

## SECTION 028200

### ASBESTOS REMEDIATION

#### PART 1 - GENERAL

##### 1.1 GENERAL PROVISIONS

- A. Attention is directed to the GENERAL REQUIREMENTS AND COVENANTS -- DIVISION 1, and the SPECIAL PROVISIONS- DIVISIONS IIA and IIB, which are hereby made a part of this Specification Section.
- B. Examine all Drawing and all Sections of the Specifications for requirements and provisions affecting the Work of this Section.
- C. Within this section, the entities listed shall be designated as follows.
  - 1. The City of Fitchburg (Fitchburg) shall be referred to as the USER AGENCY
  - 2. Saam Architecture, shall be referred to as the ARCHITECT
  - 3. The designated industrial hygienist/consultant, Environmental Health and Engineering, Inc. (EH&E) shall be referred to as the CONSULTANT
  - 4. The Asbestos Remediation Sub-Contractor to be selected for the removal and/or remediation of asbestos-containing materials (ACMs) and asbestos materials shall be referred to as the REMEDIATION CONTRACTOR

##### 1.2 DESCRIPTION OF WORK

- A. This plan includes specifications for the removal of asbestos materials located at the Crocker Elementary School (the Building Space) at the campus located at 200 Bigelow Road, Fitchburg, Massachusetts. The REMEDIATION CONTRACTOR shall furnish all labor, material, supervision, construction tools, transport vehicles and equipment necessary to perform the following work:
  - 1. Pre-bid inspection. The potential Bidders are required to visit the Space prior to bidding in order to determine the actual amounts of asbestos materials and asbestos contaminated materials, and potential PCB materials to be removed, as well as staging and protection requirements. The bidders must review all elements of this specification prior to submitting their final bid. The REMEDIATION CONTRACTOR must return bids on the FORM FOR GENERAL BID included as Attachment A.
  - 2. This document serves as the basis of information pertaining to the locations and amounts of materials to be remediated at the Site. If any discrepancies exist between the site specifications and the site conditions, the REMEDIATION CONTRACTOR must notify, the ARCHITECT, and the CONSULTANT prior to signing the contract. Additional compensation to correct a difficulty or difference from conditions implied or indicated in this document that would have been apparent during the site visit will not be approved.

3. The REMEDIATION CONTRACTOR shall be required to submit a Site-Specific Work Plan conforming to the requirements in this specification for removing or clearing the asbestos materials in the locations outlined in this section.
4. The removal of all asbestos materials will include the following (see Appendix B, Tables B.1 to B.3), but not limited to:
  - a. Known ACM:
    - 9" x 9" Non-friable asbestos-containing floor tile and mastic, approximately 37,000 square feet (SF)
    - Friable pipe insulation and fittings/elbows, approximately 2,500 linear feet (LF) and 500 each
    - Boilers' interior components, 2 each
    - Duct work flex connectors, approximately 330 LF
  - b. Presumed ACM:
    - Weather caulking and expansion joints, approximately 3,000 LF
    - 12" x 12" Non-friable asbestos-containing floor tile and mastic, approximately 30,000 SF
    - Vapor barrier and mastic in building façade, approximately 10,000 SF
    - Window caulking and glazing compound, approximately 300 each
    - Roofing materials, approximately 40,000 SF
    - Ceramic tile fields—grouts and mortar beds, approximately 1,000 SF
    - Ceiling tile and associated glue daubs, approximately 10,000 SF
    - Cement board, approximately 100 SF
  - c. Presence Unconfirmed Presumed ACM (materials that may be present but could not be confirmed).
  - d. Note: Full NESHAPs compliant assessment to be completed by Consultant Spring of 2023.
5. The removal of asbestos materials shall be performed concurrently with the removal of PCB materials as indicated in Section 028433 of this Specification. Concrete floor coatings shall be removed to the point where remaining concrete is suitable for crushing and reuse onsite.
6. Alternate work plans deviating from this specification, must be approved by the CONSULTANT prior to starting the work.
7. Documentation of worker training, respiratory protection and medical examination.
8. Provide access, support and protection to all authorized visitors and inspectors.
9. Filing of and/or obtaining all required notifications, permits, work plans and payment of all required associated costs and fees, including any applicable royalty or patent payments for use of any technology on the project.
10. Work area preparation and work practices.

11. Proper removal, packaging, transport and disposal of all asbestos materials as specified herein. Note that vehicles transporting bulk-loaded demolition debris containing a reportable quantity (greater than 1 pound) of asbestos shall be properly placarded in accordance with U.S. Department of Transportation (DOT) regulations. All drivers shall be appropriately trained and licensed to transport this material.
  12. Isolation of the Work Area for the duration of the work so as to prevent asbestos-contaminated dust or debris from passing beyond the isolated area.
- B. In addition to the specific methods in this document, it is the REMEDIATION CONTRACTOR's responsibility to determine the most efficient method to legally perform this Work.
- C. The REMEDIATION CONTRACTOR shall perform all work in accordance with these specifications, the U.S. Environmental Protection Agency (EPA) and the U.S. Occupational Safety and Health Administration (OSHA) regulations, National Institute for Occupational Safety and Health (NIOSH) recommendations, Massachusetts Department of Environmental Protection (MADEP) and Massachusetts Department of Labor Standards (MADLS) regulations, local statutes, local ordinances, local codes and any other applicable federal, state and local government regulations and guidelines.
- D. The contractor is responsible for worker and site safety, including storing and securing all equipment, materials, and waste.
- E. Related Sections
1. Section 01 11 00 (Summary of Work)
  2. Section 01 22 00 (Unit Prices)
  3. Section 01 33 00 (Submittal Requirements)
  4. Section 01 42 00 (References)
  5. Section 01 50 00 (Temporary Facilities and Controls)
  6. Section 01 60 00 (Product Requirements)
  7. Section 01 77 00 (Contract Closeout)
  8. Section 02 41 00 (Demolition)
  9. Section 02 84 33 (Removal and Disposal of Polychlorinated Biphenyls)
  10. Section 04 21 00 (Clay Unit Masonry)
  11. Section 06 10 00 (Rough Carpentry)
  12. Section 07 62 00 (Sheet Metal Flashing and Trim)
  13. Section 07 90 00 (Joint Protection)
  14. Section 15 40 00 (Plumbing)

### 1.3 PERMITS

- A. The REMEDIATION CONTRACTOR shall be responsible for obtaining all permits, and/or submittal of all notifications necessary to execute work conducted at the Crocker Elementary School Building project in, Fitchburg, Massachusetts. The cost for securing all necessary permits shall be included in the REMEDIATION CONTRACTOR's bid. The REMEDIATION CONTRACTOR shall be responsible for adhering to all applicable federal, state, and local rules and regulations including but not limited to, except where

more stringent requirements are specified:

- The U.S. Environmental Protection Agency (EPA)
- The U.S. Occupational Safety and Health Administration (OSHA)
- The Massachusetts Department of Environmental Protection (MADEP)
- The Massachusetts Department of Labor Standards (MADLS)
- The Fitchburg Fire Department
- The City of Fitchburg

#### 1.4 SCHEDULING

- A. The CONTRACTOR and the ARCHITECT shall develop an abatement schedule for each phase of work prior to commencement. The ARCHITECT may choose to alter the work sequence as they see fit.
- B. The CONTRACTOR shall update the schedule and submit any schedule changes for review by the ARCHITECT at the weekly construction meetings.

