
i. Work Practices
j. Training and experience level of workers and supervisors

1.5.9 SUBMITTALS REGARDING DISPOSAL OF LEAD-BASED PAINT

Before Start of Work: Submit the following to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Do not start work until these submittals are approved.

1) Contractor must ascertain that the facility owner is registered with the U.S. EPA as a generator of hazardous waste. If there is no generator status established, the contractor shall assist the owner in obtaining generator identification numbers.

2) Copy of state or local license for waste hauler.

3) U.S. EPA identification number of waste hauler.

4) Name and address of waste disposal facility where hazardous waste materials are to be disposed. Include contact person and telephone number. Copy of state license and permit. Provide disposal facility permits.

5) Copy of EPA "uniform hazardous waste manifest" form, filled out to show Contractor's understanding of role as co-generator.

6) Copy of EPA "notification of hazardous waste activity" form.

7) Copy of forms required by state or local agencies.

8) Sample of disposal bag and labels to be used.

Submit copies of all manifests and disposal site receipts to Owner and Owner's Representative.

1.5.10 SUBMITTALS REGARDING CHEMICAL STRIPPING OF LBP

Before start of work: Submit the following to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Do not start work until these submittals are approved.

1) Chemical Stripping Removers and Neutralizers: Submit product data, use instructions and

recommendations from manufacturer for use intended. Include data substantiating that material complies with requirements.

2) Material Safety Data Sheet: Submit material safety data sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each chemical stripper and neutralizer, include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

3) Off-Site Removal: Submit name, location, materials and methods to be used to remove paint off-site.

1.5.11 SUBMITTALS REGARDING MANUAL STRIPPING OF LEAD BASE PAINT

Before start of work: Submit the following to the Owner and Owner's Representative for review (Minimum of 5-days prior to start of work). Do not start work until these submittals are approved.

1) Manufacturer's Product Data on removal equipment to be used.

2) Description of removal methods to be used for each substrate condition including manufacturer's operating instructions and recommendations for equipment usage

1.6 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.6.1 SCAFFOLDING:

1) Require that a Competent Person supervise the erection, movement, and dismantling of scaffolding in accordance with OSHA 29 CFR 1926.451.

2) During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

3) Clean as necessary debris from non slip surfaces.

4) At the completion of abatement work clean all construction aids within the work area, wrap in one layer of 6 mil polyethylene sheet and seal before removal from the work area.

1.7 Requirements

1.7.1 Competent Person (CP) Responsibilities

a. Verify training meets all federal, State, and local requirements.

b. Review and approve Lead Compliance Plan for conformance to the applicable referenced standards.

c. Continuously inspect PWL or MCL work for conformance with the approved plan.

d. Perform (or oversee performance of) air sampling. Recommend upgrades or downgrades (whichever is appropriate based on exposure) on the use of PPE (respirators included) and engineering controls.

e. Ensure work is performed in strict accordance with specifications at all times.

f. Control work to prevent hazardous exposure to human beings and to the environment at all times.

g. Certify the conditions of the work as called for elsewhere in this specification.

1.7.2 Lead Compliance Plan

Submit a detailed job-specific plan of the work procedures to be used in the disturbance of PWL or MCL. The plan shall include a sketch showing the location, size, and details of lead control areas, critical barriers, physical boundaries, location and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include a description of equipment and materials, work practices, controls and job responsibilities for each activity from which lead is emitted. Include in the plan, eating, drinking, smoking, hygiene facilities and sanitary procedures, interface of trades, sequencing of lead related work, collected waste water and dust containing lead and debris, air sampling, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that lead is not released outside of the lead control area. Include site preparation, cleanup and clearance procedures. Include occupational sampling, training and strategy, sampling and analysis strategy and methodology, frequency of sampling, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan. Include a description of arrangements made among contractors on multicontractor worksites to inform affected employees and to clarify responsibilities to control exposures.

1.7.3 Occupational and Environmental Assessment Data Report

If initial monitoring is necessary, submit occupational sampling results to the Arlington County within three working days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.

In order to reduce the full implementation of 29 CFR 1926.62, the Contractor shall provide documentation. Submit a report that supports the determination to reduce full implementation of the requirements of 29 CFR 1926.62 and supporting the Lead Compliance Plan.

a. The initial monitoring shall represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures per 29 CFR 1926.62. The data shall represent the worker's regular daily exposure to lead for stated work.

b. Submit worker exposure data gathered during the task based trigger operations of 29 CFR 1926.62 with a complete process description. This includes manual demolition, manual scraping, manual sanding, heat gun, power tool cleaning, rivet busting, cleanup of dry expendable abrasives, abrasive blast enclosure removal, abrasive blasting, welding, cutting and torch burning where lead containing coatings are present.

c. The initial assessment shall determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the lead compliance plan per 29 CFR 1926.62.

1.7.4 Medical Examinations

Initial medical surveillance as required by 29 CFR 1926.62 shall be made available to all employees exposed to lead at any time (1 day) above the action level. Full medical surveillance shall be made available to all employees on an annual basis who are or may be exposed to lead in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62. Adequate records shall show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62 and 29 CFR

1926.103. Provide medical surveillance to all personnel exposed to lead as indicated in 29 CFR 1926.62. Maintain complete and accurate medical records of employees for the duration of employment plus 30 years.

1.7.5 Training

Train each employee performing work that disturbs lead, who performs MCL/PWL disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, and State (18 VAC 15-30) and local regulations where appropriate.

1.7.6 Respiratory Protection Program

a. Provide each employee required to wear a respirator a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62.

b. Establish and implement a respiratory protection program as required by ANSI Z88.2, 29 CFR 1926.103, 29 CFR 1926.62, and 29 CFR 1926.55.

1.7.7 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.7.8 Lead Waste Management

The Lead Waste Management Plan shall comply with applicable requirements of federal, State, and local hazardous waste regulations. and address:

a. Identification and classification of wastes associated with the work.

b. Estimated quantities of wastes to be generated and disposed of.
c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish two copies of USEPA, State (in accordance with 16 VAC 25-35) and local hazardous waste permit applications, permits, manifests, and USEPA Identification numbers.

d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.

g. Work plan and schedule for waste containment, removal and disposal. Proper containment of the waste includes using acceptable waste containers (e.g., 55-gallon drums) as well as proper marking/labeling of the containers. Wastes shall be cleaned up and containerized daily.

h. Include any process that may alter or treat waste rendering a hazardous waste non hazardous.

i. Unit cost for hazardous waste disposal according to this plan.

1.7.9 Environmental, Safety and Health Compliance

In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of federal, State, and local authorities regarding lead. Comply with the applicable requirements of the current issue of 29 CFR 1926.62. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirement shall apply. The following local and State laws, ordinances, criteria, rules and regulations regarding removing, handling, storing, transporting, and disposing of lead-contaminated materials apply:
a. 18 VAC 15-30

1.8 Pre-Construction Conference

Along with the CP, meet with the Arlington County to discuss in detail the Lead Waste Management Plan and the Lead Compliance Plan, including procedures and precautions for the work.

