Bidding Addendum

Addendum No. 1 dated March 8, 2019 for Bedford Primary School Roof and HVAC Replacement, Wiley/Wilson Comm. No. 218142.00, dated February 14, 2019.

To: All Bidding Document Holders of Record

From: Wiley|Wilson Lynchburg, Virginia

This Addendum contains 1 page(s) and listed attachments and forms a part of the bidding documents and modifies the Project Manual and Drawings dated, February 14, 2019, as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject bidder to disgualification.

SPECIFICATIONS

Added Specification Section 028200 Asbestos Remediation, attached.

Modify Article 4.02.A of the Modified Form of Agreement Between Owner and Contractor Stipulated *Price*, change the Days to Achieve Substantial Completion and Final Payment Section from:

"The work will be substantially completed within 90 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 120 days after the date when the Contract Times commence to run."

To read:

"The Contractor may begin work on Thursday, May 30, 2019. The Work will be substantially completed by Friday, August 2nd, 2019, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions by Tuesday, August 13, 2019."

Revised Bid Form to include several Unit Prices identified in Project manual. The modified Bid Form is **attached** and shall be used for submitting bids.

DRAWINGS

Sheet M-601 – Change the model number for RTU-1 in the Rooftop Unit Schedule from "THH210" to read "TSH210". Note the cooling capacity numbers listed in the Rooftop Unit Schedule for the new RTU-1 unit will not match those indicated in the schedule.

MISCELLANEOUS

Attachments:

- Excerpt from Asbestos 2017 AHERA Three Year Asbestos Re-Inspection Report • pertaining to Bedford Primary School
- Test results from EnviroSciences, Inc. 1985 Asbestos testing of Bedford Primary School
- Responses to bidder questions have been included in the attached Bidder Questions • and Responses sheet.

Stat M Francis, PE

028200 Asbestos Remediation

SECTION 028200 - ASBESTOS REMEDIATION

PART 1 - REFERENCES

1.1 RELATED DOCUMENTS

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 SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z9.2 (2018) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM INTERNATIONAL (ASTM)

(2006; R 2012) Aging Effects of Artificial Weathering on Latex Sealants
(1993; R 2010) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
(2016) Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
(2014) Mandrel Bend Test of Attached Organic Coatings
(2018) Standard Test Methods for Fire Tests of Building Construction and Materials
(2014) Visual Inspection of Asbestos Abatement Projects
(2012) Encapsulants for Spray- or Trowel-Applied Friable Asbestos-Containing Building Materials
(2017) Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members
(2018a) Standard Test Method for Surface Burning Characteristics of Building Materials
(2016) Standard Test Methods for Water Vapor Transmission of Materials
COMPRESSED GAS ASSOCIATION (CGA)
(2014) Compressed Air for Human Respiration; 6th Edition

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INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z87.1 (2015) Occupational and Educational Personal Eye and Face Protection Devices NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) **NFPA 701** (2019) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH) NIOSH NMAM (2016; 5th Ed) NIOSH Manual of Analytical Method U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) (1990) Asbestos/NESHAP Regulated Asbestos Containing Materials EPA 340/1-90/018 Guidance (1985) Guidance for Controlling Asbestos-Containing Materials in Buildings EPA 560/5-85-024 (Purple Book)

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

- 29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out)
- 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
- 42 CFR 84 Approval of Respiratory Protective Devices
- 49 CFR 107 Hazardous Materials Program Procedures

WILEY WILSON	BEDFORD COUNTY PUBLIC SCHOOLS BEDFORD PRIMARY SCHOOL – ROOF AND HVAC REPLACEMENT COMM. NO. 218142.00
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
	UNDERWRITERS LABORATORIES (UL)
UL 586	(2009; Reprint Dec 2017) UL Standard for Safety High-Efficiency Particulate, Air Filter Units

1.2 DEFINITIONS

- A. ACM sbestos Containing Materials
- B. Amended Water- Water containing a wetting agent or surfactant with a maximum surface tension of 0.00042 psi.
- C. Area Sampling Sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.
- D. Asbestos The term asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least one percent.
- E. Asbestos Control Area That area where asbestos removal operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.
- F. Asbestos Control Area Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.
- G. Asbestos Permissible Exposure Limit 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.
- H. Authorized PersonAny person authorized by the Contractor and required by work duties to be present in the regulated areas.
- I. Background The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.

- J. Competent Person (CP) A person meeting the requirements for competent person as specified in 29 CFR 1926.1101 including a person capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, and is specifically trained in a training course which meet the criteria of EPA's Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent. The competent person must have a current State of Virginia asbestos contractors or supervisors license.
- K. Contractor The Contractor is that individual, or entity under contract to perform the herein listed work.
- L. Disposal Bag A 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926.1101, used for transporting asbestos waste from containment to disposal site.
- M. Disturbance Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in one standard sized glovebag or waste bag, not larger than 60 inches in length and width in order to access a building component.
- N. Encapsulation The abatement of an asbestos hazard through the appropriate use of chemical encapsulants.
- O. Encapsulants Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.
 - 1. Removal Encapsulant (can be used as a wetting agent)
 - 2. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material)
 - 3. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage)
 - 4. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).
- P. Friable Asbestos Material A term defined in 40 CFR 61-SUBPART M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
- Q. Glovebag Technique Those asbestos removal and control techniques put forth in 29 CFR 1926.1101.
- R. HEPA Filter Equipment High efficiency particulate air (HEPA) filtered vacuum and exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters must retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

- S. Model Accreditation Plan (MAP) USEPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763.
- T. Negative Pressure Enclosure (NPE) That engineering control technique described as a negative pressure enclosure in 29 CFR 1926.1101.
- U. NESHAP National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61-SUBPART M.
- V. Nonfriable Asbestos Material Material that contains asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. It is understood that asbestos fibers may be released under other conditions such as demolition, removal, or mishap.
- W. Permissible Exposure Limits (PELs)
 - 1. PEL-Time Weighted Average(TWA) Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8-hour time weighted average (TWA).
 - 2. PEL-Excursion Limit An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes.
- X. Personal Sampling Air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101
- Y. Private Qualified Person (PQP) That qualified person hired by the Contractor to perform the herein listed tasks.
- Z. 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 E1368. The QP must be appropriately licensed in the State of Virginia.
- AA. TEM Refers to Transmission Electron Microscopy.
- BB. Time Weighted Average (TWA) Time Weighted Average (TWA)
- CC. Transite A generic name for asbestos cement wallboard and pipe.
- DD. Wetting Agent A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at most 0.00042 psi.

EE. Worker - Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926.1101, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation, if required by the OSHA Class of work to be performed or by the state where the work is to be performed.

1.3 REQUIREMENTS

A. Description of Work

- 1. 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 must be outlined in the Asbestos Hazard Abatement Plan called for elsewhere in this specification. The asbestos work includes the demolition and removal of asbestos containing insulation around boiler pipes and ducts that will be impacted by the boiler replacement. Additionally, if determined to be asbestos containing, the work will include the demolition and removal of the existing plaster ceiling within the boiler room. Further, other areas determined to contain asbestos that will be affected by the scope of work for this project. 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 techniques as outlined in this specification. The work area will be evacuated during the asbestos abatement work. A competent person must supervise asbestos removal work as specified herein.
- B. Unexpected Discovery of Asbestos
 - 1. Notify the Owner if any previously untested building components suspected to contain asbestos are impacted by the work.
- C. Medical Requirements
 - 1. Provide medical requirements including but not limited to medical surveillance and medical record keeping as listed in 29 CFR 1926.1101.
 - a. 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 must 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."