#### 1.5 AUTHORITY TO STOP WORK

- A. The ARCHITECT and the USER AGENCY has the authority to stop the work at any time it is determined either personally or through the services of the CONSULTANT that conditions are not within the specifications and applicable regulations. The stoppage of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the ARCHITECT, USER AGENCY, and CONSULTANT. Standby time required to resolve violations shall be at REMEDIATION CONTRACTOR's expense, and any fines, etc., for hazardous conditions or non-compliance will be at the REMEDIATION CONTRACTOR's expense and will not be grounds for change orders or time extension.
- B. Stop work orders may be issued for, but not limited to the following:
  - 1. Not conducting the work in compliance with this and related specifications.
  - 2. Breaks in barriers.
  - 3. Inadequate work area control or isolation
  - 4. Leakage to other areas.
  - 5. Fiber concentrations outside the work area, which exceed 0.010 f/cc (0.010 f/cc above established background levels) for any one phase contrast microscopy (PCM) sample.
  - 6. If the REMEDIATION CONTRACTOR disregards laws or regulations of any regulatory or governing body having jurisdiction.
  - 7. If the REMEDIATION CONTRACTOR's work presents a risk to the building, to building occupants, to the general public or to the environment as determined by the USER AGENCY, the ARCHITECT, or the CONSULTANT.
- C. The absence of a stop work order by the USER AGENCY, ARCHITECT, or the CONSULTANT shall not in any way be construed as an approval or acceptance of the REMEDIATION CONTRACTOR's work.

#### 1.6 CONTRACTOR QUALIFICATIONS

- A. The ARCHITECT shall approve the proposed REMEDIATION CONTRACTOR and will be based upon submission by the REMEDIATION CONTRACTOR of the following:
  - 1. Insurance and bonding as stated in the Contract Documents.
  - 2. Licensing by the MADLS as an Asbestos Abatement Contractor.
  - 3. Names and locations of at least three asbestos abatement projects similar in scope and size to this project completed by the proposed REMEDIATION CONTRACTOR. Provide the name and phone number of a contact person for each referenced asbestos abatement project.
  - 4. History of violations and fines issued to the abatement contractor by any regulatory or governing agency.

#### 1.7 PERSONNEL QUALIFICATIONS

- A. All personnel of the REMEDIATION CONTRACTOR or any approved Sub-CONTRACTOR involved with this work shall meet the following minimum qualifications:
  - 1. Asbestos worker medical examination within the past year in accordance with OSHA 1926.1101 with a physician's written opinion that the worker has no condition that would preclude him/her from working with asbestos or wearing a respirator.
  - 2. Current certification by the MADLS as an Asbestos Supervisor or Asbestos Worker that falls into the time frame of their training certificate or refresher training certificate.
  - 3. There shall be a sufficient number of trained and qualified workers, foremen and superintendents to accomplish the work within the required schedule. No untrained or fully qualified and pre-approved person shall be employed to speed up completion of the abatement work.

#### 1.8 BUILDING INSPECTION

- A. The REMEDIATION CONTRACTOR must inspect the site and ascertain the locations and amounts of asbestos materials to be removed. If discrepancies exist between these specifications and/or site conditions, the contractor must notify the USER AGENCY's project manager prior to signing the contract. Additional compensation to correct a difficulty or difference from conditions implied or indicated in this specification that would have been apparent during the site visit will not be approved.

#### 1.9 DISPOSAL

- A. Disposal of all asbestos material shall be in strict accordance with applicable state and federal regulations and sent to licensed facilities that receive and retain asbestos waste. All asbestos materials removed from this site will be kept separate from other waste streams the contractor may handle. Copies of all bill of lading, waste shipment records, and any other documentation must be submitted as proof of proper disposal of asbestos waste.

## 1.10 DEFINITIONS

- A. All terms not defined herein shall have the meaning given in the applicable publications and regulations.
1. Abatement—Procedures to control fiber release from asbestos materials including encapsulation, enclosure, and removal.
  2. Air Monitoring—The process of measuring the fiber content of a specific volume of air in a stated period of time.
  3. Asbestos—The name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure, are incombustible and are separated into fibers. Asbestos includes chrysotile, crocidolite, amosite, anthophyllite, and actinolite.
  4. Asbestos-containing material (ACM)—Any material containing more than one percent by weight of asbestos of any type or mixture of types. According to MADEP an ACM is any material that contains  $\geq$  one percent asbestos.
  5. Asbestos Materials—ACMs and materials that contain less than 1 percent (trace) asbestos.
  6. Asbestos Wastes—All building materials and debris, insulation, disposable clothing and protective equipment, plastic sheeting and tape, exhaust systems or vacuum filters, or any abatement equipment that is or has been contaminated with asbestos and cannot be completely cleaned by vacuuming or by washing.
  7. Authorized Visitors—Any visitor authorized by the USER AGENCY, the ARCHITECT or any representative of a regulatory agency or other agency having jurisdiction over the project.
  8. Barrier—Any surface that seals off the work area to inhibit the movement of fibers.
  9. Critical Barrier—A solid asbestos impermeable partition erected to constitute a work area closure; the outer perimeter of an asbestos work area, usually erected across corridors or other open spaces to complete containment.
  10. Friable ACM—Material that contains one percent or more asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
  11. HEPA Filter—Equipment with a high efficiency particulate air (HEPA) filter, greater than 99.97 percent efficiency by 0.3-micron DOP (dioctyl phthalate) test and complying with American National Standards Institute (ANSI) Z9.2 (1979).
  12. Non-friable Asbestos Material—Material that contains asbestos and that cannot be crumbled, pulverized, or reduced to powder by hand pressure when dry.
  13. Removal—All herein specified procedures necessary to strip all ACM and asbestos wastes from designated areas and to dispose of these materials at an acceptable site.