1.9 INSTALLATION, GENERAL:

General: Use qualified and licensed tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

1.9.1WATER SERVICE:

5) Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm each to hot and cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority.

6) Maintain hose connections and outlet valves in leak-proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

7) Water supply to hoses shall be shut-off at the end of each work day.

1.9.2 ELECTRICAL SERVICE:

8) 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.

9) Lockout: Lockout all existing power to or through the work area as described below. 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 temporary electrical panel described below.

Lockout power to work area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of contractor's superintendent or owner's designated representative.

Lockout power to circuits running through work area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to contractor, Owner and Owner’s Representative. If circuits cannot be shut down for any reason, label at 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard."

10) Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative. Power may be obtained from adjacent apartments if authorized in writing by the Owner.

11) Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be least exposed to damage from construction operations.

12) Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.

13) Temporary Wiring: in the work area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

14) Number of Branch Circuits: Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:

For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).

a. One outlet in the work area for each 2500 square feet of work area

b. One outlet at each decontamination unit, located in equipment room. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:

c. One in each work area

d. One at clean side of each Decontamination Unit.

1.9.3 TEMPORARY LIGHTING - REGULATED AREAS:

15) General: Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

16) Circuit Protection: Protect each light with a ground fault circuit interrupter (GFCI) of proper size. GFCI can be type that plugs into existing duplex outlets. Insure that outlet is properly grounded before installation of GFCI.

1.9.4 TEMPORARY LIGHTING - CONTAINMENT:

17) Lockout: Lockout all existing power to lighting circuits in work area. Unless specifically noted otherwise existing lighting circuits to the work area are not to be used. All lighting to the Work Area is to be provided from temporary electrical panel described above.

18) Lighting levels: Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:

a. One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide

sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

b. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.

c. Provide lighting in the Decontamination Unit as required to supply adequate illumination which is approved by The Project Manager.

1.9.5 TEMPORARY HEAT

Provide temporary heat where indicated or needed for performance of the Work. If work is during the winter months, provide sufficient heat to avoid freezing of water and waste piping systems in the building.

1.9.6 SANITARY FACILITIES

Use of the Owner's existing toilet facilities, as indicated, will be permitted, so long as these facilities are properly cleaned and maintained in a condition acceptable to the Owner. At Completion, restore these facilities to the condition prevalent at the time of initial use. Written permission from the Owner must be obtained prior to their use. For work sites with no existing toilet facilities, the Contractor shall provide one self-contained chemical toilet unit in the Work Area for each 30 workers.. Facilities shall be maintained throughout the Work. At the end of the job, facilities shall be decontaminated in accordance with these specifications.

1.9.7 FIRE EXTINGUISHERS:

Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate the appropriate class of fire extinguishers where they are most convenient and effective for their intended purpose.

1.9.8 STORAGE FACILITIES:

The Contractor shall provide a temporary construction trailer as a storage area for tools, equipment and supplies. Waste generated during abatement shall be stored in a construction trailer in addition to above.

1.9.9 WORK AREA CONTAINMENT

1.9.9.1 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.

1.10 DEMARCATION OF WORK AREA:

19) Demarcate each Work Area as described below.

20) Provide warning signs at each locked door and at entrance to change room leading to the controlled area reading as follows:

WARNING

LEAD WORK AREA

POISON

NO SMOKING OR EATING

1.11 SCHEDULING:
Scheduling of work shall be coordinated between the Contractor and the Owner.

1.12 NEGATIVE PRESSURE ENCLOSURE - LEAD-BASED PAINT

Negative pressure enclosures are not necessary for most forms of lead hazard control work. No effect on airborne lead levels, either inside or outside the containment area, has been associated with the use of Negative Air Machines (NIOSH, 1993). In addition, no effect on clean-up efficiency was noted. Negative pressure enclosures are appropriate for floor sanding and abrasive blasting; however, neither of these two practices are recommended because alternatives that produce lower levels of lead dust are available.

1.13 WORKER PROTECTION - LEAD-BASED PAINT

1.13.1 Competent Person

Provide on-site, full time competent person (or persons) to ensure that the worker protection program is effective.

1.13.2 Worker Training:

1) Certification: All workers and supervisors are to be trained, certified and accredited as required by federal, state, or local code or regulation.

2) OSHA-Required Training: all workers are to be trained in the dangers inherent in handling lead and breathing or ingesting lead dust and in the proper work procedures and personal and area protective measures prior to the time of initial job assignment and at least annually thereafter. Include but do not limit the topics covered in the course to the following:

a. Content of OSHA lead standard;
b. Possible routes of exposure to lead;
c. Health effects associated with lead exposure;
d. Medical removal protection program;
e. The importance of good personal hygiene;
f. Nature of operations that could result in exposure to lead;
g. The proper use and maintenance of protective clothing and equipment, including respiratory protection;
h. The correct use of engineering controls and implementation of good work practices;
i. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:

i Engineering controls;
ii Work Practices;
iii Respirators;
iv Housekeeping procedures;
v Hygiene facilities;
vi Protective clothing;
vii Decontamination procedures;
viii Emergency procedures;
ix Waste disposal procedures;

j. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1926.103;
k. The specific methods of abatement to be used for the project;

l. Requirements of medical monitoring/surveillance program;
m. Signs and labels;
n. Work practices including hands on or on-the-job training;
o. Personal decontamination procedures;
p. Health and safety considerations;
q. Review of OSHA written compliance program as required by 29 CFR 1926.62;
r. Information on the use of chelating agents and the fact that they should not be routinely used to remove lead from their bodies except under the direction of a licensed physician;
s. The employees' right of access to medical records per 29 CFR 1910.20.

3) EPA-Required Training: Training proposed by EPA for all persons conducting "Lead-Based Paint activities," as defined by EPA, calls for additional training requirements including:

a. For workers:

i A minimum of 32 hours of training, with a minimum of 10 hours devoted to hands-on training; and
ii Instruction in regulatory background, Federal, state and local.

b. For supervisors:

i A minimum of 40 hours training, with a minimum of 8 hours devoted to hands-on training; and
ii Instruction in legal insurance issues;
iii Development of pre-abatement work plans;
iv Employee information and training;
v Project management;
vi Contract specifications;
vii Supervisory techniques;
viii Soil, dust and air testing;
ix Clearance standards and testing;
x Community relations process;
xi Cost estimations; and
xii Record keeping.

4) Commonwealth of Virginia Lead Workers and Supervisors shall have been issued a certification by the Virginia Department of Professional and Occupational Regulation.