- b. Medical Records 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.
- D. Employee Training
 - 1. 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. Organize certificates by individual worker, not grouped by type of certification. Train 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. Document the training by providing: dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the Owner. Furnish each employee with respirator training and fit testing administered by the PQP as required by 29 CFR 1926.1101 and 29 CFR 1926.103. Fully cover engineering and other hazard control techniques and procedures.
- E. Permits and Notifications
 - 1. Prior to the start of work, obtain necessary permits in conjunction with asbestos removal, encapsulation, hauling, and disposition, and furnish notification of such actions required by Federal, State, regional, and local authorities. Notify the State's environmental protection agency and the Owner in writing 10 working days prior to commencement of work. Notify the Owner and other appropriate agencies in writing 20 working days prior to the start of asbestos work as indicated in applicable laws, ordinances, criteria, rules, and regulations.
- F. Environment, Safety and Health Compliance
 - 1. 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. 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 applies.
- G. Respiratory Protection Program

- 1. Establish and implement a respirator program as required by 29 CFR 1926.1101, and 29 CFR 1926.103. Submit a written description of the program to the Owner. Submit a written program manual or operating procedure including methods of compliance with regulatory statutes.
 - a. Respirator Program Records Submit records of the respirator program as required by 29 CFR 1926.103, and 29 CFR 1926.1101.
 - b. Respirator Fit Testing The Contractor's PQP must conduct a qualitative or quantitative fit test conforming to 29 CFR 1926.103 for each worker required to wear a respirator, and any authorized visitors who enter a regulated area where respirators are required to be worn. A respirator fit test must be performed prior to initially wearing a respirator and every 12 months thereafter. If physical changes develop that will affect the fit, a new fit test must be performed. Functional fit checks must be performed each time a respirator is put on and in accordance with the manufacturer's recommendation.
 - c. Respirator Selection and Use Requirements Provide respirators, and ensure that they are used as required by 29 CFR 1926.1101 and in accordance with CGA G-7 and the manufacturer's recommendations. Respirators must be approved by the National Institute for Occupational Safety and Health NIOSH, under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. For air-purifying respirators, the particulate filter must be high-efficiency particulate air (HEPA)/(N-,R-,P-100). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type must be made by the Contractor's Designated IH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered.
- H. Asbestos Hazard Control Supervisor.
 - 1. Adhere to all parts of 29 CFR 1926.59 and provide the Owner with a copy of the Safety Data Sheets (SDS) for all materials brought to the site.
- I. Asbestos Hazard Abatement Plan
 - 1. 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 removal and demolition of materials containing asbestos. The plan, not to be combined with other hazard abatement plans, must be prepared, signed, and sealed by the PQP. Provide a Table of Contents for each abatement submittal, which follows the sequence of requirements in the contract. The plan must 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 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 must 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, CP and PQP must meet with the Owner prior to beginning work, to discuss in detail the Asbestos Hazard Abatement Plan, including work procedures and safety precautions. Once approved by the Owner, the plan will be enforced as if an addition to the specification. Any changes required in the specification as a result of the plan must be identified specifically in the plan to allow for free discussion and approval by the Owner prior to starting work.

- J. Testing Laboratory
 - 1. 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 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 firm must be independent of the asbestos contractor and must have no employee or employer relationship which could constitute a conflict of interest.
- K. Landfill Approval
 - 1. Submit written evidence that the landfill is approved for asbestos disposal.
- L. Transporter Certification
 - 1. Submit written evidence that the transporter is approved to transport asbestos waste in accordance with the DOT requirements of 49 CFR 171, 49 CFR 172 and 49 CFR 173 as well as registration requirements of 49 CFR 107 and all other State and local regulatory agency requirements.
- M. Medical Certification
 - 1. 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.

1.4 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

Test Reports

Air Sampling Results;

Pressure Differential Recordings for Local Exhaust System;

Clearance Sampling;

Asbestos Disposal Quantity Report;

Certificates

Employee Training;

Notifications;

Respiratory Protection Program;

Asbestos Hazard Abatement Plan;

Testing Laboratory;

Medical Certification;

Private Qualified Person Documentation;

Competent Person;

Contractor's License;

Closeout Submittals

Permits

Notifications;

Respirator Program Records;

1.5 QUALITY ASSURANCE

A. Private Qualified Person Documentation: Submit the name, address, and telephone number of the Private Qualified Person (PQP) selected to prepare the Asbestos Hazard Abatement Plan, direct monitoring and training, 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 and the asbestos contractor must not have an employee/employer relationship or financial relationship which could constitute a conflict of interest. The PQP must be a first tier subcontractor.

ASBESTOS REMEDIATION

028200 - 10

- B. Competent Person Documentation: The Competent Person must be experienced in the administration and supervision of asbestos abatement projects including exposure assessment and monitoring, work practices, abatement methods, protective measures for personnel, setting up and inspecting asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees onsite, . The Competent Person must be on-site at all times when asbestos abatement activities are underway. Submit training certification and a current State of Virginia Asbestos Contractor's and Supervisor's License. Submit evidence that the Competent Person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person requirements.
- C. Contractor's License Submit a copy of the asbestos contractor's license issued by the State of Virginia. Submit the following certification along with the license: "I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926.1101, 40 CFR 61-SUBPART MEM 385-1-1, and the Federal, State and local requirements for those asbestos abatement activities that they will be involved in." This certification statement must be signed by the Company's President or Chief Executive.
- D. Air Sampling Results: Complete fiber counting and provide results to the PQP and GC for review within 16 hours of the "time off" of the sample pump. Notify the Owner immediately of any airborne levels of asbestos fibers in excess of the acceptable limits. Submit sampling results to the Owner and the affected Contractor employees where required by law within three working days, signed by the testing laboratory employee performing air sampling, the employee that analyzed the sample, and the PQP and GC. Notify the Contractor and the Owner immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.01 fibers per cubic centimeter or background whichever is higher. In no circumstance must levels exceed 0.1 fibers per cubic centimeter.
- E. Pressure Differential Recordings for Local Exhaust System: Provide a local exhaust system that creates a negative pressure of at least 0.02 inches of water relative to the pressure external to the enclosure and operate it continuously, 24-hours a day, until the temporary enclosure of the asbestos control area is removed. Submit pressure differential recordings for each work day to the PQP and GC for review and to the Owner within 24-hours from the end of each work day.
- F. Federal, State or Local Citations on Previous Projects: Submit a statement, signed by an officer of the company, containing a record of any citations issued by Federal, State or local regulatory agencies relating to asbestos activities within the last 5 years (including projects, dates, and resolutions); a list of penalties incurred through non-compliance with asbestos project specifications, including liquidated damages, overruns in scheduled time limitations and resolutions; and situations in which an asbestos-related contract has been terminated (including projects, dates, and reasons for terminations). If there are none, a negative declaration signed by an officer of the company must be provided.
- G. Preconstruction Conference: Conduct a safety preconstruction conference to discuss the details of the Asbestos Hazard Abatement Plan and Accident Prevention Plan (APP). The safety preconstruction conference must include the Contractor and their Designated Competent Person, Designated IH and Project Supervisor and the Owner. Deficiencies in the APP will be discussed. Onsite work must not begin until the APP has been accepted.

1.6 SECURITY

A. Entry into regulated areas must only be by personnel authorized by the Contractor and the Owner. Personnel authorized to enter regulated areas must be trained, medically evaluated, and wear the required personal protective equipment.

PART 2 - PRODUCTS

2.1 ENCAPSULANTS

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

Requirement	Test Standard
Flame Spread - 25, Smoke Emission - 50	ASTM E84
Life Expectancy - 20 years	ASTM C732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E96/E96M
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E119
Impact Resistance - Minimum 43 in/lb	ASTM D2794 Gardner Impact Test
Flexibility - no rupture or cracking	ASTM D522/D522M Mandrel Bend Test

Removal Encapsulants:

2.2 DUCT TAPE

A. Industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposal container.

2.3 DISPOSAL CONTAINERS

- A. Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposal containers must be provided for ACM wastes as required by 29 CFR 1926.1101. Disposal containers can be in the form of:
 - 1. Disposal Bags
 - 2. Fiberboard Drums
 - 3. Cardboard Boxes

2.4 SHEET PLASTIC

- A. Sheet plastic must be polyethylene of 6 mil minimum thickness and must be provided in the largest sheet size necessary to minimize seams. Film must be clear or black and conform to ASTM D4397, except as specified below:
 - 1. Flame Resistant Where a potential for fire exists, flame-resistant sheets must be provided. Film must be frosted or black and must conform to the requirements of NFPA 701.
 - 2. Reinforced Reinforced sheets must be provided where high skin strength is required, such as where it constitutes the only barrier between the regulated area and the outdoor environment. The sheet stock must consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between 2 layers of polyethylene film. Film must meet flame resistant standards of NFPA 701.

2.5 MASTIC REMOVING SOLVENT

A. Mastic removing solvent must be nonflammable and must not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used onsite must have a flash point greater than 140 degrees F.

2.6 LEAK-TIGHT WRAPPING

A. Two layers of 6 mil minimum thick polyethylene sheet stock must be used for the containment of removed asbestos-containing components or materials such as large tanks, boilers, insulated pipe segments and other materials. Upon placement of the ACM component or material, each layer must be individually leak-tight sealed with duct tape.

2.7 VIEWING INSPECTION WINDOW

A. Where feasible, a minimum of one clear, 1/8 inch thick, acrylic sheet, 18 by 24 inches, must be installed as a viewing inspection window at eye level on a wall in each containment enclosure. The windows must be sealed leak-tight with industrial grade duct tape.

2.8 WETTING AGENTS

A. Removal encapsulant (a penetrating encapsulant) must be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant must be capable of wetting the ACM and retarding fiber release during disturbance of the ACM greater than or equal to that provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS above.