14. Regulated Area—A work area established to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limits. Only authorized individuals shall enter regulated areas.
15. Respirator—A device designed to protect the wearer from the inhalation of harmful atmospheres.
16. Visible Emissions—Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

#### 1.11 EMERGENCY PRECAUTIONS

- A. The REMEDIATION CONTRACTOR shall develop and submit a written fire protection plan, which specifically addresses fire protection during work. This plan shall be submitted to ARCHITECT for review prior to the start of work.
- B. The REMEDIATION CONTRACTOR shall establish and maintain emergency and fire exits from the work areas. The REMEDIATION CONTRACTOR shall submit a written emergency evacuation plan to the City of Fitchburg Fire Department and to the ARCHITECT for review if applicable.
- C. Local emergency medical personnel, both ambulance crews and hospital emergency room staff, shall be notified prior to commencement of work as to the possibility of having to handle contaminated, injured workers, and shall be advised on safe decontamination. The REMEDIATION CONTRACTOR shall submit copies of such notifications to the ARCHITECT.
- D. The REMEDIATION CONTRACTOR shall have a written Health and Safety Plan. When an injury occurs, the REMEDIATION CONTRACTOR shall stop work and implement fiber reduction techniques (e.g., water spraying) until the injured person has been removed from the work area.
- E. Before the REMEDIATION CONTRACTOR starts any removal of the asbestos material, the REMEDIATION CONTRACTOR shall notify the local police and fire departments as to the proper personal protective equipment required by persons providing emergency response services. The REMEDIATION CONTRACTOR shall make every effort to help these agencies form plans of action should their personnel need to enter contaminated areas.

#### 1.12 SUBMITTALS

- A. The REMEDIATION CONTRACTOR shall submit each item in this Article according to the Conditions of the Contract, for information only, unless otherwise indicated.
- B. All submittals shall be submitted to the ARCHITECT, USER AGENCY, and the CONSULTANT prior to the start of work.

- C. Abatement Plans shall include, at a minimum, the following:
1. Layout of project execution components showing the configuration of the containment and work area.
  2. A description of Security System, warning signs and labels for waste containers.
  3. Access routes to controlled asbestos work areas.
  4. Copy of notification to police department, fire department and local ambulance and hospital.
  5. A description of wetting agents and low-pressure wetting system.
  6. Description of enclosures and work area controls to be used.
  7. Fire Protection Plan, Safety Plan, and Emergency Evacuation Plan.
  8. Submit manufacturer's certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2 and to requirements as listed in this Specification.
  9. Safety Data Sheets (SDSs) for all products used on the Project.
  10. A detailed plan for the movement of material, personnel, and waste in and out of work areas, building, and the site.
  11. Standard Operating Procedure showing how workers, visitors, and employees will be protected from exposure and how spaces outside the work areas will be protected from contamination until completion of the work.
  12. Written site-specific Health and Safety Plan to be developed and implemented for abatement work performed at the site. These procedures must ensure maximum protection of workers, visitors, and employees from all health and safety issues and situations specific for this worksite that may or may not be foreseen. These procedures will include, but are not limited to, emergency escape procedures, fall protection, electrical hazards, etc.
- D. To comply with applicable regulations, notify appropriate regulatory agencies of abatement activities.
1. Provide the required written notification at least 10 working days before the start of the asbestos abatement activity to the MADEP and MADLS.
  2. Provide required written notification by mail to local authorities as required.
  3. Obtain and process all applicable forms and permits required.
- E. Respiratory Protection System(s) including literature describing sample respirators, hoses and certificate with system literature for the air supply system from manufacturer stating that air supply system meets specifications on quality, quantity and escape time. These submittals are required only if supplied air respiratory protection is used.

- F. Certification of compliance with OSHA requirements including but not limited to medical surveillance, record keeping and personal monitoring.
- G. Documentation of certification in accordance with Title 454 Code of Massachusetts Regulations Part 18.00 (454 CMR 28) for each employee.
- H. Final landfill destination(s) and copies of transporter and Landfill permits as well as Waste Shipment Records
- I. Copies of all Notifications made to Massachusetts Asbestos Program, Local Board of Health, Local Fire Department, and any other agencies, as required.
- J. Application for and obtaining of waivers and exemptions, which may be required by various regulatory agencies.

#### 1.13 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in text by basic designation only. The list provided below is not intended to be all inclusive of all regulations prevailing over the work.
- B. U.S. Environmental Protection Agency (EPA):
  - 1. Regulations for Asbestos (40 CFR 61).
  - 2. Guidance for Controlling Asbestos-Containing Materials in Buildings.
  - 3. A Guide to Respiratory Protection for the Asbestos Abatement Industry.
- C. U.S. Occupational Safety and Health Administration (OSHA):
  - 1. Asbestos Construction Standard 29 CFR 1926.1101.
  - 2. Asbestos General Industry Standard 29 CFR 1910.1001
  - 3. Respiratory Protection, 29 CFR 1910.134
- D. National Institute for Occupational Safety and Health (NIOSH):
  - 1. "Respiratory Protection A Guide for the Employee."
- E. American National Standards Institute (ANSI):
  - 1. Z86.1-1973—Commodity Specification for Air.
  - 2. Z9.2—HEPA Filter Specifications.
  - 3. Z88.2-1980—Respiratory Protective Equipment
- F. Massachusetts Department of Labor Standards (MADLS)
  - 1. The Removal, Containment, Maintenance, or Encapsulation of Asbestos (454 CMR 28)
- G. Massachusetts Department of Environmental Protection (MADEP)
  - 1. Amendments to Regulations 310 CMR 7.00, 7.09, 7.15 to Control Airborne Asbestos Emissions for the Control of Air Pollution.

2. MADEP Policy Statement Concerning Non-Friable Asbestos Containing Materials, Policy #BWP-96-012.

H. U.S. Department of Transportation (DOT)

1. 49 CFR 171 – 180, Hazardous Materials Regulations

## PART 2 - MATERIALS AND EQUIPMENT

### 2.1 GENERAL

- A. All materials or equipment delivered to the site shall be unloaded, temporarily stored, and transferred to the work area in a manner which shall not interfere with operation of others at the site, or employee's access and safety, and must be authorized by the USER AGENCY or ARCHITECT.
- B. Damaged or deteriorated materials shall not be used and shall be promptly removed from the premises. Materials that become contaminated by asbestos materials shall be thoroughly cleaned, or sealed in plastic bags or sheeting, labeled, and legally disposed of in an approved, secure landfill.
- C. All materials and equipment shall comply, at a minimum, with all sections of this specification, applicable federal, state, and local codes, and industry standards.

### 2.2 ABATEMENT EQUIPMENT AND SUPPLIES

- A. HEPA-Filtered Fans—As warranted, air inside each interior work area shall be exhausted through a HEPA filter that is 99.97% efficient at 0.3 microns in particle size. Commercially manufactured HEPA-filtered exhaust units, with specification plates intact, must be provided for each work area to attain, at a minimum, four air volume changes per hour and an inward flow velocity of clean air into each work area at least 100 feet per minute. The HEPA filter shall be preceded by replaceable prefilters and the unit must be designed so that it cannot be operated unless all filters are in place. The units must also be designed with a gauge to indicate the pressure drop across filters, and lights and audible alarms to indicate that the filters are properly installed, functional, and when they must be changed. Flexible ducting shall be required to allow exhausting to the exterior of the building. No exhaust with any other type of particulate cleaning system (such as electrostatic precipitators) shall be allowed without prior written approval.
- B. Polyethylene sheeting—only 6-mil, fire-retardant, polyethylene sheeting. Written authorization for use of an alternate product that meets Boston Fire Department requirements for flame retardancy must be issued.
- C. Ground-fault circuit interrupters—Underwriters Laboratories Inc. (UL) listed ground fault circuit interrupters (GFCIs) will be used for all electrical connections.
- D. Vacuum cleaners—all vacuum cleaners (UL listed) shall be emptied prior to being brought on-site and shall have a HEPA filter as the final air filter that is 99.97% efficient at 0.3 microns in aerodynamic particle size.