1.13.2 Medical Surveillance:

5) Provide full medical examinations for all workers performing lead abatement at first use of negative pressure respirators and for each worker exposed to lead for more than thirty days a year and/or who have blood lead levels over 25 micrograms/deciliter. Provide initial medical examinations for each worker exposed to lead for more than 1 day year. Provide medical examination for any employee who has signs and symptoms of lead poisoning or when a worker becomes pregnant.

6) Medical evaluation to include:

a. A detailed work and medical history.
b. A thorough physical examination.
c. Evaluation of pulmonary status.
d. A blood pressure measurement.
e. A blood sample and analysis that determines blood lead levels, hemoglobin and hematocrit, red cell indices, peripheral smear morphology, blood urea nitrogen, serum creatinine and zinc protoporphyrin.
f. A routine urinalysis.
g. Any other laboratory or other test which is recommended by the examining physician.

7) The medical evaluation must be provided prior to the start of the lead abatement project or assignment requiring the use of negative pressure respirators.

8) Blood testing (blood lead and zinc protoporphyrin) shall be performed at least every 2 months during the first six months of the project and every two months thereafter. An additional blood test shall be performed at the completion of the project and upon termination of employment. The employer must make available the following:

a. Biological monitoring for blood lead level and zinc protoporphyrin level at least every 2 months during the first six months and every two months thereafter.
b. When an employee's blood lead level is at or above 40 □g/dl, biological monitoring at least every two months until two consecutive blood lead level results are below 40 □g/dl.
c. Monthly blood lead level testing during removal period or any employee medically removed due to an elevated blood lead level.
d. When an employee's blood lead level meet the criterion for medical removal (at or above 50 □g/dl), follow-up blood testing within two weeks.

1.13.3 Medical Removal:

Employers must remove employees with lead exposure at or above 30 micrograms/cubic meter of air each time:

9) A periodic and follow-up blood sampling test indicates a blood lead level at or above 50 □g/dl; and

10) A final medical determination indicates a detectable medical condition that increases health risks from lead exposure.

1.13.4 Compliance Program:

The OSHA Lead in Construction Standard requires the employer to establish and implement a written compliance program prior to the commencement of a job. All employees covered under this standard must implement engineering and work practice controls to reduce and maintain employee exposures to lead at or below the Permissible exposure limit (PEL). This program must include:

1. Description of activities that produce lead exposures.
2. Description of the specific means that will be employed to reduce exposure, and where engineering controls are used, the plans and studies used to determine the methods selected.
3. A detailed schedule for implementing the compliance program.
4. A report of the technology considered in meeting the PEL.
5. Air monitoring data that documents the source of the lead exposure.
6. Specific work practice procedures which will be employed on the project.
7. A schedule of administrative controls if these are to be utilized.
8. A description of all arrangements made on multi-employer work sites to inform affected employers about the lead project.

1.13.5 Exposure Assessment

11) The OSHA Lead in Construction Standard requires employers to implement protective measures before exposure assessment has been completed if they are conducting any one of a number of "lead related tasks". These tasks are divided into three different classes. The employer must assume that the worker is exposed to airborne concentrations at least to a certain level of lead (depending on the class) until exposure assessment shows otherwise. When the employer

has objective data demonstrating that the process, operation or activity does not result in employee exposure to lead at or above the action level, the employer may rely upon such data for the initial exposure assessment.

12) Class 1 Tasks - Employer must assume exposure of at least 50 □g/m^3 - 500 □g/m^3 until exposure assessment proves otherwise. Examples include:

a. Manual demolition of structures;
b. Manual scraping;
c. Manual sanding;
d. Using a heat gun;
e. Power tool paint removal with dust collection systems;
f. Spray painting with lead-based paint.

13) Class 2 Tasks - Employers must assume exposure of at least 500 □g/m^3 - 2500 □g/m^3 until exposure assessment proves otherwise. Examples include:

a. Using lead containing mortar;
b. Burning lead;
c. Rivet busting on lead paint;
d. Power tool paint removal without dust collection systems;
e. Clean up activities where dry expendable abrasives are used;
f. Abrasive blasting enclosures movement and removal.

14) Class 3 Tasks - Employer must assume exposure of at least 2,500 □g/m^3 until exposure assessment proves otherwise. Examples include:

a. Abrasive blasting;
b. Cutting;
c. Welding;
d. Torch burning.

15) Prior to the completion of an exposure assessment of the tasks being conducted, the employer should follow the regulations as if the employee was exposed above the PEL. The employee(s) must be notified in writing within 5 days of receipt of the results representing their exposure. Where exposure is above the PEL, employees must be informed of this fact and advised of corrective action to be taken. Monitoring and analysis must have an accuracy (to a confidence level of 95%) of not less than plus or minus 25% for airborne lead levels equal to or greater than 30 □g/m^3.

16) Personal protective equipment for each of the tasks above is to include protective work clothing and equipment, change areas, washing facilities, and training. The only difference in protective equipment for the different classes of tasks is respiratory protection which is to be provided in accordance with Section 1.10 Respiratory Protection.

1.13.6 General:

17) Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of lead concentration in the Work Area.

18) Each time Work Area is entered remove street clothes and put on new disposable coverall or (re-use previous coverall if not overly contaminated or torn), new head cover, and a clean respirator with cartridges appropriate for the abatement work to be performed. Reinforce coverall seams and secure gloves to coveralls with duct tape. Proceed through Change Room, don foot covers and enter Work Area.

1.13.7 Decontamination Procedures:

19) Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:

20) Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a half or full face cartridge type respirator:

a. Still wearing respirators, comply with the following procedure. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid disturbing lead dust. The following procedure is required as a minimum:
i HEPA vacuum heavily contaminated protective work clothing.
ii When exiting Work Area, remove foot covers in work area. Remove disposable coveralls and disposable head covers in the Change Room. Remove protective coveralls by carefully rolling down the garment to minimize exposure to lead dust.
b. Remove respirator and set aside.
c. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.
d. Remove respirator cartridges from facepiece and either seal with duct tape or discard.
e. Carefully wash facepiece of respirator inside and out.
f. Thoroughly wash hands with soap and water.

21) Powered Air Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a PAPR:

a. Still wearing respirators, comply with the following procedure. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid disturbing lead dust. The following procedure is required as a minimum:
i HEPA vacuum heavily contaminated protective work clothing.
ii When exiting Work Area, remove foot covers in work area. Remove disposable coveralls and disposable head covers in the Change Room. Remove protective coveralls by carefully rolling down the garment to minimize exposure to lead dust.
b. Remove respirator, cap filter cartridges, shut blower unit off and set aside.
c. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.
d. Carefully wash facepiece of respirator inside and out. Wet wipe blower unit, hose and battery pack. Do not allow battery pack terminals to get wet. Do not remove respiratory cartridges unless wet. If wet, remove respirator cartridges from blower unit and discard.
e. Thoroughly wash hands with soap and water.

22) Within Work Area:

Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above before entering the Non-Work Areas of the building or exterior.