PART 3 EXECUTION

3.1 EQUIPMENT

- A. Provide manufacturer's certificate of compliance for all equipment used to contain airborne asbestos fibers.
 - 1. Air Monitoring Equipment: The Contractor's PQP must approve air monitoring equipment. The equipment must include, but must not be limited to:
 - a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute.
 - b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps must also be equipped with an automatic flow control unit which must maintain a constant flow, even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
 - c. Single use standard 25 mm diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive extension cowl, and shrink bands for personal air sampling.
 - d. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 to plus 140 degrees F and traceable to a NIST primary standard.
- B. Respirators: Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.
 - 1. Respirators for Handling Asbestos: Provide personnel engaged in pre-cleaning, cleanup, handling, removal and or demolition of asbestos materials with respiratory protection as indicated in 29 CFR 1926.1101 and 29 CFR 1926.103. Breathing air must comply with CGA G-7.
- C. Exterior Whole Body Protection
 - 1. Outer Protective Clothing Provide personnel exposed to asbestos with disposable "nonbreathable," whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but must not be used alone. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape.

- 2. Work Clothing Provide cloth work clothes for wear under the outer protective clothing and foot coverings and either dispose of or properly decontaminate them as recommended by the PQP after each use.
- 3. Eye Protection Provide eye protection that complies with ANSI/ISEA Z87.1 when operations present a potential eye injury hazard. Provide goggles to personnel engaged in asbestos abatement operations when the use of a full face respirator is not required.
- D. Regulated Areas
 - 1. All Class I, II, and III asbestos work must be conducted within regulated areas. The regulated area must be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Control access to regulated areas, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.
- E. Load-out Unit
 - 1. Provide a temporary load-out unit that is adjacent and connected to the regulated area. Attach the load-out unit in a leak-tight manner to each regulated area.
- F. Warning Signs and Labels
 - 1. Provide warning signs at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to the requirements are acceptable.
 - a. 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
MAY CAUSE CANCER	one inch Sans Serif Gothic or Block
CAUSES DAMAGE TO LUNGS	1/4 inch Sans Serif Gothic or Block
AUTHORIZED PERSONNEL ONLY	1/4 inch Sans Serif Gothic or Block
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA	1/4 inch Sans Serif Gothic or Block

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

2. 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
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST AVOID CREATING DUST

- G. Local Exhaust System Provide a local exhaust system in the asbestos control area in accordance with ASSP Z9.2 and 29 CFR 1926.1101 that will provide at least four air changes per hour inside of the negative pressure enclosure. Local exhaust equipment must be operated 24-hours per day, until the asbestos control area is removed and must be leak proof to the filter and equipped with HEPA filters. Maintain a minimum pressure differential in the control area of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with a pressure differential automatic recording instrument. The building ventilation system must not be used as the local exhaust system for the asbestos control area. Filters on exhaust equipment must conform to ASSP Z9.2 and UL 586. Terminate the local exhaust system out of doors and remote from any public access or ventilation system intakes.
- H. Tools Vacuums must be leak proof to the filter and equipped with HEPA filters. Filters on vacuums must conform to ASSP Z9.2 and UL 586. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation systems. Remove all residual asbestos from reusable tools prior to storage or reuse. Reusable tools must be thoroughly decontaminated prior to being removed from the regulated areas.
- I. Single Stage Decontamination Area A decontamination area (equipment room/area) must be provided for Class I work involving less than 25 feet or 10 square feet of TSI or surfacing ACM, and for Class II and Class III asbestos work operations where exposures exceed the PELs or where there is no negative exposure assessment. The equipment room or area must be adjacent to the regulated area for the decontamination of employees, material, and their equipment which could be contaminated with asbestos. The area must be covered by an impermeable drop cloth on the floor or horizontal working surface. The area must be of sufficient size to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area.
- J. Decontamination Area Exit Procedures Ensure that the following procedures are followed:
 - 1. Before leaving the regulated area, remove all gross contamination and debris from work clothing using a HEPA vacuum.

- 2. Employees must remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers for disposal or laundering.
- 3. Employees must not remove their respirators until showering.
- 4. Employees must shower prior to entering the clean room. If a shower has not been located between the equipment room and the clean room or the work is performed outdoors, ensure that employees engaged in Class I asbestos jobs: a) Remove asbestos contamination from their work suits in the equipment room or decontamination area using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or b) Remove their contaminated work suits in the equipment room, without cleaning worksuits, and proceed to a shower that is not adjacent to the work area.

3.2 WORK PROCEDURE

- Perform asbestos related work in accordance with 29 CFR 1926.1101, 40 CFR 61-SUBPART A. M, and as specified herein. Use wet removal procedures and negative pressure enclosure techniques. Wear and utilize protective clothing and equipment as specified herein. No eating, smoking, drinking, chewing gum, tobacco, or applying cosmetics is permitted in the asbestos work or control areas. Personnel of other trades not engaged in the removal and demolition of asbestos containing material must not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this specification are complied with by the trade personnel. Seal all roof top penetrations, except plumbing vents, prior to asbestos roofing work. Shut down the building heating, ventilating, and air conditioning system, cap the openings to the system, prior to the commencement of asbestos work. Power to the regulated area must be locked-out and tagged in accordance with 29 CFR 1910.147. All electrical work must be performed by a licensed electrician. Stop abatement work in the regulated area immediately when the airborne total fiber concentration: (1) equals or exceeds 0.01 f/cc, or the pre-abatement concentration, whichever is greater, outside the regulated area; or (2) equals or exceeds 1.0 f/cc inside the regulated area. Correct the condition to the satisfaction of the Owner, including visual inspection and air sampling. Work must resume only upon notification by the Owner. Corrective actions must be documented. If an asbestos fiber release or spill occurs, stop work immediately, correct the condition to the satisfaction of the Owner including clearance sampling, prior to resumption of work.
 - B. Building Ventilation System and Critical Barriers: Building ventilation system supply and return air ducts in a regulated area must be isolated by airtight seals to prevent the spread of contamination throughout the system. The airtight seals must consist of air-tight rigid covers for building ventilation supply and exhaust grills where the ventilation system is required to remain in service during abatement. Edges to wall, ceiling and floor surfaces must be sealed with industrial grade duct tape.
 - 1. A Competent Person must supervise the work.
 - 2. For indoor work, critical barriers must be placed over all openings to the regulated area.
 - 3. Impermeable dropcloths must be placed on surfaces beneath all removal activity
 - C. Protection of Existing Work to Remain: Perform work without damage or contamination of adjacent work. Where such work is damaged or contaminated as verified by the Owner

using visual inspection or sample analysis, it must be restored to its original condition or decontaminated by the Contractor at no expense to the Owner as deemed appropriate by the Owner. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, stop work immediately. Then clean up the spill. When satisfactory visual inspection and air sampling results are obtained from the PQP work may proceed at the discretion of the Owner.

- D. Furnishings: Furniture and equipment will remain in the building. Cover and seal furnishings with 6-mil plastic sheet or remove from the work area and store in a location on site approved by the Owner.
- E. Precleaning: Wet wipe and HEPA vacuum all surfaces potentially contaminated with asbestos prior to establishment of an enclosure.
- F. Asbestos Control Area Requirements
 - 1. Negative Pressure Enclosure: Removal of thermal system insulation and/or plaster ceilings require the use of a negative pressure enclosure. Block and seal openings in areas where the release of airborne asbestos fibers can be expected. Establish an asbestos negative pressure enclosure with the use of curtains, portable partitions, or other enclosures in order to prevent the escape of asbestos fibers from the contaminated asbestos work area. Negative pressure enclosure development must include protective covering of uncontaminated walls, and ceilings with a continuous membrane of two layers of minimum 6-mil plastic sheet sealed with tape to prevent water or other damage. Provide two layers of 6-mil plastic sheet over floors and extend a minimum of 12 inches up walls. Seal all joints with tape. Provide local exhaust system in the asbestos control area. Openings will be allowed in enclosures of asbestos control areas for personnel and equipment entry and exit, the supply and exhaust of air for the local exhaust system and the removal of properly containerized asbestos containing materials. Replace local exhaust system filters as required to maintain the efficiency of the system.
 - 2. Glovebag: If the construction of a negative pressure enclosure is infeasible for the removal of asbestos located in the boiler room. Use alternate techniques as indicated in 29 CFR 1926.1101. Establish designated limits for the asbestos regulated area with the use of rope or other continuous barriers, and maintain all other requirements for asbestos control areas. The PQP must conduct personal samples of each worker engaged in asbestos handling (removal, disposal, transport and other associated work) throughout the duration of the project. If the quantity of airborne asbestos fibers monitored at the breathing zone of the workers at any time exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, evacuate personnel in adjacent areas or provide personnel with approved protective equipment. If adjacent areas are contaminated, clean the contaminated areas, monitor, and visually inspect the area as specified herein.
 - 3. Regulated Area for Class II Removal: Removal of asbestos containing floor tile/mastic, if required, or sealants are Class II removal activities. Establish designated limits for the asbestos regulated work area with the use of red barrier tape; install critical barriers, splash guards and signs, and maintain all other requirements for asbestos control area except local exhaust. Place impermeable dropcloths on surfaces beneath removal activity extending out 3 feet in all directions. A detached

decontamination system may be used. Conduct area monitoring of airborne fibers during the work shift at the designated limits of the asbestos work area and conduct personal samples of each worker engaged in the work. If workers the airborne fiber concentration of the workers or designated limits at any time exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work immediately and correct the situation.