- E. Wetting Agent or Surfactant—shall be 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether, or equivalent, mixed in the proportion of one ounce of surfactant per five gallons of water. The material shall be odorless, nontoxic, nonirritating, and noncarcinogenic. It shall be applied as a mist using a low-pressure sprayer recommended by the surfactant manufacturer.
- F. Tape and Glue—shall be capable of sealing plastic joints and attaching plastic to finished surfaces. The bonding strength and resulting seal integrity shall not be affected by mist or water, wetting or encapsulating agent, or any other materials to be used in the work area.
- G. Warning Signs and Labels—shall comply with all federal, state, and local codes and regulations.
- H. Waste Containers and Transportation—shall be suitable for loading, temporary storage, transport, and unloading of contaminated waste without risk of ripping, rupture, or exposure to persons, or emissions to the atmosphere. Transportation methods shall comply with the provisions of 40 CFR 61, Subpart M, and with any and all state and local hazardous or special waste regulations for temporary storage, transport, and disposal if such codes are enforced in states in which the waste will be stored, transported, or disposed.
- I. Truck Liners—shall be polyethylene or equivalent with a thickness of at least 10 mil for all applications.
- J. Scaffolding—Scaffolding, lifts, ladders, and aerial equipment as required to accomplish the specified work, shall meet all applicable safety regulations.
- K. Transportation Equipment—as required, shall be suitable for loading, temporary storage, transport, and unloading of contaminated waste without exposure to persons or property. The equipment shall be secured at all times and access restricted to unauthorized personnel.

## 2.3 SAFETY SUPPLIES AND EQUIPMENT

- A. Respirator Types—Provide all workers with a full or half facepiece respirator which is approved by NIOSH/Mine Safety and Health Administration (MSHA) for protection against airborne asbestos and meets the requirements of the OSHA Asbestos Standard. Minimum respiratory protection required shall be compliant with current OSHA and MADOS regulations including 453 CMR 6.00 and 29 CFR 1926.1101
- B. Protective Clothing—Provide all workers and approved visitors with disposable coveralls, head and foot coverings, gloves, eye protection (i.e., safety glasses) and half-face respiratory protection including replacement HEPA filter cartridges.

## PART 3 – EXECUTION

### 3.1 COORDINATION AND SCHEDULING

- A. The REMEDIATION CONTRACTOR shall coordinate all work with the USER AGENCY, and the CONSULTANT.
- B. The REMEDIATION CONTRACTOR shall submit to the ARCHITECT, prior to contract performance, a schedule of work including sequencing of asbestos removal areas and demolition.
- C. The REMEDIATION CONTRACTOR shall give not less than a two-week advance notice of proposed time for shutting down or interrupting any utility, service or facility that may affect normal facility operations.
- D. The REMEDIATION CONTRACTOR shall make all required notifications and obtain all permits including, but not limited to MADEP, MADLS, all associated costs and fees shall be paid for by the REMEDIATION CONTRACTOR and included in the base bid price.

### 3.2 RESPIRATORY PROTECTION SYSTEMS

- A. Provide all workers and authorized visitors with NIOSH approved respirators compliant with OSHA regulations and a sufficient quantity of disposable filters, so that workers can change filters during the workday.
- B. Workers shall always wear a respirator properly fitted on the face while within the work area. Any worker failing to wear his/her respirator or in any way performing his/her work in an unsafe manner shall be restricted from working at this site.
- C. Instruct and train workers in proper respirator use.

### 3.3 PROTECTIVE CLOTHING

- A. Provide to all workers, supervisors, superintendents and authorized visitors and inspectors protective disposable clothing consisting of full body coveralls, head covers, gloves and 18-inch high boot type covers or reusable footwear as required by job conditions and safety regulations.
- B. Provide eye protection and hard hats as required by job conditions and safety regulations.
- C. Reusable footwear, hard hats and eye protection devices shall be properly stored while not in use or until the end of the remediation work.
- D. All disposable protective clothing shall be discarded and disposed of as asbestos waste every time the wearer exits the work area.
- E. Provide all personnel throughout the abatement process with the specified protective clothing and gear. Ensure that all personnel entering and leaving the workspace use the following procedures:
  - 1. Entering from the outside: Don protective clothing and wear clean protective gear.
  - 2. Exiting from the Work Area: Dispose of all protective clothing into labeled plastic bags for asbestos waste.

3. Post written procedures in the workplace and train all personnel on the procedures for the evacuation of the injured and the handling of potential fires. Provide aid to a seriously injured worker without delay for decontamination. Make provisions to minimize exposure of rescue workers and to minimize spreading of contamination during evacuations and fire procedures. Exceptions to normal, routine-exiting procedures shall be made for emergencies such as, but not limited to, serious personal injury and fires.
  4. The REMEDIATION CONTRACTOR shall instruct all employees and workers in the proper care of their personally issued respiratory equipment, including daily maintenance, sanitizing procedures, etc.
- F. All respiratory equipment shall be inspected by the REMEDIATION CONTRACTOR's personnel at the beginning of each work period, including breaks and lunch periods.

### 3.4 GENERAL PREPARATION PROCEDURES

- A. Upon receipt of a Notice to Proceed, the REMEDIATION CONTRACTOR shall meet at the Site with the USER AGENCY, the ARCHITECT, and the CONSULTANT to reach agreement on:
1. Scope and manner of work performance and all schedules.
  2. Contractor and supporting vendor vehicle access and parking.
  3. Access to the work areas, including approved doors, stairways, and corridors.
  4. Location of water supply and wastewater drain connection points, if available.
  5. Determination of all equipment and other items to be removed from the work areas, and the location of temporary storage space, if applicable.
  6. Any other logistical factors to minimize interference with public safety and health, and other contractor activities.
- B. For the removal of interior ACM, the REMEDIATION CONTRACTOR shall prepare each work area according to the following general sequence of procedures to ensure that proper fiber/dust containment and protection systems are installed before any work, which could generate airborne asbestos fibers/dust.
1. Erect barricades, post access restriction signs, seal all openings into the work area airtight (including doors, chases, shafts, and other vertical penetrations), and erect or install Decontamination Facilities and HEPA exhaust systems.
  2. Install polyethylene sheeting in the work zone. Perform pre-cleaning/surface decontamination where appropriate prior to installing protective polyethylene sheeting. Cover all non-moveable objects under the removal work area using 6-mil poly-sheeting.