1.14 RESPIRATORY PROTECTION

1.14.1 Description of Work:

23) Instruct and train each worker involved in lead abatement or lead based paint abatement in proper respiratory use and require that each worker wear a respiratory, properly fitted on the face in the Work Area from the start of any operation which may expose the worker above the permissible exposure limit (PEL) until the Work Area is completely decontaminated. Use

respiratory protection appropriate for the lead levels encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

24) The Owner's Project Monitor will not be performing air monitoring to meet Contractor's OSHA requirements for personnel sampling.

1.14.2 General:

25) Respiratory Protection Program: Comply with ANSI Z88.2 - 1992 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.

26) Require that respiratory protection be used at all times that there is any possibility of airborne lead levels exceeding the permissible exposure level required in OSHA 1926.62

27) 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 disturbance of lead based paint or dust, until the area has met the requirements of Section 3.11.

28) Regardless of Airborne Lead Levels or Surface Dust Contamination: Require that the minimum level of respiratory protection used be half-face air-purifying respirators with high efficiency filters.

29) Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

1.14.3 Fit Testing:

30) Initial Fitting: Fit types of respirator to be worn by each individual. Require that an individual use only those respirators for which training and fit testing has been provided. require that fit testing be repeated semiannually, and at any time a respirator is replaced.

31) On a Monthly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

32) Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit check in accordance with 29 CFR 1926.62, Appendix D.

1.14.4 Permissible Exposure Limit (PEL):

33) Permissible Exposure Limit (PEL-TWA) - 50 micrograms/cubic meter

34) Action Level (TWA) - 30 micrograms/cubic meter

1.12.2 TYPE OF RESPIRATORY PROTECTION REQUIRED:

Provide Respiratory Protection as indicated in paragraph below.

1.14.5 Respiratory Protection Factor:

Table I. -- Respiratory Protection for Lead Aerosols

Airborne concentration of lead or Required respirator {1} condition of use

a. Not in excess of 500 □g/M^3 : 2 mask air purifying respirator with high efficiency filters.{2},{3} 2 mask supplied air respirator operated in demand (negative pressure) mode.

b. Not in excess of 1,250 □g/M^3 : Loose fitting hood or helmet powered air purifying respirator with high efficiency filters.{3} Hood or helmet supplied air respirator operated in a continuous flow mode -- e.g., type CE abrasive blasting respirators operated in a continuous-flow mode.

c. Not in excess of 2,500 □g/M^3 : Full facepiece air purifying respirator with high efficiency filters.{3} Tight fitting powered air purifying respirator with high efficiency filters.{3} Full facepiece supplied air respirator operated in demand mode. 2 mask or full facepiece supplied air respirator operated in a continuous-flow mode. Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode.

d. Not in excess of 50,000 □g/M^3 : 2 mask supplied air respirator operated in pressure demand or other positive-pressure mode.

e. Not in excess of 100,000 □g/M^3 : Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode -- e.g., type CE abrasive blasting respirators operated in a positive-pressure mode.

f. Greater than 100,000 □g/M^3 or unknown : Full facepiece SCBA operated in concentration pressure demand or other positive- pressure mode

{1} Respirators specified for higher concentrations can be used at lower concentrations of lead.

{2} Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

{3} A high efficiency particulate filter (HEPA) means a filter that is 99.97 percent efficient against particles of 0.3 micron size or larger.

1.14.6 Air Purifying Respirators:

2) Negative pressure: Half or full face mask: Supply a sufficient quantity of respirator HEPA filters approved for lead, so that workers can change filters as necessary. Require that respirators be wet-rinsed, and filters discarded or covered with duct tape, each time a worker leaves the Work Area. Store respirators and filters at the job site in the changing room and protect totally from exposure to lead prior to their use. Respirator cartridges must be replaced whenever a worker experiences increased breathing resistance.

3) Powered air purifying: Half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for lead so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during personal decontamination. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

2.1.1 SUMMARY

This section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

4) The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

5) Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

2.1.2 SUBMITTALS

6) Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Owner's Representative. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.

7) Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.

8) Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:

a. Related Specification Section number.
b. Generic name used in Contract Documents.
c. Proprietary name, model number and similar designations.
d. Manufacturer's name and address.
e. Supplier's name and address.
f. Installer's name and address.
g. Projected delivery date, or time span of delivery period.

9) Initial Submittal: Before start of work submit 3 copies of an initial product list schedule (Minimum of 5-days prior to start of work). Provide a written explanation for omissions of data, and for known variations from Contract requirements.

10) Owner’s Representative's Action: The Owner’s Representative will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Owner's Representative's response will include a list of unacceptable product selections, containing a brief explanation of reasons for this action.

2.1.3 QUALITY ASSURANCE

11) Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

12) Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

2.1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

13) Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

14) Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.

15) Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

16) Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

17) Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

18) Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

19) Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

20) Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

2.1.4 PRODUCT SELECTION

21) General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

22) Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:

23) Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.

24) Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted. Where products or manufacturers are specified by name, accompanied by the term "or equal," or" approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

25) Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

26) Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

27) Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

2.2 EQUIPMENT

2.2.1 Respirators

Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust, fume and mist. Respirators shall comply with the requirements of 29 CFR 1926.62.

2.2.2 Special Protective Clothing

Furnish personnel who will be exposed to lead-contaminated dust with proper disposable protective whole body clothing, head covering, gloves, eye, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

2.2.3 Rental Equipment Notification

If rental equipment is to be used during PWL or MCL handling and disposal, notify the rental agency in writing concerning the intended use of the equipment.

2.2.4 Vacuum Filters

UL 586 labeled HEPA filters.

2.2.5 Equipment for Government Personnel

Furnish the Arlington County with two complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the lead removal work within the lead controlled area. Personal protective equipment shall include disposable whole body covering, including appropriate foot, head, eye, and hand protection. PPE shall remain the property of the Contractor. The Government will provide respiratory protection for the Contracting Officer.

2.2.6 Scaffolding:

28) Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. 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 all scaffolding shall comply with all applicable OSHA provisions.
29) Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.
30) Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.2.7 Water Service:

31) Temporary Water Service Connection: All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

32) Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

33) Hot Water: may be secured from the building hot water system, provided backflow protection is installed at point of connection as described in this section under Temporary Water Service Connection, and if authorized in writing by the County. For buildings with no hot water, the Contractor shall provide an UL rated 40-gallon electric water heater.

2.2.8 Electrical Service:
34) General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service. Provide equipment which is compatible with existing electrical characteristics and available power. If existing power is either incompatible or inadequate for performance of the Work, provide auxiliary generators(s) located outside of the building.

35) Temporary Power: Provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.

36) Voltage Differences: Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.

37) Ground Fault Protection: Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all 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.

2.2.9 Electrical Equipment:
38) Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

39) Lamps and Light Fixtures: Provide sealed quartz halogen construction lights, general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work. Protect lamps with guard cages where fixtures are exposed to breakage by construction operations. Provide lighting with a secure base to insure that they will not be knocked over. Keep lights away from combustible materials.