- G. Removal Procedures: Wet asbestos material with a fine spray of amended water a specific wetting agent such as light oil during removal, cutting, or other handling so as to reduce the emission of airborne fibers. Remove material and immediately place in 6 mil plastic disposal bags. Remove asbestos containing material in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6 mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the Owner for approval. For example, in the case where both piping and insulation are to be removed, the Contractor may elect to wet the insulation, wrap the pipes and insulation in plastic and remove the pipe by sections. Containerize asbestos containing material while wet. Do not allow asbestos material to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated in 40 CFR 61-SUBPART M.
- H. Methods of Compliance
 - 1. Mandated Practices: The specific abatement techniques and items identified must be detailed in the Contractor's AHAP. Use the following engineering controls and work practices in all operations, regardless of the levels of exposure:
 - a. Vacuum cleaners equipped with HEPA filters.
 - b. Wet methods or wetting agents except where it can be demonstrated that the use of wet methods is unfeasible due to the creation of electrical hazards, equipment malfunction, and in roofing.
 - c. Prompt clean-up and disposal.
 - d. Inspection and repair of polyethylene.
 - e. Cleaning of equipment and surfaces of containers prior to removing them from the equipment room or area.
 - 2. Control Methods Use the following control methods:
 - a. Local exhaust ventilation equipped with HEPA filter;
 - b. Enclosure or isolation of processes producing asbestos dust;
 - c. Where the feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PELs, use them to reduce employee exposure to the lowest levels attainable and must supplement them by the use of respiratory protection.
 - 3. Unacceptable Practices The following work practices must not be used:
 - a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.

- b. Compressed air used to remove asbestos containing materials, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
- c. Dry sweeping, shoveling, or other dry clean up.
- d. Employee rotation as a means of reducing employee exposure to asbestos.
- I. Class I Work Procedures In addition to requirements of paragraphs MANDATED PRACTICES and CONTROL METHODS, the following engineering controls and work practices must be used:
 - 1. A Competent Person must supervise the installation and operation of the control methods.
 - 2. For jobs involving the removal of more than 25 feet or 10 square feet of TSI or surfacing material, place critical barriers over all openings to the regulated area.
 - 3. HVAC systems must be isolated in the regulated area by sealing with a double layer of plastic or air-tight rigid covers.
 - 4. Impermeable dropcloths (6 mil or greater thickness) must be placed on surfaces beneath all removal activity.
 - 5. Where a negative exposure assessment has not been provided or where exposure monitoring shows the PEL was exceeded, the regulated area must be ventilated with a HEPA unit and employees must use PPE.
- J. Specific Control Methods for Class I Work Use Class I work procedures, control methods and removal methods for the following ACM:
 - 1. Gypsum Wallboard and Joint Compound
 - 2. Thermal System Insulation and Mudded Pipe Fittings
 - 3. Plaster and Textured Ceilings and Walls
 - 4. Vermiculite
 - a. Negative Pressure Enclosure (NPE) System The system must provide at least four air changes per hour inside the containment. The local exhaust unit equipment must be operated 24-hours per day until the containment is removed. The NPE must be smoke tested for leaks at the beginning of each shift and be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential must be monitored continuously, 24-hours per day, with an automatic manometric recording instrument and Records must be provided daily on the same day collected to the Owner. The Owner must be notified immediately if the pressure differential falls below the prescribed minimum. The building ventilation system must not be used as the local exhaust system for the regulated area. The NPE must terminate outdoors unless an alternate arrangement is allowed by the Owner. All filters used must be new at the beginning of the project and must be periodically changed as necessary and disposed of as ACM waste.
 - b. Glovebag Systems Glovebags must be used without modification, smoke-tested for leaks, and completely cover the circumference of pipe or other structures where the work is to be done. Glovebags must be used only once and must not be moved. Glovebags must not be used on surfaces that have temperatures exceeding 150 degrees F. Prior to disposal, glovebags must be collapsed using a HEPA vacuum. Before beginning the operation, loose and friable material adjacent to the glovebag

operation must be wrapped and sealed in 2 layers of plastic or otherwise rendered intact. At least two persons must perform glovebag removal. Asbestos regulated work areas must be established for glovebag abatement. Designated boundary limits for the asbestos work must be established with rope or other continuous barriers and all other requirements for asbestos control areas must be maintained, including area signage and boundary warning tape.

- 1) Attach HEPA vacuum systems to the bag to prevent collapse during removal of ACM.
- 2) The negative pressure glove boxes must be fitted with gloved apertures and a bagging outlet and constructed with rigid sides from metal or other material which can withstand the weight of the ACM and water used during removal. A negative pressure must be created in the system using a HEPA filtration system. The box must be smoke tested for leaks prior to each use.
- c. Mini-Enclosure Double bulkhead containment or Mini-containment (small walkin enclosure)] to accommodate no more than two persons, may be used if the disturbance or removal can be completely contained by the enclosure. The minienclosure must be inspected for leaks and smoke tested before each use. Air movement must be directed away from the employee's breathing zone within the mini-enclosure.
- d. Wrap and Cut Operation Prior to cutting pipe, the asbestos-containing insulation must be wrapped with polyethylene and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. The following steps must be taken: install glovebag, strip back sections to be cut 6 inches from point of cut, and cut pipe into manageable sections.
- e. Class I Removal Method Class I ACM must be removed using a control method described above. Prepare work area as previously specified. Establish designated limits for the asbestos regulated work area with the use of red barrier tape, critical barriers, signs, and maintain all other requirements for asbestos control area. Spread one layer of 6-mil seamless plastic sheeting on the floor below the work area. Remove ACM thermal system insulation and mudded pipe fittings using mechanical means and wet methods and immediately place into 6-mil thickness disposal bag. Continue wet cleaning until surfaces are free of visible debris. Remove ACM plaster ceilings or walls using mechanical means and adequately wet methods and immediately place into 6-mil thickness disposal bag. Make every effort to keep the material from falling to the floor of the work area. Continue wet cleaning until surfaces are free of visible debris. Bag all asbestos debris which has fallen to the floor as asbestos-containing debris. Place all debris in plastic disposal bags of 6-mil minimum thickness. Once the material is in the disposal bag, apply additional water as needed to achieve "adequately wet" conditions for NESHAP compliance. Place bagged asbestos waste under negative pressure with the use of a HEPA vacuum, goose neck and duck tape to seal the bag, wash to remove any visible contamination and place into a second 6-mil minimum thickness disposal bag. Containerize asbestos containing waste while wet. Lower and otherwise handle asbestos containing materials as indicated in 40 CFR 61-SUBPART M. Conduct area monitoring of airborne fibers during the work shift at the designated

limits of the asbestos work area and conduct personal samples of each worker engaged in the work. If the quantity of airborne asbestos fibers monitored at the breathing zone of the workers or the designated limits at any time exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work, and immediately correct the situation.

- K. Class II Work Procedures In addition to the requirements of paragraphs MANDATED PRACTICES and CONTROL METHODS, the following engineering controls and work practices must be used:
 - 1. A Competent Person must supervise the work.
 - 2. For indoor work, critical barriers must be placed over all openings to the regulated area.
 - 3. Impermeable dropcloths must be placed on surfaces beneath all removal activity.
- L. Specific Control Methods for Class II Work
 - 1. Sealants and Mastic Establish designated limits for the asbestos regulated work area with the use of red barrier tape, critical barriers and signs, and maintain all other requirements for asbestos control area except local exhaust. Spread 6-mil plastic sheeting on the ground around the perimeter of the work area extending out in all directions. Using adequately wet methods, carefully remove the ACM sealants and mastics using a scraper of knife blade. As it is removed place the material into a disposal bag. Make every effort to keep the asbestos material from falling to the ground or work area floor below. Dry sweeping is prohibited. Use vacuums equipped with HEPA filter and disposable dust bag. Place debris into a 6-mil minimum thickness disposal bag or other approved container. Once the material is in the disposal bag, apply additional water as needed to achieve "adequately wet" conditions for NESHAP compliance. Place bagged asbestos waste under negative pressure with the use of a HEPA vacuum, goose neck and duck tape to seal the bag, wash to remove any visible contamination and place into a second 6-mil minimum thickness disposal bag. Containerize asbestos containing waste while wet. Lower and otherwise handle asbestos containing materials as indicated in 40 CFR 61-SUBPART M. Conduct area monitoring of airborne fibers during the work shift at the designated limits of the asbestos work area and conduct personal samples of each worker engaged in the work. If the airborne fiber concentration of the workers or at designated limits at any time exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work immediately and correct the situation.
- M. Air Sampling Perform sampling of airborne concentrations of asbestos fibers in accordance with 29 CFR 1926.1101, the Contractor's air monitoring plan and as specified herein. Sampling performed in accordance with 29 CFR 1926.1101 must be performed by the PQP. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis. Results of breathing zone samples must be posted at the job site and made available to the Owner. Submit all documentation regarding initial exposure assessments, negative exposure assessments, and air-monitoring results.
 - 1. Sampling Prior to Asbestos Work Provide area air sampling and establish the baseline one day prior to the masking and sealing operations for each site.