3. Protect and isolate the work area for the duration of work by completely sealing off all openings and fixtures (including, but not limited to, floors, walls, heating and ventilation ducts, doorways, corridors, windows, and lighting) using polyethylene sheeting sealed securely in place. The work area shall be sealed airtight to the extent possible.
  4. The REMEDIATION CONTRACTOR shall provide local exhaust ventilation in the work area to maintain a negative pressure in the work area relative to the adjacent non-work areas. The exhaust units must be equipped with a High Efficiency Particulate Air (HEPA) filter capable of retaining 99.97% of particulate matter greater than or equal to 0.3 microns in diameter. This filter must comply with ANSI Z9.2 standards. The fan for each unit should be sized to draw a desired airflow through the filters in the unit at a specified pressure drop. The unit should have an air handling capacity of 1,000 cubic feet per minute (cfm) to 2,000 cfm (under "clean" filter conditions). Negative air filtration systems in the work area shall maintain a minimum negative pressure of 0.02" of water column. If negative air pressure of 0.02" water column is lost, work shall be halted until the required negative air pressure is restored. The HEPA-Filtered exhaust shall be routed outdoors.
  5. Worker decontamination area: The REMEDIATION CONTRACTOR shall establish a personnel decontamination area (PDA) and ensure that the PDA is the only location where workers egress the work area. The PDA shall be contiguous to the work area to prevent inadvertent cross contamination of asbestos into adjacent areas. The PDA shall be sized in a manner to sufficiently allow for personnel access, and the decontamination and removal of contaminated coveralls and/or clothing and containerization of contaminated personal protective equipment (PPE). The REMEDIATION CONTRACTOR is responsible for determining the exact size and configuration of the PDA. At a minimum, the PDA shall consist of two layers of six-mil polyethylene sheeting placed on the floor. PDA shall be kept clean for the duration of the work, maintaining it free of asbestos materials, contaminated equipment, PPE, etc.
- C. For the removal of interior materials containing less than one percent asbestos, the REMEDIATION CONTRACTOR shall isolate the work area in a manner that is sufficient to control dust generated during work including:
1. Six-mil polyethylene sheeting shall be placed under the work area. The poly-sheeting shall be taped to the side walls under the work, extending a minimum of 10 feet beyond the area of removal.
  2. Cover all non-moveable objects under the removal work area using 6-mil poly-sheeting.
  3. The removal work area shall be demarcated using appropriate signage and barrier/caution tape and be placed at the entrance to each removal work.
  4. Operate HEPA-Filtered Fans in the work area. If feasible as determined by the USER AGENT or CONSULTANT these shall be routed outdoors.
  5. Worker decontamination area: The REMEDIATION CONTRACTOR shall establish a personnel decontamination area (PDA) and ensure that the PDA is the only location where workers egress the work area. The PDA shall be contiguous to the work area to prevent inadvertent cross contamination of asbestos into adjacent areas. The

PDA shall be sized in a manner to sufficiently allow for personnel access, and the decontamination and removal of contaminated coveralls and/or clothing and containerization of contaminated personal protective equipment (PPE). The REMEDIATION CONTRACTOR is responsible for determining the exact size and configuration of the PDA. At a minimum, the PDA shall consist of two layers of six-mil polyethylene sheeting placed on the floor. PDA shall be kept clean for the duration of the work, maintaining it free of asbestos materials, contaminated equipment, PPE, etc.

- D. For the removal of exterior non-friable ACMs, the REMEDIATION CONTRACTOR shall isolate the work area in a manner that is sufficient to control dust generated during removal of ACMs including:
1. Six-mil polyethylene sheeting shall be placed under the work area. The poly-sheeting shall be taped to the side walls under the work, extending a minimum of 10 feet beyond the area of removal.
  2. The removal work area shall be demarcated using appropriate signage and barrier/caution tape, to be placed at a minimum of 10 feet beyond the removal work. The space shall be large enough to perform work, protected adjacent occupants and environment, and maintain a space sufficient for equipment staging, and worker and equipment decontamination.
  3. Worker decontamination area: The REMEDIATION CONTRACTOR shall establish a PDA and ensure that the PDA is the only location where workers can egress the work area. The PDA shall be contiguous to the work area. The PDA shall be sized in a manner to sufficiently allow for personnel access, and the decontamination and removal of contaminated coveralls and/or clothing and containerization of contaminated PPE. The REMEDIATION CONTRACTOR is responsible for determining the exact size and configuration of the PDA. At a minimum, the PDA shall consist of two layers of six-mil polyethylene sheeting placed on the ground. PDA shall be kept clean for the duration of the work, maintaining it free of asbestos materials, contaminated equipment, PPE, etc.
  4. The contractor shall provide a waste decontamination area (WDA) consisting of a clean area, and a wash area for the removal of waste, equipment and contaminated material from the work area. The WDA shall be contiguous to work area. Clean debris and residue in the WDA daily. All surfaces in the WDA shall be cleaned after each shift. The WDA shall consist of the following:
    - a. Wash Area: Provide a wash area for cleaning of bagged or containerized waste materials. Construct the floor; wash area using a drop cloth of two layers of 6-mil fire retardant poly so that any loose water or liquid is contained to the wash area location. Locate the wash area so that packaged materials, after being wiped clean, can be passed to the designated clean area. Each area shall be appropriately marked or indicated so it is clear to workers and project personnel of the designated use.
    - b. Clean Area: Provide a designated clean/holding area for clean and sealed containerize waste. The clean area shall be located so as to provide straight-line

access from the wash area and shall be constructed using a drop cloth of two layers of 6-mil fire retardant poly.

5. Supplemental environmental engineering controls (i.e., wind barriers or local exhaust ventilation) may be required based on the removal means and methods instituted by the REMEDIATION CONTRACTOR to complete the work.
- D. Prepare each work area according to the following general sequence of procedures to ensure that proper fiber containment and protection systems are installed before any work, which could generate airborne asbestos fibers and ensure that all utilities leading to the work area have been locked-out and tagged-out by a licensed electrician.
1. Establish work area, PDA, and WDA as required.
  2. Perform pre-cleaning/surface decontamination where appropriate prior to installing protective poly sheeting.
  3. Isolate and seal airtight with plastic and tape all HVAC return system openings in the interior work areas.
  4. Obtain formal approval from the CONSULTANT of all preparation work and containment areas before commencing asbestos material removal. The CONSULTANT shall be given at least 48 hours notification of the intent to start removal work in any work area.
- E. Isolation of Electrical Systems
1. The scope of the electrical isolation work covers the protection of electrical equipment that is in areas where asbestos removal work is performed and where the water used for wetting the material before or during removal could possibly contact the equipment and create a hazard.
  2. Provide portable electrical panels with ground fault protection for all non-battery power requirements. These panels shall have sufficient capacity for all HEPA exhausts and vacuums, power tools, portable lighting, and all other electrical needs.
  3. Provide a licensed electrician to perform all electrical work including, but not limited to connecting, energizing, and de-energizing the electrical panels and to be on call to handle any electrical problem, which may arise during the course of the work.
  4. All materials and workmanship shall comply with the latest editions of applicable codes, standards, and specifications.
  5. Once a work area becomes isolated by containment, only weatherproof lighting and washable tools and equipment will be allowed in the area.
- 3.5 DECONTAMINATION FACILITIES
- A. Description—Any person or thing exiting from the work areas must pass through the PDA or WDA. All containers passing through the WDA must be cleaned thoroughly

before exiting the facility. All asbestos materials shall be containerized and disposed of as an asbestos-containing waste material.