40) Temporary heat:
a. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. Use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

41) Temporary Cooling:
a. Cooling Units: Provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.2.10 Self-contained Toilets:
If toilets are not approved for use or available at the site, provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

2..2.11 First Aid:

First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

2.2.12 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 extinguishers of NFPA recommended types for the exposures in each case.

2.2.13 Products regarding Work Area Containment
42) Duct Tape: Provide 2" (51 mm) width tape with an adhesive which is formulated to aggressively stick to sheet polyethylene.

43) Wet Detergent Wash: Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by the manufacturer's instructions.

44) Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

45) Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mils thick.

2.2.14 Products regarding Workers Protection
46) 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 clothing waste at the end of each day.

47) Shoe Covers: Provide disposable shoe covers and require that they be worn by all workers in the Work Area. Shoe covers must be replaced each time a worker leaves the work area. Shoe covers are disposed as clothing waste in the equipment section of the Change Room.

48) 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 lead dust. Dispose of boots with clothing waste at the end of the work, or bag and take to next project. Boots that are non-porous may be decontaminated and removed from work area.

49) Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 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.

50) Goggles and Face Shields: Provide eye and face protection (goggles or face shields) as required by OSHA for all workers involved in scraping, spraying, stripping or any other activity which may potentially cause eye or face injury. Thoroughly clean and decontaminate goggles or face shields before removing them from Work Area at the end of the project.

51) Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Chemical resistant gloves must be provided when using chemical strippers to remove lead based paint. Gloves must be secured to the coveralls using duct tape to protect arms and hands from the chemical strippers. Do not remove gloves from Work Area. Dispose of as clothing waste at the end of the work.

2.2.15 Additional Protective Equipment:

Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Owner's Representative, Project Monitor, and other authorized representatives who may inspect the job site.

2.2.16 Shower Facilities

Provide shower facilities to be used by all workers when lead air concentrations exceed 30 □g/m^3 or surface lead dust concentrations exceed 2,000 □g/FT^2.

52) Provide pre-fabricated or site-built shower facilities. Supply hot and cold water to shower head which can be controlled from inside shower. Filter all shower water or dispose of in accordance with Section 3.13 - Disposal of Waste Materials.

53) Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.2.17 Washing Facilities

54) Provide washing facilities to be used by all workers when exiting the work area.

a. Provide temporary sink with hot and cold water supply. Filter all water or dispose of in accordance with Section 3.13 - Disposal of Waste Materials.

b. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.2.18 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.

2.2.19 Products regarding Respiratory Protection

Air Purifying Respirators

55) Respirator Bodies: Provide half face or full face type respirators. 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.

56) Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.2 (1992). In addition, a chemical cartridge section (organic vapor/acid gas) may be added, if required, for solvents, strippers, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

57) Non-permitted respirators: Do not use single use, disposable or quarter face respirators.

2.2.20 Products regarding Disposal of Lead based Materials

Disposal: Provide 6 mil thick leak-tight polyethylene bags or wrap components in 6 mil polyethylene sheeting and seal with duct tape. For wrapped materials provide stick-on labels. Comply with applicable hazardous waste labeling requirements.

2.2.21 Products regarding Chemical stripping of LPB

58) Chemical Stripping Removers: Shall contain no methylene chloride products. Chemical removers shall be compatible with, and not harmful to the substrate that they are applied to. The contractor shall comply with the manufacturer's recommendations for use of the product supplied.

59) Chemical Stripping Agent Neutralizer: Provide chemical agent neutralizer in accordance with manufacturer's recommendations. Neutralizers shall be compatible with and not harmful to the

substrate. Neutralizers shall also be compatible with the stripping agent used.

60) Wet Detergent Wash: Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP) or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

2.2.22 Products regarding Manual stripping of Lead base Paint Tools and Equipment

1. Portable power sanders with HEPA vacuum attachment.
2. Needle gun with HEPA vacuum attachment
3. Vacuum blasting equipment with HEPA vacuum attachment
4. Flameless heat guns and heat grid with maximum temperature setting of 700 degrees Fahrenheit.
5. Paint scrapers
6. Wet/dry sand paper

2.2.23 Products for Painting

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

Devoe and Raynolds Co. (Devoe).

Fuller O'Brien (Fuller).

The Glidden Company (Glidden).

Benjamin Moore and Co. (Moore).

PPG Industries, Pittsburgh Paints (PPG).
Pratt and Lambert (P & L).

The Sherwin-Williams Company (S-W).

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Protection

3.1.1.1 Notification

a. Notify the Contracting Officer 20 days prior to the start of any lead work.

3.1.1.2 Lead Control Area

a. Physical Boundary - Provide physical boundaries around the lead control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that lead will not escape outside of the lead control area.

b. Warning Signs - Provide warning signs at approaches to lead control 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.

3.1.1.3 Furnishings

Arlington County will remove furniture and equipment from the building before lead work begins.

3.1.1.4 Heating, Ventilating and Air Conditioning (HVAC) Systems

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas. Seal intake and exhaust vents in the lead control area with 6 mil plastic sheet and tape. Seal seams in HVAC components that pass through the lead control area.

3.1.1.5 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62.

3.1.1.6 Eye Wash Station

Where eyes may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes shall be provided within the work area.

3.1.1.7 Mechanical Ventilation System

a. To the extent feasible, use local exhaust ventilation or other collection systems, approved by the CP. Local exhaust ventilation systems shall be evaluated and maintained in accordance with 29 CFR 1926.62.

b. Vent local exhaust outside the building and away from building ventilation intakes or ensure system is connected to HEPA filters.

c. Use locally exhausted, power actuated tools or manual hand tools.

3.1.1.8 Personnel Protection

Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking or application of cosmetics is not permitted in the lead control area. No one will be permitted in the lead control area unless they have been appropriately trained and provided with protective equipment.

3.2 ERECTION

3.2.1 Lead Control Area Requirements

Establish a lead control area by completely establishing barriers and physical boundaries around the area or structure where PWL or MCL removal operations will be performed.

3.3 APPLICATION

3.3.1 Lead Work

Perform lead work in accordance with approved Lead Compliance Plan. Use procedures and equipment required to limit occupational exposure and environmental contamination with lead when the work is performed in accordance with 29 CFR 1926.62 or 40 CFR 745, and as specified herein. Dispose of all PWL or MCL and associated waste in compliance with federal, State, and local requirements.

3.3.2 Paint with Lead or Material Containing Lead Removal

Manual or power sanding or grinding of lead surfaces or materials is not permitted unless tools are equipped with HEPA attachments or wet methods. Provide methodology for removing lead in the Lead Compliance Plan. Select lead removal processes to minimize contamination of work areas outside the control area with lead-contaminated dust or other lead-contaminated debris or waste

and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead. Describe this removal process in the Lead Compliance Plan.