Establish the background by performing area sampling in similar but uncontaminated sites in the building.

- 2. Sampling During Asbestos Work The PQP must provide personal and area sampling as indicated in 29 CFR 1926.1101 and governing environmental regulations. Breathing zone samples must be taken for at least 25 percent of the workers in each shift, or a minimum of two, whichever is greater. Air sample fiber counting must be completed and results provided within 24-hours (breathing zone samples), and 48 hours (environmental/clearance monitoring) after completion of a sampling period. In addition, provided the same type of work is being performed, provide area sampling at least once every work shift close to the work inside the enclosure, outside the clean room entrance to the enclosure, and at the exhaust opening of the local exhaust system. If sampling outside the enclosure shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, correct the condition(s) causing the increase, and notify the Owner immediately. The air sampling results must be documented on a Contractor's daily air monitoring log.
- 3. Final Clearance Requirements, NIOSH PCM Method For PCM sampling and analysis using NIOSH NMAM Method 7400, the fiber concentration inside the abated regulated area, for each airborne sample, must be less than 0.01 f/cc. The abatement inside the regulated area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 total f/cc, the asbestos fiber concentration (asbestos f/cc) must be confirmed from that same filter using NIOSH NMAM Method 7402 (TEM) at Contractor's expense. If any confirmation sample result is greater than 0.01 asbestos f/cc, abatement is incomplete and cleaning must be repeated at the Contractor's expense. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria must be done at the Contractor's expense.
- 4. Final Clearance Requirements, EPA TEM Method For EPA TEM sampling and analysis, using the EPA Method specified in 40 CFR 763, abatement inside the regulated area is considered complete when the arithmetic mean asbestos concentration of the five inside samples is less than or equal to 70 structures per square millimeter (70 S/mm). When the arithmetic mean is greater than 70 S/mm, the three blank samples must be analyzed. If the three blank samples are greater than 70 S/mm, resampling must be done. If less than 70 S/mm, the five outside samples must be analyzed and a Z-test analysis performed. When the Z-test results are less than 1.65, the decontamination must be considered complete. If the Z-test results are more than 1.65, the abatement is incomplete and cleaning must be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria must be done at the Contractor's expense.
- 5. Sampling After Final Clean-Up (Clearance Sampling) Provide area sampling of asbestos fibers and establish an airborne asbestos concentration of less than 0.01 fibers per cubic centimeter after final clean-up but before removal of the enclosure or the asbestos work control area. After final cleanup and the asbestos control area is dry but prior to clearance sampling, the PQP must perform a visual inspection in accordance with ASTM E1368 to ensure that the asbestos control and work area is free of any accumulations of dirt, dust, or debris. The asbestos fiber counts from

these samples must be less than 0.01 fibers per cubic centimeter or be not greater than the background, whichever is greater. Should any of the final samples indicate a higher value take appropriate actions to re-clean the area and repeat the sampling and analysis at the Contractor's expense.

- 6. Air Clearance Failure If clearance sampling results fail to meet the final clearance requirements, pay all costs associated with the required recleaning, resampling, and analysis, until final clearance requirements are met.
- N. Lock-Down Prior to removal of plastic barriers and after pre-clearance clean up of gross contamination, the PQP must conduct a visual inspection of all areas affected by the removal in accordance with ASTM E1368. Inspect for any visible fibers.
- O. Site Inspection While performing asbestos engineering control work, the Contractor must be subject to on-site inspection by the Owner who may be assisted by or represented by safety or industrial hygiene personnel. If the work is found to be in violation of this specification, the Owner or his representative will issue a stop work order to be in effect immediately and until the violation is resolved. All related costs including standby time required to resolve the violation must be at the Contractor's expense.

3.3 CLEAN-UP AND DISPOSAL

- A. Housekeeping: Essential parts of asbestos dust control are housekeeping and clean-up procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. DO NOT BLOW DOWN THE SPACE WITH COMPRESSED AIR. When asbestos removal is complete, all asbestos waste is removed from the work-site, and final clean-up is completed, the Owner will attest that the area is safe before the signs can be removed. After final clean-up and acceptable airborne concentrations are attained but before the HEPA unit is turned off and the enclosure removed, remove all pre-filters on the building HVAC system and provide new pre-filters. Dispose of filters as asbestos contaminated materials. Reestablish HVAC mechanical, and electrical systems in proper working order. The Owner will visually inspect all surfaces within the enclosure for residual material or accumulated dust or debris. The Contractor must re-clean all areas showing dust or residual materials. If re-cleaning is required, air sample and establish an acceptable asbestos airborne concentration after re-cleaning. The Owner must agree that the area is safe in writing before unrestricted entry will be permitted.
- B. Title to Materials All waste materials, except as specified otherwise, become the property of the Contractor and must be disposed of as specified in applicable local, State, and Federal regulations and herein.
- C. Disposal of Asbestos
 - 1. Procedure for Disposal Coordinate all waste disposal manifests with the Owner. Collect asbestos waste, contaminated waste water filters, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber-proof, waterproof, non-returnable containers (e.g. double plastic

bags 6 mils thick, cartons, drums or cans). Wastes within the containers must be adequately wet in accordance with 40 CFR 61-SUBPART M. Affix a warning and Department of Transportation (DOT) label to each container including the bags or use at least 6 mils thick bags with the approved warnings and DOT labeling preprinted on the bag. Clearly indicate on the outside of each container the name of the waste generator and the location at which the waste was generated. Prevent contamination of the transport vehicle (especially if the transport vehicle is a rented truck likely to be used in the future for non-asbestos purposes). These precautions include lining the vehicle cargo area with plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or Stateapproved asbestos landfill. For temporary storage, store sealed impermeable bags in asbestos waste drums or skids. An area for interim storage of asbestos waste-containing drums or skids will be assigned by the Owner or his authorized representative. Comply with 40 CFR 61-SUBPART M. State, regional, and local standards for hauling and disposal. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags must remain in the drum and the entire contaminated drum must be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums must wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

END OF SECTION 028200

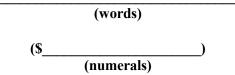
Bid Form

SECTION 00400 BID FORM

Charles Santore Clerk of the Works Bedford County Public Schools 310 South Bridge Street Bedford, VA 24523

Gentlemen:

The undersigned, having visited and examined the site and having carefully studied the Drawings and Project Manual for the Bedford Primary School Roof and HVAC Replacement project, hereby proposes to furnish all labor, equipment, materials, and services and to perform all operations necessary to execute and complete the Work required for the Project, in strict accordance with the Drawings and Project Manual prepared by Wiley|Wilson, dated *February 14*, 2019, together with the addenda issued during bidding period and acknowledged below subject to the terms and conditions of the agreement for the lump sum amount of



which shall be referred to hereinafter as the Base Bid. *Please note that the Base Bid listed above includes the following unit price item. If subsequent testing by the Owner reveals that it does not contain asbestos, this item will be removed from the scope of the contract and the contract amount will be adjusted according to the unit price listed below.*

Item		Unit	Unit Price	Total Price
	Removal and replacement of the approximately 850 square foot plaster ceiling from within the Boiler Room. The plaster ceiling has been found to contain asbestos and the contractor will be responsible for the abatement and	Lump Sum		
	removal of the plaster ceiling and replacement with a similar suspended gypsum drywall ceiling.			

The following items are anticipated to be required during the scope of the work, but the quantities are not known. Therefore unit prices have been provided. These items are not included in the Base Bid above and the contract amount will be adjusted through change orders based on quantities of the unit price items required to complete the work.

Item		Unit	Unit Price	Total Price
1.	Removal and replacement of wet existing rigid insulation.	Square		
		Foot		
2.	Removal and replacement of water damaged wood	Linear		
	blocking at roof	Foot		
3.	Removal and replacement of damaged curbs (beyond	Each		
	those associated with new mechanical units which are			

	included in the base bid)			
4.	Removal and replacement of nailers at roof	Linear		
		Foot		
5.	Replacement of floor tiles around unit ventilator cabinets	Square		
	to match adjacent floor	Foot		

The following addenda are hereby acknowledged:

Addendum Number:	Date Issued:

The base bid is founded upon furnishing equipment and materials of specified manufacturers. Equipment or materials of other manufacturers are offered as "or equals" or "Substitutes" as shown on Section 00400.3 Proposed "Or Equal" and/or "Substitute" Equipment and are not part of the base Bid Form. Owner will determine before Contract Award which, if any, "or equals" or "substitutes" that will be included in the Contract.