- B. Construction—PDAs and WDAs shall be constructed and maintained as specified in applicable regulations and shall be located in areas approved by the USER AGENCY ARCHITECT, and CONSULTANT.
- C. All personnel shall enter the PDA and put on clean protective clothing and respirators; then put on any additional equipment and enter the work area. All personnel exiting the work area shall enter the PDA, remove and store or dispose of all contaminated clothing and PPE.
- D. Cleaning—the PDA and WDA shall be cleaned using a HEPA-filtered vacuum at least once every shift or more frequently, if needed, to prevent dust accumulation.
- E. Prohibitions—Smoking, drinking, or eating shall not be permitted in any work area, WDA, or PDA.

### 3.6 APPROVAL OF CONTAINMENT AREAS

- A. After the work area has been prepared as specified, the REMEDIATION CONTRACTOR shall request an inspection by the CONSULTANT. No removal or disturbance of asbestos materials is to occur until the CONSULTANT, has inspected and approved each separate prepared work area.
- B. Any deficiencies in the preparation work shall be promptly corrected in a manner satisfactory to the CONSULTANT.

### 3.7 ASBESTOS REMOVAL PROCEDURES

- A. Removal of asbestos materials shall be performed by a Massachusetts licensed asbestos abatement contractor. All asbestos materials shall be removed by workers with the appropriate training utilizing wet methods, all applicable engineering controls and workers will wear appropriate PPE. This work will be conducted in accordance with all applicable regulations.
- B. If required by the work, the removal of all interior materials containing asbestos shall be performed and contained within a regulated work area or full negative containment to prevent unauthorized personnel from accessing the work area. Removal shall be performed using a minimum of a two-person crew. Materials shall be misted with amended water and carefully removed to prevent dropping and creation of airborne dust. Material shall be immediately placed into appropriately labeled asbestos waste bags for disposal. All materials containing less than 1% asbestos shall be containerized and disposed of as an ACWM, per MADEP requirements. Following removal, all surfaces where material was removed shall be cleaned by wet wiping followed by thorough drying then HEPA vacuumed. All plastic floor and surface covering materials shall also be handled as an asbestos contaminated waste. All floor surfaces shall be wet wiped and/or HEPA vacuumed following removal. A visual inspection of the work area will be performed by the CONSULTANT following work. The work will not be considered complete until the work area passes final visual inspection.

- C. The removal of exterior non-friable ACM must be performed within a regulated area, with protective ground covering, and the material wetted with amended water and carefully lowered (not dropped) to prevent the release of ACM and creation of airborne dust. If the CONSULTANT or the ARCHITECT determines that the CONTRACTOR fails to prevent the release of asbestos dust or renders the non-friable ACM friable, then the non-friable asbestos must be removed under the conditions of a full negative pressure enclosure. During the work, access shall be limited to asbestos associated personnel and/or those trained in accordance with OSHA 29 CFR 1926.1101(k)(9)(iv)(C). All personnel entering the work area shall wear respiratory protection in accordance with 29 CFR 1926.1101(h)(1).

### 3.8 WORK AREA CLEANUP, DECONTAMINATION AND WASTE DISPOSAL

#### A. General Requirements

1. After asbestos materials have been removed, remove all asbestos waste and perform a final cleanup and decontamination of each work area. Final cleaning shall be performed only after all asbestos waste is packaged and removed, but before reinstalling or demolishing any equipment, or dismantling any barrier, decontamination area, or protective coverings. Cleaning shall be subject to the approval of the CONSULTANT based on a final visual inspection.

#### B. Cleaning Methods and Approvals

1. All waste containers and removal equipment shall be thoroughly cleaned with a HEPA-filtered vacuum, decontaminated with the use of amended water, and then promptly removed from the work area.
2. All surfaces in the work area shall be thoroughly wiped/washed clean and, after drying, thoroughly decontaminated with a HEPA-filtered vacuuming device.
3. After cleaning, the CONSULTANT shall inspect the work area. To facilitate scheduling of inspections, the REMEDIATION CONTRACTOR shall notify The CONSULTANT of the anticipated completion of the final work area cleaning at least 48 hours in advance.
4. If any visible waste, dust, debris, or materials specified for removal are observed within the work area during the inspection, the REMEDIATION CONTRACTOR shall perform additional cleanup and decontamination.
5. Once waste containers and equipment have been properly packaged and removed from the work area as contaminated waste, package and properly dispose of all remaining plastic sheeting, disassemble and remove the decontamination area and HEPA exhausts, and perform a final HEPA vacuuming and/or wet cleaning of all surfaces.

#### C. Waste Disposal

1. General Requirements—All asbestos wastes must be handled, packaged, stored, transported, and disposed of as specified in this subsection, and in compliance with all federal, state, and local regulations and codes.

2. Waste Labeling—If waste containers are not already so preprinted, warning labels having waterproof print and permanent adhesive shall be affixed to the lid and/or sides of the containers, whether or not these containers are further packaged. Warning labels shall be conspicuous and legible, and conform to the latest OSHA, EPA and DOT labeling requirements.
3. Waste Packaging—All asbestos waste shall be thoroughly wetted when packaged and the REMEDIATION CONTRACTOR shall inspect each bag, drum or container to observe that water condensation is visible. Insufficiently wetted bags shall be opened, rewetted, and resealed inside a negative pressure enclosure. When a waste bag is full, it shall be securely sealed with tape, and then placed in the designated temporary storage area inside of the work area.

D. Waste Container Removal and Disposal Documentation

1. The REMEDIATION CONTRACTOR shall coordinate the removal of asbestos materials from the building with the General Contractor, the USER AGENCY, and the CONSULTANT. Asbestos waste shall be appropriately containerized and transported using dust tight chutes, crane, wheeled carts, or carried by hand. The REMEDIATION CONTRACTOR is responsible for ensuring that no building damage will occur during waste handling and transport.
2. If is stored onsite, it will be in a designated storage area and be located in a secured, weatherproof enclosure.
3. It is the responsibility of the REMEDIATION CONTRACTOR to determine current waste handling, transportation, and disposal regulations for the work site and for each waste disposal landfill. The USER AGENCY/USER AGENCY must approve the landfill destination. The REMEDIATION CONTRACTOR must comply fully with these documents and all DOT and EPA requirements.
4. The REMEDIATION CONTRACTOR, transporter and landfill shall document generation, transport and disposal of the asbestos waste at the designated landfill by completing a Waste Shipment Record and forwarding the original along with the Bill of Lading to the USER AGENCY and the USER AGENCY within the 30-day time period specified by EPA.
5. Measure the volume of each container or load of asbestos waste removed from the Site. The REMEDIATION CONTRACTOR shall provide the CONSULTANT with an estimated total volume of each load/container of waste and provide an accurate count of each type of container for each load BEFORE the waste is removed from the Site.
6. Provide legal transportation of the asbestos waste to the disposal landfill, and complete or obtain all required licenses, manifests, dump slips, or other forms. Proper truck placarding must be performed in accordance with DOT regulations. Legible copies of all forms or licenses, and the signed original of the Waste Disposal Form (e.g., Asbestos Waste Shipment Record) for each waste load, shall be given to the USER AGENCY.