3.3.2.1 Paint with Lead or Material Containing Lead - Indoor Removal

Perform manual, mechanical removal and thermal cutting in the lead control areas using enclosures, barriers or containments and powered locally exhausted tools. Collect residue for disposal in accordance with federal, State, and local requirements.

3.3.2.2 Paint with Lead or Material Containing Lead - Outdoor Removal

Perform outdoor removal as indicated in federal, State, and local regulations and in the Lead Compliance Plan. The worksite preparation (barriers or containments) shall be job dependent and presented in the Lead Compliance Plan.

3.3.3 Personnel Exiting Procedures

Whenever personnel exit the lead-controlled area, they shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn in the control area:
a. Vacuum all clothing before entering the contaminated change room.

b. Remove protective clothing in the contaminated change room, and place them in an approved impermeable disposal bag.

c. Wash hands and face at the site, don appropriate disposable or uncontaminated reusable clothing, move to an appropriate shower facility, shower.

d. Change to clean clothes prior to leaving the clean clothes storage area.

3.4 FIELD QUALITY CONTROL

3.4.1 Tests

3.4.1.1 Air and Wipe Sampling

Conduct sampling for lead in accordance with 29 CFR 1926.62 and as specified herein. Air and wipe sampling shall be directed or performed by the CP.

a. The CP shall be on the job site directing the air and wipe sampling and inspecting the PWL or MCL removal work to ensure that the requirements of the contract have been satisfied during the entire PWL or MCL operation.

b. Collect personal air samples on employees who are anticipated to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least twenty-five percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.

c. Submit results of air samples, signed by the CP, within 72 hours after the air samples are taken.

d. Conduct area air sampling daily, on each shift in which lead-based paint removal operations are performed, in areas immediately adjacent to the lead control area. Sufficient area monitoring shall be conducted to ensure unprotected personnel are not exposed at or above 30 micrograms per cubic meter of air. If 30 micrograms per cubic meter of air is reached or exceeded, stop work, correct the conditions(s) causing the increased levels. Notify the Contracting Officer immediately. Determine if condition(s) require any further change in work methods. Removal work shall resume only after the CP and the Contracting Officer give approval.

3.4.2 WORK ACTIVITIES:

Workers shall comply with the procedures specified in Sections 1.9 – Worker Protection and 1.10 – Respiratory Protection. Perform abatement activities using procedures specified in other sections, as applicable.

3.4.3 DEBRIS AND SURFACES CLEANUP DURING ABATEMENT:

Debris shall be collected by HEPA vacuuming all surfaces or by wet misting the area with wet wash solution. Sweep debris while wet and place in 6 mil disposal bags. Seal with duct tape and move to designated waste storage area. Wet wipe the exterior surfaces of all disposal bags or items wrapped in 6 mil polyethylene sheeting prior to exiting work area. At end of work shift remove any lead contaminants from the polyethylene sheeting either by using a HEPA vacuum or by spraying with wet wash solution, collect contaminant debris with wet paper towels, place in disposal bag while still wet, and clean surface of plastic sheet with wet paper towels. If work day is complete or if next work area is in another secured area: Follow decontamination procedures in Section 1.9 - Worker Protection.

3.4.4 WORK ACTIVITY COMPLETION:

Prior to entering the Change Room from the Work Area, each worker shall be HEPA vacuumed thoroughly by another worker. The first worker shall then enter Change Room. To move tools from the Work Area, while standing on plastic drop sheet, one worker thoroughly HEPA vacuums the tools or equipment and passes them to a worker in the Change Room.

3.5 CHEMICAL STRIPPING OF LEAD-BASED PAINT

3.5.1 Summary of Work:

Work of this section includes removal and disposal of lead-based paint by chemical methods on site.

3.5.2 General:

Prohibited lead hazard removal methods.

61) Open flame burning;
62) Chemical stripping with methylene chloride based paint strippers;
63) Uncontained abrasive blasting;
64) Uncontained power washing;
65) Dry sanding or scraping;
66) Power sanding without HEPA attachment;
67) Sanding of wood after chemical stripping.

3.5.3 Chemical Lead-based Paint Removal on-site:

68) Chemical Stripping Agents and neutralizers shall be applied in accordance with the recommendations of the manufacturer.

69) Caustic Stripper Neutralization: Caustic strippers shall be neutralized in accordance with manufacturer's recommendations. Provide workers with proper protective equipment, including but not limited to; protective clothing (non-paper), chemically resistant gloves, eye protection and respiratory protection with filters selected for the hazards to be encountered.

70) Remove Stripper Sludge: Place lead containing stripper sludge in corrosion-proof containers and place in a secure waste storage area. The surface from which lead-based paint has been removed shall be thoroughly scrubbed, while still damp from the stripper, in accordance with the

manufacturer's recommendation. Monitor pH of the neutralizing solution to ensure it has not become neutralized in the process. If the pH exceeds 6.5, or the solution becomes overly soiled, change solution. Solution may be classified as hazardous waste. Place in 55 gallon drums and test in accordance with Section 3.13- Disposal of Waste Materials - Lead-Based Paint. The surface shall be tested with litmus paper following this process. If the litmus paper turns pink, the acid has effectively neutralized the alkali. If litmus turns blue continue scrubbing until satisfactory results are achieved.

71) Final Cleaning Of Surfaces: Prepare wet detergent wash. Workers must wear eye shields and chemically resistant gloves when working with this solution. Thoroughly scrub stripped surface to remove as much remaining lead residue as possible. The wash solution may also be hazardous waste, treat in accordance with Section 3.13- Disposal of Waste Materials - Lead-Based Paint . Following wet detergent wash, perform a final wash with clear water to remove any traces of detergent. Sponges used in the clean-up process may not be reused and must be placed in double 4 mil or single 6 mil plastic bags, which will be sealed, labeled, and placed in the secure waste storage area. Surfaces must be allowed to dry thoroughly before repainting. A grayish film indicates that significant lead residues remain and the cleaning process must be repeated. If a white powder appears, the surface is Alkaline and requires further neutralization.

72) Priming/sealing: After complete drying, prepare the substrate and seal all surfaces where lead-based paint was removed with a primer or encapsulant which is compatible with the substrate and the paint or coating intended for application later.

73) Complete Project Decontamination Requirements of Section 3.10 - PROJECT DECONTAMINATION.

3.5.4 Chemical Lead-based Paint removal off site:

Carefully remove lead-based painted substrates and wrap with 6 mil polyethylene sheeting and label with "CAUTION-LEAD DUST". Do not deliver stripped components back to job site until visual inspection requirements of Section 3.10 - PROJECT DECONTAMINATION are met.