Award will be based upon the Base Bid, without consideration of "or equals" or "substitutes" or "Additive Alternate" items.

The Bidder agrees to furnish and install, in accordance with the Contract Documents, all items of equipment specified in the Major Equipment and Product Schedule. The equipment required under each section of the Specifications is to be furnished and installed in strict compliance with the requirements of the Contract Documents for the lump sum base bid price stated by the Bidder.

It is understood and agreed that the Owner, in protecting his best interest, reserves the right to:

Reject any or all bids,

Accept any bid at the Base Bid price, whereupon the Contractor shall furnish equipment and materials as specified, or

Accept any bid at the Base Bid price and, if equipment or materials of substitute manufacturers are offered, to accept any, none, or all of such offered "or equal" and/or "substitutes", which are approved, the Contract price being adjusted accordingly.

We are properly equipped to execute work of the character and extent indicated by the Bidding Documents and so covered by this Bid and will enter into agreement for the execution and completion of the Work in accordance with the Drawings and Project Manual and this bid; and we further agree that if awarded the Contract, we will commence the Work on the date stated in "Notice to Contractor to Proceed" and prosecute the Work and all obligations within 120 calendar days.

BEDFORD COUNTY PUBLIC SCHOOLS

BEDFORD PRIMARY SCHOOL - ROOF AND HVAC REPLACEMENT

COMM. NO. 218142.00

The following documents are attached to and made a condition of this Bid. Failure to comply with the submission of appropriate documentation may result in determination of a bidder as non-responsible and shall be cause for the bid to be rejected.

- **Bid Security** 1.
- 2. Section 00400.2 Major Equipment and Product Schedule
- Section 00400.3 Proposed "Or Equal" and/or "Substitute" Equipment 3.
- Section 00400.4 Contractor Qualifications 4.
- Contractor's License No.: 5.

Enclosed herewith is the following security, offered as evidence that the undersigned will enter into agreement for the execution and completion of the Work in accordance with the Drawings and Project Manual:

Cashiers Check for the Sum of	
Name of Bank	_
Bidder's Bond in Amount of	_
Bond Issued by	

The undersigned further agrees that in case of failure on his part to execute the said agreement within the 10 consecutive calendar days after written notice being given on the award of the Contract, the moneys payable by the securities accompanying this bid shall be paid to the Bedford County Public Schools as liquidated damages for such failure; otherwise, the securities accompanying this Bid shall be returned to the undersigned.

This Bid is subject to acceptance within a period of 90 days from this date.

Respectfully submitted,

	Contractor
	by
	Address
	Telephone number
Date	
Contractor's current Virginia license number	Code

WILEY|WILSON

BEDFORD COUNTY PUBLIC SCHOOLS BEDFORD PRIMARY SCHOOL – ROOF AND HVAC REPLACEMENT COMM. NO. 218142.00

SECTION 00400.2 MAJOR EQUIPMENT AND PRODUCT SCHEDULE

All items on the Major Equipment and Product Schedule shall be bid according to the following:

The Major Equipment and Product Schedule designates major equipment items to be provided. The bidder shall indicate which of the specified manufacturers/supplier's equipment it is offering to provide by circling one of the named manufacturers/suppliers listed. A named manufacturer/supplier for each identified major equipment item shall be circled, even if only one is specified.

If the bidder desires to propose a "or equal" and/or "substitute" for any named manufacturer/supplier of a specified item, it shall circle the named manufacturer/supplier (in the major equipment schedule) it is offering to provide and also shall write in the space/form provided the name of the offered "or equal" and/or "substitute" manufacturer/supplier and provide for such the price deduction resulting to the Owner upon the allowed use of the "or equal" and/or "substitute". Named manufacturers/suppliers are defined as those listed in the major equipment schedule. Or equal and/or substitute manufacturers/suppliers are defined as those proposed and written in by the bidder in the space so designated. Should the "or equal" and/or "substitute" manufacturer/supplier be determined "not equal" in the Owner/Engineer's discretion, the bidder must provide the named manufacturer/supplier circled in the major equipment schedule.

Should the bidder fail to indicate the named manufacturer/supplier on which its bid is based, or circle more than one named manufacturer/supplier per equipment item, the bid shall be deemed to have been based upon the first listed manufacturer in the Schedule, and the bidder, if awarded the contract, shall provide the first of the listed named manufacturers/suppliers for that item.

Equipment/Product	Named Manufacturer

BEDFORD COUNTY PUBLIC SCHOOLS BEDFORD PRIMARY SCHOOL - ROOF AND HVAC REPLACEMENT COMM. NO. 218142.00 SECTION 00400.3 PROPOSED "OR EQUAL" AND/OR "SUBSTITUTE" EQUIPMENT

Or equals and/or substitutes are offered for the Owner's consideration in accordance with the Modified Standard General Conditions and in accordance with the Virginia Public Procurement Act.

If a proposed "or equal" and/or "substitute" manufacturer/supplier is allowed by the Owner, the associated "deduct" will be subtracted from the amount of the successful bidder's base bid to determine the contract price.

Determination of the low bidder will be based on the base bid without consideration of any deductions resulting from bidder-proposed "or equal" or "substitute" equipment. Allowance of an "or equal" and/or a "substitute" manufacturers/suppliers does not constitute a waiver of the specifications or of any other requirements of the Contract Documents.

Unless otherwise stated, all proposed deducts for "or equal" and/or "substitute" manufacturers/suppliers are deducts for the equipment associated with the base bid only.

Within 7 calendar days of bid opening, the apparent low bidder shall provide a "qualifications" package for all proposed "or equal" and/or "substitute" items proposed by Bidder. The qualification packages will be used solely by the Owner to evaluate, on an administrative level, proposed "or equal" and/or substitute items. If Owner elects to allow specific "or equal" and/or "substitute" item(s), this action does not constitute a waiver of the specifications or of any other requirements of the contract documents, and formal submittal and acceptance of said items will be in accordance with the Modified Standard General Conditions and the Contract Documents.

Equipment Specification Name And Number	Indicate As "E" For Equal Or "S" For Substitute*	Manufacturers Name, Catalog Or Model No. Of "Or Equal" Or "Substitute" Offered	Amount Of Add Or Deduct From Base Bid Price
1.			\$
2.			\$
3.			\$
4.			\$
5.			\$

Project Name: Bedford Primary School Roof and HVAC Replacement

* Failure to indicate "E" or "S" will result in that item being treated as a proposed substitute.

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BEDFORD COUNTY PUBLIC SCHOOLS

BEDFORD PRIMARY SCHOOL - ROOF AND HVAC REPLACEMENT

COMM. NO. 218142.00

The above listed "or equal" and/or "substitute" items are hereby guaranteed to perform in all respects the functions of the items of specified manufacturers and in accordance with the Modified Standard General Conditions, and it is fully understood that approval of such items is contingent upon this guarantee.

Contractor's Name:	
Contractor's Signature:	
Current License Number:	Code:
Date:	

SECTION 00400.4 CONTRACTOR QUALIFICATIONS

The Bidder shall state here what previous municipal type work he has performed similar to that contemplated in this contract, and give references that will afford the Bedford County Public Schools an opportunity to judge experience and skill of proposed Contractor and all subcontractor(s). The Contractor shall list five (5) projects of similar size and dollar value completed within the last five (5) years where bidder was the General Contractor. If proposing to use subcontractors or joint partners to complete more than 20 percent of the work by partnership, joint venture, or subcontract means, then provide project experience information as outlined above for all contractors, partners, or subcontractors.

Submittal of this information on other standard forms containing all the information noted below is acceptable.

Location	Dollar Value	Year Completed	Owner/ Engineer	Phone No.	Contact Person	Type of Work Done

Failure to provide satisfactory evidence of experience may cause the Bid to be rejected.

AHERA 3 Year Re-Inspection

Bedford Primary School

AHERA 3 Year Re-inspection June 12, 2017

In accordance with paragraph 763.85 (b)(1) of the Asbestos Hazard Emergency Response Act (AHERA), the Bedford Primary School was re-inspected on May 31, 2017. The Re-inspection was conducted by Mr. Chad Bowman, a certified and licensed asbestos Inspector, under the rules established by the United States Environmental Protection Agency and the Commonwealth of Virginia Department of Professional and Occupational Regulation. Mr. Bowman's Virginia Inspector license number is 3303002995.

Only the asbestos containing materials originally identified or assumed by BCM Potomac, Inc. in the initial inspection of July 18, 1988 were re-inspected. During this inspection all materials were visually inspected and touched to determine their condition.