### 3.9 MONITORING, TESTING, AND INSPECTIONS

- A. All monitoring, with the exception of the REMEDIATION CONTRACTOR personnel monitoring, will be performed by the CONSULTANT. The REMEDIATION CONTRACTOR is responsible for personnel monitoring in compliance with OSHA regulations. The CONSULTANT may, at his discretion, also conduct personnel monitoring on REMEDIATION CONTRACTOR personnel. Monitoring by the CONSULTANT shall not relieve the REMEDIATION CONTRACTOR of obligation to perform personal exposure assessments.
- B. The performance and execution of the work will be closely monitored by the CONSULTANT. The monitoring will be inside the work areas and surroundings to evaluate compliance with these specifications and applicable regulations. The REMEDIATION CONTRACTOR shall provide cooperation and support to the CONSULTANT throughout the abatement process. The monitoring may include air samples in the workspace, personnel samples at breathing levels for a number of workers to be determined solely by the CONSULTANT, air samples in the areas surrounding the work area and the outside, checking of the standard operating procedures, engineering control system, respiratory protection system, labeling, packaging, transporting and disposal of asbestos, decontamination facilities and procedures and any other aspects of the abatement process that may impact the health and safety of the public or the pollution of the environment. This monitoring is further intended to document type and quantities of asbestos materials removed and to evaluate the REMEDIATION CONTRACTOR compliance with regulations and the Contract Documents.
- C. The REMEDIATION CONTRACTOR is responsible for meeting OSHA requirements for their personnel, including but not limited to, monitoring requirements, safety compliance and record keeping. Personal monitoring results from the previous day shall be posted each day, and legible copies of the results forwarded to the CONSULTANT.
- D. The REMEDIATION CONTRACTOR shall not start containment dismantling operations until REMEDIATION CONTRACTOR has received approval from the CONSULTANT.

### 3.10 FINAL INSPECTION AND TESTING

- A. After thorough cleaning and removal of all asbestos waste and materials, tools and equipment, the REMEDIATION CONTRACTOR's Asbestos Supervisor shall perform an initial inspection of the work area to determine if it is ready for a final visual inspection by the CONSULTANT. Once REMEDIATION CONTRACTOR has determined that the containment or regulated work area is ready for the final visual inspection, the CONSULTANT shall be notified no less than 48 hours in advance to schedule and perform the required final inspection and final clearance air testing. The CONSULTANT will visually inspect the work area for visible waste, dust, debris, or materials specified for removal or contamination. All surfaces shall be dry before the visual inspection. Once the work area passes visual inspection to the "No-visible-debris-criteria", per 454 CMR 28.10, abatement in that work area shall be deemed complete.
- B. After the specified post-abatement levels have been confirmed through the final inspection specified herein, the work area can be deconstructed and disposed of as

asbestos waste. A final check will be carried out by the CONSULTANT to ensure that no dust or debris remain on surfaces as the result of asbestos removal and related activities and containment dismantling operations.

- C. After achieving the level of cleanliness and decontamination as specified herein and as confirmed by the final inspection, the CONSULTANT and ARCHITECT will thoroughly inspect the work areas jointly with the REMEDIATION CONTRACTOR to determine whether any damage has been done to any building component, finish, equipment or any other part of the workspace or property that will not be subsequently demolished or have been specifically designated for salvage. A final inspection report shall be prepared jointly between the CONSULTANT and the ARCHITECT detailing the list of items to be fixed by the REMEDIATION CONTRACTOR.

Prepared by Adam S. Bisol, Massachusetts Asbestos Designer #AD000036.

#### END OF SECTION

Attachments:

Appendix A: FORM FOR GENERAL BID

Appendix B: Known Asbestos Containing Materials, Presumed Asbestos Containing Materials, and Assumed Asbestos Containing Materials: Locations, Descriptions, and Estimated Quantities

**Appendix A**  
**FORM FOR GENERAL BID**

**ASBESTOS-CONTAINING AND HAZARDOUS MATERIALS ABATEMENT  
CROCKER ELEMENTARY SCHOOL  
FITCHBURG, MA**

**FORM FOR GENERAL BID**

**Bidder's name:** \_\_\_\_\_

Date: \_\_\_\_\_

FOR: Asbestos Abatement  
Crocker Elementary School  
Fitchburg, MA

In compliance with your invitation for bids for the asbestos and hazardous materials abatement at the Crocker Elementary School, the undersigned bidder, a corporation organized and existing under the laws of the Commonwealth of Massachusetts or a partnership consisting of:

Or an individual trading as: \_\_\_\_\_

Located at: (street) \_\_\_\_\_  
(city and state) \_\_\_\_\_

have examined the Scope of Work and being fully advised as to the extent and character of the work to be performed, and the equipment to be furnished, hereby propose to furnish and pay for all labor, tools, material, plant, and equipment necessary for the performance of the above-mentioned work.

**Bidder's name:** \_\_\_\_\_

In submitting this bid, the Bidder agrees to the following points:

1. The Bidder will hold open his bid for 60 days from the date shown above.
2. The Bidder will enter into and execute a contract, if awarded, on the basis of this bid.
3. The Bidder will accomplish all work in accordance with the Specification.
4. The Bidder will perform the work of asbestos abatement within the time frame specified by the Owner and the Owner's representatives.
5. The Bidder will include the following documents with the bid submission:
  - Bid Form, signed and stamped.
  - Indemnity Agreement, signed and stamped.
  - Statement of Insurance.
  - Proof of Workmen's Compensation Insurance.
  - Schedule of Abatement, to include shifts and number of workers to be utilized to complete the work of the project in the specified timeframe.

## BASE BID PROPOSAL

The undersigned Bidder further proposes to perform all work and furnish and pay for all equipment in accordance with the Scope of Work. This proposal covers all work as defined by the specification to be performed, including the decontamination, removal and disposal of asbestos-containing and/or contaminated materials.

This Bidder agrees to perform all work as indicated by the Specification for the Lump Sum of (show in both words and figures):

**Total:**

(in words) \_\_\_\_\_

(in figures) \_\_\_\_\_

**Bidder's name:** \_\_\_\_\_

**Unit Prices**

The undersigned bidder agrees to the submission of the following unit pricing for addition/deduction to the scope of work:

Known Asbestos Containing Materials (ACM)

Boiler Insulation/components (internal rope gasket and refractory)	_____	ea
Pipe Fittings, Elbows, Tees, Unions, and Valves	_____	ea
Pipe Insulation	_____	lf
Duct Flex Connectors	_____	lf
Floor Tile, Sheet Flooring and Associated Mastics	_____	sf

Presumed ACM/Asbestos Containing Waste Materials (ACWM), Presence Unconfirmed

ACM/ACWM Joint Compound/Drywall	_____	sf
ACM/ACWM Plasters	_____	sf
Tile and/or Carpet Mastics (Including Residual)	_____	sf
Duct Mastics	_____	sf
Construction Mastics/Glue Daubs	_____	sf
Cementitious Tile Mortar/Adhesive and Grouts	_____	sf
Caulk in Masonry Fields	_____	lf
Window Caulking, Intra-frame	_____	ea
Glazing Compound (per window sash)	_____	ea
Vapor Barrier Coating	_____	sf
Textured Paint Coatings	_____	sf
Sink Coatings	_____	ea
Roof Perimeter Flashing Cements	_____	lf
Asphaltic Built-Up Roof Field	_____	sf

Asphaltic Roof Felts	_____sf
Asphaltic Roll Shingle Roof Field	_____sf
Duct Insulation Stickpin Mastic	_____sf
Concealed Loose Fill Insulation in Concrete Masonry Unit	_____cy
Concealed Duct Insulation	_____sf
Concealed Vibration Isolator Cloth	_____sf
Cement Board	_____sf
Concealed Caulking	_____lf
Concealed Floor Felts and Associated Mastic	_____sf
Concealed Through Wall Flashings	_____lf
Concealed Vapor Barrier Coating on Masonry	_____sf
Concealed Acoustical Coatings	_____sf
Valve Packings and Gaskets	_____ea
Buried Cementitious Pipe, Conduit or Water Service	_____lf
Buried Asphaltic Pipe, Conduit or Water Service	_____lf
Buried Duct Banks, Concrete and Insulation, Coatings	_____lf
Buried, Coated Concrete Foundations or Structures Damp Proofing	_____lf
Asbestos-impacted soil	_____ton

Miscellaneous HAZMAT

PCB Coatings (Paints, Vapor Barriers, and Damp Proofings)	_____sf
PCB Caulks and Sealants	_____lf
PCB Soil	_____ton
Collection and disposal of fluorescent light tubes (per drum)	_____ea
Collection and disposal of ballasts (per drum)	_____ea
Collection and disposal of Mercury switches	_____ea

Collection and disposal of miscellaneous oils (per drum) \_\_\_\_\_ ea

Collection and disposal of lead waste materials (per drum) \_\_\_\_\_ ea

Mobilization \_\_\_\_\_ ea

*NOTE: Unit prices for removal of asbestos-containing and hazardous materials are all inclusive to include labor, materials, and disposal.*

The Bidder further agrees that, if awarded this Contract, the project will commence construction immediately following proper notification to the Massachusetts Department of Environmental Protection and any other applicable regulatory agencies. The bidder shall be responsible for the payment of all fees associated with the notification or permitting process.

The Bidder further acknowledges that he has received the following addenda: \_\_\_\_\_  
(insert numbers of all addenda received; if no addenda received, insert "None").

The undersigned agrees that, if he is selected as the Contractor, he will, within five days, Saturdays, Sundays, and holidays excluded, after presentation thereof by the awarding authority, execute a contract in accordance with the terms of the bid.

**Bidder's name:** \_\_\_\_\_

The undersigned hereby certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

Date: \_\_\_\_\_

Name of firm: \_\_\_\_\_

Signed by: \_\_\_\_\_

Title: \_\_\_\_\_

Bidder's address: \_\_\_\_\_

Bidder's telephone number: \_\_\_\_\_

Corporate Seal

~: If a corporation, the bid must be signed by a person authorized by the corporation bylaws to enter into bidding Contracts for the corporation.

END OF BID PROPOSAL

**Appendix B**  
**Known Asbestos-containing Materials, Presumed Asbestos Containing Materials, and Assumed Asbestos Containing Materials: Locations, Descriptions, and Estimated Quantities**

**Note: The results in table B.1 are from the original AHERA inspection and prior to the full NESHAPS compliant inspection being completed (to be conducted spring of 2023). B.2 lists observed suspect materials at the site. B.3 lists materials assumed to be present but inaccessible for inspection at the time of specification development.**

<b>Table B.1</b> Known Asbestos-containing Materials and Estimated Quantities, Crocker Elementary School, Fitchburg, Massachusetts		
<b>Material Description</b>	<b>Material Location</b>	<b>Estimated Quantity*</b>
9"x 9" Floor tile and mastic	Throughout building	37,000 SF
Pipe Insulation and fittings/elbows	Throughout building	2,500 LF and 500 each
Boiler interior components	Boiler room	2 each
Flex connectors	Throughout building	330 LF
SF     square feet LF     linear feet  * All quantities are approximate and must be field verified by bidding contractor(s).		

<b>Table B.2</b> Presumed Asbestos-containing Materials and Estimated Quantities, Crocker Elementary School, Fitchburg, Massachusetts		
<b>Material Description</b>	<b>Material Location</b>	<b>Estimated Quantity*</b>
Weather caulking and expansion joints	Building exterior	3,000 LF
12" x 12" Floor tile and mastic	Throughout building	30,000 SF
Vapor barrier and mastic in building exterior	Building exterior facade	10,000 SF
Window caulking and glazing	Throughout building	300 each
Roofing materials	Throughout building	40,000 SF
Ceramic tile grouts and mortar beds	Throughout building	1,000 SF
Ceiling tile and associated glue daubs	Throughout building	10,000 SF
Cement board	Exterior awnings	100 SF
LF     linear feet SF     square feet  * All quantities are approximate and must be field verified by bidding contractor(s).		

<b>Table B.3</b> Assumed Asbestos-containing Materials, Presence Unconfirmed, Crocker Elementary School, Fitchburg, Massachusetts		
<b>Material Description</b>	<b>Material Location</b>	<b>Estimated Quantity*</b>
Underground mechanical systems piping trench and associated pipe insulation and fittings/elbows	In slab, throughout building	2,000 LF 2,000 LF and 200 each
Foundation damp-proofing coatings	Throughout building	2,000 SF
Duct insulation and associated stick pin mastic	Throughout building	5,000 SF
Through wall flashings	Building exterior	2,000 LF
Concealed floor felts and associated mastic	Gymnasium	7,500 SF

Exterior buried utilities pipe	Onsite exterior	2,000 LF
LF	linear feet	
SF	square feet	
* All quantities are approximate and must be field verified by bidding contractor(s).		