3.6 MECHANICAL REMOVAL OF LEAD BASED PAINT

3.6.1 SUMMARY OF WORK:
Work of this section includes removal and disposal of lead-based paint by mechanical methods on site.
3.6.2 GENERAL:
Prohibited lead hazard removal methods:
74) Open flame burning;
75) Chemical stripping with methylene chloride based paint strippers;
76) Uncontained abrasive blasting;
77) Uncontained power washing;
78) Dry sanding or scraping;
79) Power sanding without HEPA attachment;
80) Sanding of wood after chemical stripping.

3.6.3 EQUIPMENT AND METHODS
81) GENERAL: To minimize damage to substrate, obtain County approval of Mechanical removal method prior to use.

82) Portable Power Sanders: Maintain HEPA vacuum attachment in operation during sanding operations. Sanding surface shall be held flat to surface. Conduct sanding operations on flat surfaces only. Do not allow sanding pad surface to extend beyond surface being sanded.

83) Needle Gun: Maintain HEPA vacuum attachment in operation during removal operation. Select proper shroud to match the configuration of the surface being treated.

84) Vacuum Blasting: conduct abrasive removal of exterior surfaces only using machine blasting equipment mounted with a fully contained, coaxially mounted local exhaust hood with HEPA-Vacuuming capability and using either recyclable or dry ice (co_2) abrasive media.

a. Conduct blasting on flat surfaces or surfaces compatible with available blast heads as provided by equipment manufacturer.

b. Maintain blast head in contact with surface to provide maximum containment of dust, debris, etc. created by blasting operation.

85) Flameless Heat Gun/Heat Grid: Provide proper respiratory and worker protection prior to use. Soften paint surface with heat gun/heat grid. Use putty knife to scrape paint from surface. Collect sludge and properly containerize in accordance with Section 3.13 Disposal of Waste Materials - Lead-Based Paint .

86) Paint Scrapers: Use wet scraping methods only. Lightly mist surface to be scraped. Properly containerize waste in accordance with Section 3.13 - Disposal of Waste Materials - Lead-Based Paint.

87) Wet/Dry Sand Paper: Use wet sanding methods only. Do not allow removed paint to accumulate. Properly containerize waste in accordance with Section 3.13 - Disposal of Waste Materials - Lead-Based Paint.

3.6.4 CLEANING PROCEDURES; ROOMS AND HARD SURFACES

88) HEPA Vacuum: All surfaces in work area. Start at point farthest from main entrance and finish vacuuming back at that point. Begin at top of each room and work down. Sequence to avoid passing through rooms already cleaned.

89) Perform wet detergent wash of all surfaces. Begin at point farthest from main entrance, work from top to bottom. Take care not to damage existing finishes and surfaces. Change cleaning mixture in accordance with manufacturer's recommendations or minimum after each room. Filter all waste water or dispose of in accordance with Section 3.13.

90) Wiping Work Area

a. The work area should be cleaned using a three container method. Fill two buckets with clean water and place them in the work area with the container of cleaning solution.

b. Pour cleaning solution onto a clean cloth. Wring excess solution into one of the buckets without placing the cloth into the bucket. Wipe the work surface with the cloth. Add more cleaning solution to the cloth and continue wiping until the entire surface area has been covered. Discard all cloths used in this procedure in the disposal bag.

c. Dip and wring out a clean cloth in the first rinse bucket. Wipe off the work area. Rinse the cloth in the first bucket again and wring out thoroughly. Rinse the cloth in the second bucket and wring out thoroughly again.

d. Continue to clean the work surface with the cloth and rinse using this procedure until the entire work surface has been cleaned. Wipe off all tools to remove any dust.

e. NOTE: The rinse water in the bucket should be changed periodically. The frequency will vary depending on the level of contamination.

91) Mopping Work Area

a. Collect any visible debris using wet cloths before mopping the area. Pour the cleaning solution into the mop bucket. fill two rinse buckets with clean water. Place the mop into the cleaning solution. Wring excess solution into the mop bucket. mop small sections of the work area. Place the mop into the cleaning solution and wring thoroughly between sections. After the entire surface has been mopped thoroughly, rinse the mop head. Completely rinse the surface by placing the mop in the first bucket, wringing it out thoroughly, placing it in the second bucket, wringing thoroughly and then mopping the surface. Continue this cycle until all areas have been rinsed.

b. NOTE: The water in the two containers should be changed periodically. The frequency will depend on the level of contamination.

92) Mist Critical barrier sheeting and remove.

93) HEPA Vacuum area previously covered by critical barrier sheeting followed by wet detergent wash.

94) Perform clear water wash of all surfaces in same manner as wet detergent wash.

95) After all surfaces in work area are allowed to dry, complete final HEPA vacuuming of all surfaces in same manner as first HEPA vacuuming.

96) After Final Cleaning Perform a Complete Visual Inspection of the entire work area including: all surfaces, ceiling, walls, floor, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. If any debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the certification, by Project Monitor.

97) Painting of substrates: Perform painting/sealing of substrates at this time. Perform final clearance sampling in accordance with Section 3.11 Project Monitoring and Clearance Sampling.

3.6.5 FINAL CLEARANCE SAMPLING:
Wipe Sampling By Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, wipe samples will be obtained and analyzed in accordance with the procedure set forth in Section 3.11 Project Monitoring and Clearance Sampling.

98) If Release Criteria are not met, repeat HEPA vacuuming, wet wash, HEPA vacuuming procedure until satisfactory clearance results are obtained.

99) If Release Criteria are met, remove work area isolation. Remove all equipment, materials from the site.

3.7 ABATEMENT OF LEAD CONTAMINATED SOIL

3.7.1 SUMMARY OF WORK:
This section describes methods for soil abatement to be used to achieve clearance levels for soil contaminated as a result of exterior abatement and for soil abatement when it is identified initially as part of the overall project.

The following identifies and summarizes the acceptable methods of abatement, depending on the lead concentration and contact with children:

100) Bare soil with child contact, lead concentration 400 PPM up to 1,999 PPM.
a. Install sod over bare soil
b. Install ground cover and/or shrubbery

101) Bare soil, with or without child contact, lead concentration - 2,000 PPM up to 4,999 PPM.
a. Install sod over bare soil
b. Install ground cover and/or shrubbery.
c. Remove soil to a depth of three (3) inches.

102) Bare soil, lead concentration greater than 5,000 PPM
a. Remove soil to a depth of three (3) inches.
b. Install asphalt paving
c. Install concrete paving

3.7.2 SOIL REMOVAL
103) Use hand held spray equipment to dampen soil. Do not over saturate and cause water to run-off to adjacent areas.

104) Remove soil using shovels or vacuum loading equipment starting at the point farthest from load out area.

105) Load soil into containers, trucks or dumpsters. Do not track through areas where soil has been removed. Cover containers, trucks or dumpsters prior to transport. Dispose of soil in accordance with Section 3.13 - Disposal of Waste Materials - Lead-Based Paint .

106) At the end of each shift or during winds which may disturb and spread soil contamination, cover contaminated sections of soil with 6 mil polyethylene sheeting.