The 9"x9" & 12"x12" floor tile and associated mastics located throughout the school and the linoleum located in the mobile units remains non-friable and in excellent condition.

The pipe fittings in the boiler room and the adjacent bathroom, and the boiler insulation in the boiler room are in excellent condition with no visible damage. The assessment for this material remains ACBM with potential for damage.

The asbestos containing materials are being maintained in accordance with the Management Plan and the laws of Virginia and the United States Environmental Protection Agency. Precautions are being taken to prevent fiber releases and to ensure a safe environment for the students and faculty.

A copy of this inspection must be filed with and become a part of the school's Management Plan. The next six month surveillance is due November 30, 2017 and the next three year re-inspection is due no later than May 31, 2020.

h.t

Chad Bowman VA Inspector # 3303002559

Envirosciences, Inc. Test Results

EnviroSciences, Inc.

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Asbestos Identification Report of Analysis	1	R.A.JORDAN P.O. BOX 19 MINT SPRING	7	
Sample ID	SAMPLE 1 1	SAMPLE 2 2	SAMPLE 3 3	SAMPLE 4 4
Laboratory Sample Code	850275	850276	850277	850278
Analytical Method 1.Polarized light Microscopy(PLM) 2.PLM + Dispersion staining 3.X-ray diffraction	2	2	2	- 2
Gross Sample Appearance 1.Homogeneous, fibrous 2.Homogeneous, nonfibrous 3.Heterogeneous, fibrous 4.Heterogeneous, nonfibrous 5.Heterogeneous, mixed	5	5	5	5
Sample Treatment 1.Homogenized 2.Untreated 3.Other,(specify)	2	2	Z	2
Percent Asbestos Present 1.Amosite 4.Anthophyllite 2.Chrysotile 5.Tremolite 3.Crocidolite 6.Actinolite	(2) 4	(2) 39 (1) 8	(2) 6	(2) 38 (1) 15
Total Asbestos Present (%) Other Fibrous Material Present(%) 1.Fiberglas 4. 2.Mineral Wool 5. 3.Cellulose 6.	4%	47%	6%	53%
Nonfibrous Material Present(%) 1.Filler Binder 5.Paint 2.Perlite 6.Clay 3.Plaster 7.Concrete 4.Vermiculite	<pre>(3) 42 (1) 14 (2) 39 (5) 1</pre>	(1) 6 (6) 47	(3) 44 (1) 7 (2) 42 (5) 1	(1) 6 (6) 41
Cumment sample 3: " -LIBR S	NTR CLNG STORAGE TA TORAGE RM CK INSULAT	ANK INSULAT CLNG FION	ION	

EnviroSciences, Inc._

			(A)	
Asbestos Identification Report of Analysis	Client: R.A.JORDAN ENTERPRISES P.O. BOX 19 MINT SPRING, VA 24463			
Sample ID	SAMPLE 1 5	SAMPLE 2 6	SAMPLE 3 7	SAMPLE 4
Laboratory Sample Code	850279	850280	850281	
Analytical Method 1.Polarized light Microscopy(PLM) 2.PLM + Dispersion staining 3.X-ray diffraction	2	2	2	-
Gross Sample Appearance 1.Homogeneous, fibrous 2.Homogeneous, nonfibrous 3.Heterogeneous, fibrous 4.Heterogeneous, nonfibrous 5.Heterogeneous, mixed	5	5	5	
Sample Treatment 1.Homogenized 2.Untreated 3.Other,(specify)	2	2	2	
Percent Asbestos Present 1.Amosite 4.Anthophyllite 2.Chrysotile 5.Tremolite 3.Crocidolite 6.Actinolite	(2) 5	(2) B (1) 45		
"otal Asbestos Present (%))ther Fibrous Material Present(%)	5%	53%	, 0%	
1.Fiberglas 4. 2.Mineral Wool 5. 3.Cellulose 6.			(3) 54 (2) 35	
Ionfibrous Material Present(%) 1.Filler Binder 5.Paint 2.Perlite 6.Clay 3.Plaster 7.Concrete 4.Vermiculite	(3) 49 (1) 3 (2) 43	(1) B (6) 39	(1) 10 (5) 1	
omment sample 1:BEDFORD PRIMARY-CLINIC omment sample 2: " -BR BOI omment sample 3: " -CLNG T	LER INSULA	AT I ON		

Responses to Bidder Questions

Bidder Questions & Responses

 Bidder Question: Electrical service voltage on MDP is 120/240V 3Ph 4W, Delta. Panel AC is 120/240V 3Ph, 4W Delta. Panel LA is 120/240V 3Ph 4W Delta and Panel PA is 120/208V (as stated on name plate), panel schedule states panel is 240V. Is Panel PA 208V? Should it be a 240V panel? Please advise.

Wiley|Wilson Response: Panelboard type NQOD is rated for a maximum of 240V. No further action required.

2. Bidder Question: Class 17 has a large unit ventilator in the ceiling that is to be demolished. Will the County accept patching of the ceiling or will a new ceiling for the entire classroom be required? Does the County have attic stock that can be used to match the existing?

Wiley|Wilson Response: The contractor is responsible for removing and reinstalling ACT ceilings for work required. If the unit is located above a hard ceiling, the contractor may cut and patch the ceiling as necessary in order to install the unit.

3. Bidder Question: During the pre-bid, it could not be determined if floor tile was installed under the unit ventilators to be demolished in Area A. Should we include patching of the floor tiles in our bid? If so, does the County have attic stock of floor tiles to match existing?

Wiley|Wilson Response: The contractor is responsible for replacing any damaged or additional tiles around the unit ventilators. We asked the Principal during the Pre-Bid meeting if they have any additional floor tiles and she stated that she was not aware of any.

4. Bidder Question: The drawings state that the 6" concrete equipment pad is to remain in the location of the boilers. There did not appear to be a concrete equipment pad in place. Please advise.

Wiley|Wilson Response: Contractor shall provide a 6" concrete pad constructed with 4,000 psi compressive strength concrete reinforced with 6x6 W4.0xW4.0 WWF and $#4 \times 5$ " long vertical dowels drilled and installed 3" into the existing concrete slab with Hilti HIT-HY 200 adhesive spaced at 18" oc both each direction. The concrete equipment pad shall extend a minimum of 6" beyond the edge of the new boiler units in each direction.

5. Bidder Question: Does the County want the recovered refrigerant from the existing HVAC equipment? If so, will they be providing the tanks?

Wiley|Wilson Response: Yes, the contractor shall recover and filter the refrigerant and store it in Owner provided tanks following all federal, local and state regulations.

6. Bidder Question: Drawing M-002 states that the controls for all new equipment shall be Honeywell Niagara System but also states that standalone controllers for boilers, RTU's, unit ventilators, and ducted concealed split systems are to be provided. What is the intent?

Wiley|Wilson Response: The equipment is to operate by factory provided standalone controllers and be monitored by the Honeywell Niagara System.

7. Bidder Question: The asbestos report does not appear to have been included in the project manual. Can this be provided?

Wiley|Wilson Response: Asbestos testing results and re-inspection reports provided by Bedford County Public Schools have been attached to the Addendum.

8. Bidder Question: Bid form ask for (00400.3) proposed or equal equipment. Can this be sent to you after bid delivery? This kind of info is usually sent the next day or 24 hours. This is usually sent to us by mechanical subcontractor after the flurry of last minute bids.

Wiley|Wilson Response: Provide completed Bid Form including sections 00400.3, and 00400.4 at time of bid submittal. Per the Bid Form, the base bid shall not include any consideration for "or equal" or "substitute" items. Since the items have been named in the contract documents, submittal of Section 00400.2 Major Equipment and Product Schedule is not required. Incomplete Bid Forms will be considered non-compliant.

9. Bidder Question: 003126-Existing Hazardous Material. Can asbestos survey be provided to GC's for review?

Wiley|Wilson Response: Asbestos testing results and re-inspection reports provided by Bedford County Public Schools have been attached to the Addendum.

10. Bidder Question: 070150.19-2-1.6G.1.a- Hazardous Material. Hazardous materials will be removed by Owner under a separate contract? Can this be clarified to what extent the Owner will handle? Is this all asbestos or just roofing related asbestos?

Wiley|Wilson Response: Contractor shall remediate any hazardous materials required to be removed as part of the Roof and HVAC Replacement. See specification section 003126 Existing Hazardous Material Information, and responses to other bidder questions.

11. Bidder Question: If GC is to be responsible for asbestos abatement, please provide report and abatement specifications.

Wiley|Wilson Response: See previous responses and attached Asbestos Remediation specification section 028200.

12. Bidder Question: Where ACT ceilings are being removed (M-105) to install mechanical equipment? Is this existing ceiling material to be reused? There are a couple locations that the ceilings will need to be completely removed for work to be done and new materials may not match existing.

Wiley|Wilson Response: The contractor is responsible for removing and reinstalling ACT ceilings for work required.

13. Bidder Question: Boiler room. Has plaster ceiling been tested for asbestos.

Wiley|Wilson Response: At the present time, no testing of the ceiling within the boiler room has been found. Bedford County Public Schools will have the ceiling testing prior to the start of the construction period to determine whether it contains asbestos. A unit price has been added to the bid form and shall be included in the base bid to remediate and replace this ceiling. If testing reveals that the ceiling does not contain asbestos, the contract price will be adjusted accordingly.

14. Bidder Questions: Per core sample taken at pre-bid; existing roofing system consist of metal form deck, poured gypsum type deck, full tapered expanded polystyrene (EPS) insulation, Ballasted EPDM. New assembly coverboard cannot be adhered directly to EPS. Please advise on gang fastening new coverboard thru existing EPS, gyp and metal form deck.

Wiley|Wilson Response: In lieu of adhering the coverboard, attach through insulation into deck below. Use fasteners suitable to meet requirements of the Performance Requirements in the specification. Install approved fasteners with plates into the coverboard panels, flush with the surface. Fasteners should be installed in strict compliance with the roof system manufacturer's installation recommendations and FMG Loss Prevention Data Sheet 1-29 to achieve wind-uplift performance.

15. Bidder Question: Core sample taken at RD was wet. Please advise on Unit Price for bid form to replace wet/deteriorated gypsum deck, metal form deck and insulation.

Wiley|Wilson Response: Please see revised Bid Form attached to this addendum.

16. Bidder Question: Roof Nav numbers are not available for recover applications into gypsum decks.

Wiley|Wilson Response: Remove the requirement for RoofNav Listing.

17. Bidder Question: Existing low power lines to the roof elevation are present. Disconnection of All power to the bldg. will be required at this area for safety concerns at area in question. Please advise.

Wiley|Wilson Response: We concur that power will need to be temporarily disconnected during re-roofing in the vicinity of the power lines. Contractor shall coordinate shut-off with Bedford County Public Schools in advance of shut-off and shall schedule the work to minimize the amount of time that the power is shut-off.

18. Bidder Question: Preparation for ReRoofing section- requires InfraRed Scan of existing roof. It was noted in prebid InfraRed was not required. Please advise if required.

Wiley|Wilson Response: InfraRed Scan will be required as stated in specification section 070150.19, 3.2, C.

19. Bidder Question: Will AC be required inside during disconnection of all HVAC units. Please advise.

Wiley|Wilson Response: No temporary AC is to be provided during construction.

20. Bidder Question: Unit Pricing is listed in the specifications but there are no unit prices listed on the bid form.

Wiley|Wilson Response: Bid form has been revised, see attached.

21. Bidder Question: Are the existing ceiling tiles in the vicinity of the proposed new units to be replaced?

Wiley|Wilson Response: The contractor is responsible for removing and reinstalling existing ACT ceilings for work required.

22. Bidder Question: Is there going to be a unit price for removal and replacement of wet insulation?

Wiley|Wilson Response: Bid form has been revised, see attached.

23. Bidder Question: The specs include both remove and salvage and remove and replace clauses but there is no list of items to be salvaged or replaced, can we clarify?

Wiley|Wilson Response: All electrical equipment that is to be removed will not be reused or salvaged later. All electrical feeders that are to be reused should be left in existing conduit and reconnected to new equipment in the exact same location. Circuit breakers that are to be reused must not be removed from their panel.

24. Bidder Question: When are the contract dates?

Wiley|Wilson Response: See revised Article 4.02.A of the *Modified Form of Agreement Between Owner and Contractor Stipulated Price* on the Addendum form for contract dates.

25. Bidder Question: What are the allowable work times?

Wiley|Wilson Response: Contractor can work from 7 am – 5 pm Monday through Friday and on Saturdays with prior approval (at least 48 hours) from Bedford County Public Schools.

26. Bidder Question: Who will pay for the Building Permits?

Wiley|Wilson Response: The contractor shall pay for all required permits.

27. Bidder Question: Is the roofing warranty of 20 years by the contractor or the roofing manufacturer or both?

Wiley|Wilson Response: The warranty shall come from the manufacturer and will cover all work as stated in sample warranty.

28. Bidder Question: Is the ballast to be disposed of by the contractor or stockpiled somewhere for use by BCPS?

Wiley|Wilson Response: Contractor shall remove and dispose of all ballast.

29. Bidder Questions: Are the curbs for the rooftop units to be re-used or replaced? We indicated that the proposed units were not the same size and the intent was to replace the roof curbs for the mechanical units.

Wiley|Wilson Response: The contractor shall provide new roof curbs.

30. Bidder Question: Who is responsible for replacing any damaged or additional floor tiles around the unit room ventilators in the building addition wing?

Wiley|Wilson Response: The contractor is responsible for replacing any damaged or additional tiles around the unit ventilators.

31. Bidder Question: Where is the control panel for the new mechanical units to be located?

Wiley|Wilson Response: The control panel shall be located in the boiler mechanical room.

32. Bidder Question: Please clarify notes 1 & 2 for DDC Control System Specification on sheet M-002? The notes seem to contradict each other.

Wiley|Wilson Response: The equipment is to operate by factory provided standalone controllers and be monitored by the Honeywell Niagara System.

33. Bidder Question: Note on A-101 indicates to removed and replace metal gravel stop for 68'-6", doesn't the roofer need to replace all gravel stops?

Wiley|Wilson Response: The note is intended to be a general note for the entire roof and not specific to that portion. Additionally this 68'-6" section of the roof has a concrete coping on parapet wall. At this location extend roof flashing membrane up and over concrete coping and install new metal coping.

34. Bidder Question: It is unlikely that the existing rigid insulation (see attached pic) is fully adhered to the metal deck. How can we attach the new fully adhered membrane system down?

Wiley|Wilson Response: See response to #14 above.

35. Bidder Question: Does the existing membrane need to be removed prior to installing the new roof?

Wiley|Wilson Response: Yes.

36. Bidder Question: Panel AC has a 100A Frame, I have spoken with a GE Breaker Rep and have been informed that a new 110A breaker will not fit in the existing Panel.

Wiley|Wilson Response: 100A circuit breaker is to be provided instead of 110A breaker so that it can fit in existing Panel AC for RTU-1.

37. Bidder Question: On sheet M-501 it notes that a 1" insulated panel is to be used to blank off portion of existing wall louver not used for outside air. Can a product manufacturer of type be provided for this? Or can GC just use a 1" insulated panel by any manufacturer?

Wiley|Wilson Response: There is no specific product manufacturer selected for this 1" insulated panel. The contractor may submit product data sheet from any manufacturer for review and approval.

38. Bidder Question: Are there existing ACT or some type ceilings in this project?

Wiley|Wilson Response: Yes, there are ACT ceiling in the classrooms. The contractor is responsible for removing and reinstalling ACT ceilings for work required. If any of the units are located above hard ceilings, the ceilings will need to be cut and patched by the contractor as necessary to install the mechanical unit.

39. Bidder Question: Are ceilings to be removed and reinstalled for mechanical work to be done per sheets M-101 thru M-105?

Wiley|Wilson Response: The contractor is responsible for removing and reinstalling ACT ceilings for work required. If any of the units are located above hard ceilings, the ceilings will need to be cut and patched by the contractor as necessary to install the mechanical unit.

40. Bidder Question: Schedule calls out Trane or Mitsubishi on equipment on rooftop unit, unit ventilator, condensing unit, concealed unit and heat pump. Will other manufacturers be allowed to be used? Help me out, I went to 6.05 of Modified General Conditions and to be honest with you there was just to many if's, and's and buts for me to determine if other equipment can be used. Just looking for some help here.

Wiley|Wilson Response: Substitutions may be acceptable provided the submitted units are equivalent in performance to those specified. Additionally, for the Rooftop Units,

the proposed substitute units must be the same or less weight than the listed Rooftop Units. The base bid should not include any "or equal" or "substitute" items, but the contractor may complete section 00400.3 of the Bid Form for consideration of any proposed substitute items.

41. Bidder Question: Will section 00400.2 and 00400.3 pages need to be turned in with bid? Can this be given to you next day or after selected GC?

Wiley|Wilson Response: Provide completed Bid Form including sections 00400.3, and 0400.4 at time of bid submittal. Per the Bid Form, the base bid shall not include any consideration for "or equal" or "substitute" items. Since the items have been named in the contract documents, submittal of Section 00400.2 *Major Equipment and Product Schedule* is not required. Incomplete Bid Forms will be considered non-compliant.

42. Bidder Question: Are the insurance requirements listed in Section 000525 Contract Inserts required for this project?

Wiley|Wilson Response: The contractor shall secure and provide insurance for automobile liability, general liability, and worker's compensation insurance in the amounts indicated in the Contract Inserts section of the project manual. The contractor is not required to have professional liability insurance for this project.