107) Wash tools, and equipment which came in contact with contaminated soil. Collect and filter wash water. Dispose of in accordance with Section 3.13 - Disposal of Waste Materials - Lead-Based Paint.

3.8 SURFACE PREPARATION-PAINT STABILIZATION

3.8.1 SUMMARY OF WORK:
Work of this section includes the stabilization of lead-based painted surfaces to be encapsulated or painted.

3.8.2 PAINT STABILIZATION
108) SUBSTRATE REPAIRS
Prior to stabilizing lead-based paint, correct substrate surface defects. Remove loose, unsound or deteriorated substrates. Place in 6 mil polyethylene disposal bag and dispose of in accordance with Section 3.13 - Disposal of Waste Materials - Lead-Based Paint.

109) PAINT REMOVAL
a. Wet Scraping: remove all loose, flaking and deteriorated paint by wet scraping. Continually mist surface with water during scraping.

b. Wet Sanding: prepare finish surface by wet sanding. Feather edges lightly. Keep surface wet while sanding.

110) SURFACE CLEANING
a. Dust and chips: HEPA vacuum surface after drying.

b. Chemically treat surface if necessary for good paint adhesion. Follow manufacturer's printed

instructions for system used. Limit the use of volatile products. Do not use sanding to create adhesion for application of new paint.

c. Test surface for pH. Place LITMUS paper on wet surface. Surface pH should be between 6-8. Re-rinse surfaces that do not meet pH with clear water or weak acid solution.

d. Remove oils, waxes and mold. Remove mold with a 1% to 10% bleach solution. Provide appropriate eye, skin and respiratory protection during mold decontamination procedures. Remove waxes with ammonia and water. Degrease surfaces with suitable cleaner. Rinse thoroughly following cleaning.

3.8.3 CLEARANCE CRITERIA:

111) Wipe Sampling Clearance: Post abatement and abatement clearance sampling will be conducted by the Owner's Representative. The sampling will be in accordance with VA DPOR Title 54.1, Chapter 5. The clearance levels for lead in dust on floors, window sills, window wells, and exterior surfaces are established in the HUD Guidelines (VA DPOR Title 54.1, 5). Decontamination is complete when every sample is at or below the following levels. If clearance levels are not satisfactory, the decontamination is incomplete and recleaning per Section 3.8 - Project Decontamination and resampling are required at no additional cost to the Owner. In addition to meeting the clearance levels in this section, there must be no deteriorated paint or visible dust present in the area prior to the area being cleared for re-occupancy.

Floors:	100 micrograms per square foot.
Window Sills:	500 micrograms per square foot.
Window Troughs:	800 micrograms per square foot.
Exterior:	800 micrograms per square foot

a. For interior abatement, the clearance wipe samples will be collected as follows:

i Three samples, one from one window sill (stool), one window trough (well), one floor from each area in every unit.

ii One sample from outside the containment area, within 10 feet of the containment.

b. For exterior abatement, the clearance wipe samples will be collected as follows:

i At least one sample from an adjacent horizontal surface in the outdoor living area, including but not limited to, a patio, deck, porch, or stoop.

112) Soil Sampling Clearance: The Owner's Representative will collect composite soil samples consisting of at least four (4) sub-samples. Abatement is complete when the following clearance criteria are met. If clearance levels are not satisfactory, the Abatement is incomplete and additional abatement per Section 3.4 and resampling are required at no additional cost to the owner.

a. Comparison of pre- and post-abatement soil lead concentrations do not show a statistically significant increase at the 95% confidence limit.

b. Less than 400 parts per million (ppm) lead in soil concentration.

3.9 CERTIFICATE OF READINESS FOR VISUAL INSPECTION:

The following certification is to be completed by the Contractor and certified by the Project Monitor.

Submit completed certificate with application for final payment Final payment will not be made until this certification is executed.
1.12.3 Following is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Project Monitor. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

3.10 CLEANING AND DISPOSAL

3.10.1 Cleanup

Maintain surfaces of the lead control area free of accumulations of dust and debris. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use pressurized air to clean up the area. At the end of each shift and when the lead operation has been completed, clean the controlled area of visible contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area and wet wiping the area as indicated by the Lead Compliance Plan. Reclean areas showing dust or debris. After visible dust and debris is removed, wet wipe and HEPA vacuum all surfaces in the controlled area. If adjacent areas become contaminated at any time during the work, clean, visually inspect, and then wipe sample all contaminated areas. The CP shall then certify in writing that the area has been cleaned of lead contamination before clearance testing.

3.10.1.1 Clearance Certification

The CP shall certify in writing that air samples collected outside the lead control area during paint removal operations are less than 30 micrograms per cubic meter of air; the respiratory protection used for the employees was adequate; the work procedures were performed in accordance with 29 CFR 1926.62; and that there were no visible accumulations of material and dust containing lead left in the work site. Do not remove the lead control area or roped off boundary and warning signs prior to the Contracting Officer's acknowledgement of receipt of the CP certification.

3.10.2 Disposal

a. All material, whether hazardous or non-hazardous shall be disposed in accordance with all laws and provisions and all federal, State or local regulations. Ensure all waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) will dictate disposal requirements.

b. Contractor is responsible for segregation of waste. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing that may produce airborne concentrations of lead particles. Label the containers in accordance with 29 CFR 1926.62 and 40 CFR 261.

c. Dispose of lead-contaminated material classified as hazardous waste at an EPA or State approved hazardous waste treatment, storage, or disposal facility off Government property.

d. Store waste materials in U.S. Department of Transportation (49 CFR 178) approved 55 gallon drums. Properly label each drum to identify the type of waste (49 CFR 172) and the date the drum was filled. For hazardous waste, the collection drum requires marking/labeling in accordance with 40 CFR 262 during the accumulation/collection timeframe. Arlingotn County or an authorized representative will assign an area for interim storage of waste-containing drums. Do not store hazardous waste drums in interim storage longer than 90 calendar days from the date affixed to each drum.

e. 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.

3.10.2.1 Disposal Documentation

Submit written evidence to demonstrate the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA, State or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, signed and dated by the initial transporter in accordance with 40 CFR 262. Contractor shall provide a certificate that the waste was accepted by the disposal facility.

3.10.2.2 Payment for Hazardous Waste

Payment for disposal of hazardous and non-hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials or non-hazardous waste delivered is returned and a copy is furnished to Arlington County.

-- End of Section --

CERTIFICATION OF READINESS FOR VISUAL INSPECTION

The Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, counters, ledges, walls, ceiling and floor, sheet plastic, etc.) and has found no dust, debris or residue.

by: (Signature Date

(Print Name)

PROJECT MONITOR CERTIFICATIONS

The Project Monitor hereby certified that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's certification above is a true and honest one.

by: (Signature Date

(Print Name)

(Print Title)

WORK AREA

Location:

Room:

Abatement Performed: