Abatement Design for Asbestos-Containing, Mold-Impacted, and Lead-Containing Building Materials

Southport Former City Hall

Southport, North Carolina

April 25, 2024 | Terracon Project No. K6247038

Prepared for:
HICAPS
Greensboro, NC

Prepared by:
Terracon Consultants, Inc
Wilmington, NC

Amy DeSaix, CIEC, REM
NC Asbestos Designer No. 40502

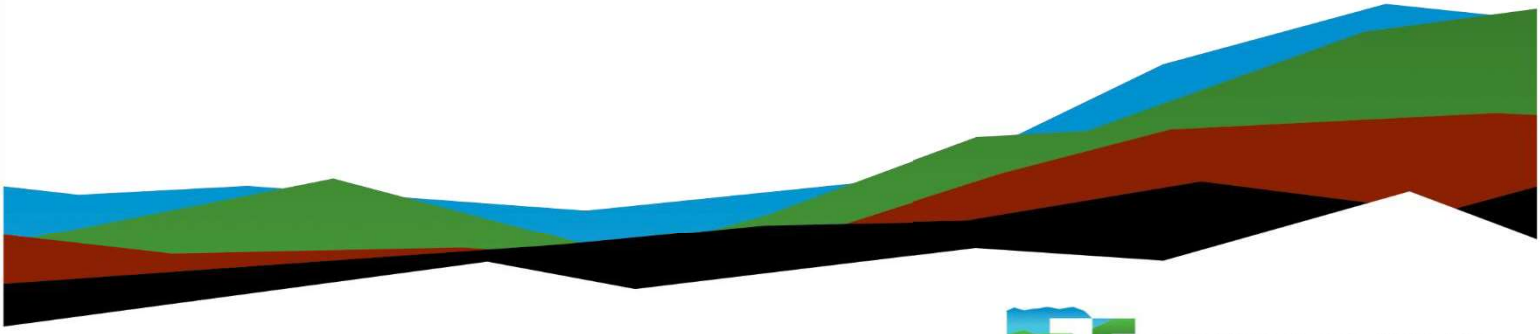

TABLE OF CONTENTS

ATTACHMENTS:

Visual Assessment Certification Form
Limited IEQ Assessment Report, October 27, 2023.
Asbestos and Lead Paint Inspection Report, dated April 2024.
Abatement Figure

ABATEMENT DESIGN FOR ASBESTOS-CONTAINING, MOLD-IMPACTED, AND LEAD-CONTAINING BUILDING MATERIALS

Southport Former City Hall
Southport, North Carolina
Terracon Project No. K6247038
April 25, 2024

1.0 GENERAL INFORMATION

The scope of this project includes the abatement of asbestos-containing materials and mold-impacted materials, which may also be lead-containing, from the Southport Former City Hall located at 201 E. Moore Street in Southport, North Carolina. The building was reportedly constructed in 1854 as the County Courthouse and was later renovated to include the two rear wings. The building reportedly contains a new asphalt shingled pitched roof. The building is two-story and consists of approximately 8,500 square feet of space. The building is listed on the National Register of Historic Places as Old Brunswick County Courthouse (BW0007). The building is currently semi-occupied with furniture and objects from prior use by the Town of Southport. One office and the vault were inaccessible at the time of the assessment and abatement requirement are assumed for those rooms.

This abatement design addresses the removal of asbestos-containing materials and mold-impacted building materials, in addition to the disturbance of lead-containing paints.

Mold-impacted materials, lead-containing paints (LCP), and asbestos-containing materials (ACM) were identified in the following reports which have been produced by Terracon under separate covers:

- Limited IEQ Assessment Report, Southport Old City Hall, dated October 27, 2023.

- Southport Former City Hall Asbestos and Lead Paint Inspection Report, dated April 2024.

During our site visits, Terracon observed apparent water damage and suspected fungal growth on ceiling tiles, wood panel ceiling, gypsum wallboard, plaster walls, wood window frames, wainscoting, carpeting, as well as efflorescence on

concrete masonry unit (CMU) walls in numerous locations throughout the building. Some of the impacted materials are also asbestos and/or lead-containing materials. The extent of the renovation is unknown for the purposes of this document and clarification to the work scope may be provided in a separate document by the Owner. However, this scope includes removal of identified asbestos and mold impacted materials on the interior of the structure. Future scopes of work which would impact exterior ACM or LCP should follow the below ACM and LCP practices.

1.1 ASBESTOS-CONTAINING MATERIALS (ACM)

Terracon conducted an asbestos inspection as a part of this project. Please refer to the reports listed in Section 1.0 for information on ACM and other hazardous building materials. If mold-impacted materials are ACM, the abatement procedures included in Section 2.0 are required to be followed. The Contractor shall contact the Designer immediately to arrange for asbestos abatement monitoring.

1.2 GENERAL GUIDELINES FOR MOLD

These guidelines are for the protection of those performing the clean-up and removal of materials impacted with mold growth, and to prevent, to the extent encountered, the spread of mold spores to the rest of the building from remediation/cleaning activities. These guidelines have been developed using the American Industrial Hygiene Association (AIHA) *Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings – AIHA Guideline 3-2004, Recognition, Evaluation, and Control of Indoor Mold*, 2008, and the American Conference of Governmental Industrial Hygienists (ACGIH), *Bioaerosols: Assessment and Control, 1999*.

Molds are ubiquitous to the environment and have somewhat specific requirements for survival and growth. Elevated mold concentrations in indoor environments occur when both moisture and a food source are present. Indoor food sources for mold growth can include organic materials such as those resulting from a flood or sewer back up or building materials high in cellulose such as, but not limited to, carpet backing, drywall paper, or ceiling panels. Moisture sources in buildings can occur because of leaks from water or sewer lines, moisture intrusion through walls and foundations, or as condensation in heating, ventilating, and air conditioning (HVAC) systems. In some areas of the United States, relative humidity during certain times of the year is high enough

to serve as a moisture source. In order to reduce the potential occurrence or recurrence of mold growth in indoor environments, sources of indoor moisture must be eliminated or controlled.

The results, findings, and conclusions expressed in this report are based on conditions during our 2023 and 2024 sampling events. Many factors such as weather conditions, building occupancy, ventilation patterns, and seasonal variations in mold levels can affect the conditions. The information contained in this report should not be relied upon to represent conditions that existed previously or at a later date. Terracon does not warrant the services of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied is made.

The cleanup activities should conform to the following general guidelines. Remediation activities will be conducted at a date and time to be coordinated with and approved by the Owner.

The scope of work includes the removal and/or cleaning of water-damaged and fungal-impacted ceiling tiles, plaster walls, gypsum board walls and ceilings, CMU walls, carpeting and wood windows, doors, and ceiling and wall paneling, as well as disinfecting mold-impacted surfaces. The scope of work also includes removal and disposal of furniture, objects and belongs in the structure. This scope does not include remediation activities associated with the heating, ventilation, and air conditioning (HVAC) and associated supply and return ductwork due to the potential replacement of the system, to be determined by the client and Owner. If the existing HVAC system remains, cleaning and replacement of HVAC system components would be required as part of mold remediation.

1.3 PROJECT MODIFICATION

The consultant, on an individual basis, will consider modifications designed to expedite or enhance the fungal remediation and/or asbestos abatement procedure. The consultant must approve deviations from the procedures described.

1.4 SITE REQUIREMENTS

A. The Remediation/Abatement Contractor is responsible for all costs, including additional visits, should the Designer and/or the air-monitoring firm determine that the Contractor failed a final inspection. Notification and scheduling of the final inspection during the project is the responsibility of the Contractor. The Contractor will allow a minimum notice of twenty-four (24) hours unless the Designer and the Contractor agree upon a different time frame.

B. The Contractor shall coordinate all removal activities with the Owner and Designer. Owner shall have continuous use of areas not included in the scope of this project.

C. The Contractor shall be responsible to adhere to any and all security requirements imposed by HICAPS (Client) and the Town of Southport (Owner).

D. Approved working hours for this project are 7:00 AM to 7:00 PM, Monday through Friday. Any variance to these working hours must be approved by the Owner.

1.5 SUBMITTALS

Prior to start of work, as a minimum, one copy of the following is to be provided to Client by the Contractor:

A. Worker documentation, including evidence that all workers have received proper training and are accredited and registered as required by regulations; respiratory fit test documentation for each worker who is to be at the jobsite.

B. Safety Data Sheets (SDS) to be utilized on this project.

C. Mold Remediation Work Plan

D. NADCA Certification

E. Any other programs or training as outlined by the OSHA and EPA standards applicable to this work.

F. Asbestos Removal Permit from the North Carolina Health Hazards Control Unit (HHCU).

1.6 MEETINGS

A preconstruction meeting is recommended to be held prior to starting the project. The purpose of the preconstruction meeting is to finalize the work schedule and review the requirements of the job. The successful Contractor and all onsite supervisors are required to attend. The Contractor's representatives at this meeting must be able to commit to schedule and project requirements that will be addressed at this meeting.

1.7 PERSONNEL

A. The Contractor shall have at least one employee on the job site in either a foreman or supervisor position that is bilingual in the appropriate languages when employing workers who do not speak fluent English. During asbestos abatement, this person must be a competent person, as defined in the OSHA asbestos standard 29 CFR 1926.1101 and be employed by the Asbestos Abatement Contractor.

B. The Contractor is responsible for supplying the required number of workers to complete the project within the designated project schedule.

C. The Contractor is responsible for the behavior of workers within his employment. If at any time during the contracted work, any of his employees are judged to exhibit behavior unfitting for the area or judged to be a nuisance by the Owner or Designer, the Contractor shall remove them immediately from the project.

D. The Contractor shall be responsible for compliance with the following concerning employee behavior:

1. Under no circumstances are alcohol, drugs, or any other type of controlled substances permitted on the site.

2. Firearms are not permitted on the site.

3. All workers are restricted to the construction project site only.

4. All vehicles must be parked in areas approved by the Owner.

5. All workers must conform to the following basic dress code when in public areas of the project confines: long pants, shirts, no tank tops, no shorts, no bare backs.

6. The Contractor is responsible for disposal of all trash brought on the site by his/her employees; including drink cans, bottles or other food containers and wrappers.

7. Eating, drinking, and smoking are not allowed in the containment area(s).

E. Failure to adhere to these rules could result in criminal prosecution and/or removal from the project site.

1.8 SAFETY PRACTICES

The Contractor is responsible for OSHA safety practices associated with worker protection. The Contractor shall ensure that electrical and fire hazard safety protocols are followed in compliance with typical construction regulations. In addition, the Contractor will implement any additional safety rules and required personal protective equipment (PPE) associated with the project areas as established by the owner's work practice.

The Contractor will comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service. The Contractor will provide and maintain temporary fire protection during the project in accordance with requirements of the local protection code. The electrical power to circuits within mold remediation and asbestos abatement work areas shall be de-energized and the circuit breaker or other energy isolating device will be locked-out and tagged prior to the commencement of removal operations. Ground fault circuit interrupter (GFCI) devices shall be equipped on all electrical devices and tools. The GFCI shall be placed as close to the tool as feasible. Should lock-out/tag-out policies disrupt building operations, the contractor shall make arrangements for the temporary power to be used by the building and coordinated with building project personnel.

The Contractor will provide Type-"A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical, grease, oil, or flammable liquid fires. In other locations, provide Type-"ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA-recommended types for the exposures in each case.

A minimum of one first aid kit shall be located in the clean rooms. Additional first aid kits as the Contractor feels is adequate or is required by law shall be located throughout the work areas.

It is the Contractor's responsibility to ensure that workers on ladders or other elevated platforms should be safe and secure from slipping or falling.

1.9 ACCESS TO WORK AREA

Site access will be limited to areas necessary to accommodate remediation and asbestos abatement, where applicable. The Contractor will coordinate location of access and placement of equipment, vehicles, etc. with the building owner or representative.

A secure work area will be established. Only licensed/registered individuals qualified to wear respiratory protection and/or perform asbestos removal activities will enter the secured work area during the project. The Contractor will ensure that access to the work area is monitored.

Access to the regulated areas shall be through a single decontamination system. All other means of access (doors, windows, hallways, etc.) shall be blocked or locked so as to prevent entry to or exit from the regulated area. The only exceptions to this rule are the waste load out, which shall be sealed except during the removal of containerized asbestos waste from the regulated area, and emergency exits in case of fire or accident. **Emergency exits within the work area shall <u>not</u> be locked from the inside; however, they shall be sealed with polyethylene sheeting and tape until needed. Communicate emergency egress procedures and locations with all employees in the work area. Note, that the exterior stairways to the second floor should be addressed by the contractor for safety prior to use as an emergency access.**

1.10 TOILET FACILITIES

The Contractor shall provide temporary toilet facilities to be used by Asbestos Abatement Contractor's employees as well as the employees of the air monitoring firm. Contractor shall clean facilities on a daily basis.

1.11 CONTRACTOR RESPONSIBILITIES

In the work area, the Contractor will assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to work practices, transport, disposal, and protection of workers, visitors to the site and persons occupying areas adjacent to the site. The Contractor will hold HICAPS and Terracon Consultants, Inc. harmless for failure to comply on the part of himself, his employees, or his subcontractors. Federal, state, and local regulations include, but are not limited to, the following:

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

1. Respiratory Protection: Title 29, Part 1910, Section 134 of the Code of Federal Regulations

2. Access to Employee Exposure and Medical Records: Title 29, Part 1910, Section 2 of the Code of Federal Regulations

3. Hazard Communication: Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

4. Specifications for Accident Prevention Signs and Tags: Title 29, Part 1910, Section 145 of the Code of Federal Regulations.

1.12 MOVEABLE/NON-MOVEABLE OBJECTS

The Contractor will clean and remove wooden or metal furniture and equipment in the work areas prior to building material abatement. These furnishings shall be cleaned using high efficiency particulate air (HEPA) vacuuming and wet wiping. The contents shall be moved to an off-site area (to be designated by the Owner) for the duration of the removal and disinfecting procedures. If an off-site location is not available, following abatement of a suitable area within the building, furnishings to be salvaged shall be re-located into the completed area.

Contents that will be removed and disposed, such as cloth items, paper, cardboard, and files, will be secured in opaque bags or wrapped in 6-mil polyethylene sheeting prior to disposal.

Additional information and/or confirmation pertaining to handling of items requiring salvage and disposal will be provided in an addendum.

2.0 ASBESTOS ABATEMENT

2.1 SCOPE OF WORK

A. Removal of ACM will be limited to materials within the interior of the structure and those materials on the exterior which require disturbance during renovation activities. **ACM locations are noted on the figures the Asbestos Inspection Report**.

B. Removal of NESHAP Category I and II non-friable ACMs and the OSHA-regulated material shall be performed using non-friable removal techniques. Removal of RACMs (regulated asbestos-containing materials) shall be performed using wet methods and HEPA-vacuums. Clean up of asbestos-containing debris shall be performed using wet methods and HEPA-vacuums. The Contractor shall adequately wet the ACMs in a Negative Pressure Enclosure (NPE). Each NPE where friable or non-friable removal is completed shall remain intact and under negative pressure until TEM clearance is achieved.

C. During this project, the NESHAP Category I non-friable ACMs present include:

- 9” x 9” Gray floor tile beneath carpet in the 1st floor original section
- 9” x 9” Black floor tile beneath carpet in the 1st floor original section
- 12” x 12” Gray streaked floor tile and mastic in the first and second floor
- Residual black mastic associated with the 12” x 12” off-white with gray streaks floor tile
- White bottom layer floor tile in the 2nd floor mechanical room

D. During this project, the NESHAP Category II non-friable ACMs that are present or are assumed present include:

- Addition windows – interior window glazing
- Original windows – residual caulking

E. During this project, the RACMs present include:

- CMU block surface filler
- Any NESHAP Category I or II ACM that becomes friable

F. During this project, the Category II non-friable ACMs with the potential to become RACMs include:

- Exterior stucco texture on original structure
- Exterior concrete panel at windows on additions

G. During this project the materials containing less than 1% asbestos include:

- Exterior caulking on stone window apron
- 12" x 12" Tri-beige floor tile mastic
- 2' x 4' large squiggle ceiling tiles
- 2' x 4' small squiggle ceiling tiles

2.2 PERSONNEL REQUIREMENTS

A. Supervisor

1. All supervisors shall be accredited by the North Carolina Health Hazards Control Unit (HHCU).

2. All supervisors on the project shall have a minimum of two years' experience in the administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc.

3. One supervisor shall be provided for every ten workers inside each containment. A minimum of one supervisor shall be provided per asbestos abatement work area.

B. Worker

1. All workers shall be accredited by the North Carolina HHCU.

C. Competent Person

1. A competent person, as defined in the OSHA asbestos standard 29 CFR 1926.1101, employed by the Asbestos Abatement Contractor must be outside each work area at all times to monitor activity, ensure containment security, provide information to visitors, and provide access to the work area.

2.3 SUBMITTALS

A. Prior to start of work one electronic copy of the following is to be provided to Terracon by the Contractor:

1. Worker documentation, including evidence that all workers have received proper training and are accredited and registered as required by regulations; respiratory fit test for each worker who is to be at the jobsite.

2. SDS's to be utilized on this project.

3. If ACM being abated for this project exceeds the NESHAP permitting requirements of 160 square feet, 260 linear feet, or 35 cubic feet, provide copies of Asbestos Permit Application and Notification for Demolition/Renovation (DHHS 3768), which provide written notice to all required agencies, including North Carolina HHCU, ten (10) working days prior to commencement of abatement activities.

4. Any other programs or training as outlined by the OSHA and EPA standards applicable to this work.

B. After work is completed, one electronic copy of the following is to be provided to Terracon by the Contractor:

1. Manifest: North Carolina Asbestos Waste Shipment Record (DHHS 3787) receipt from landfill operator which acknowledges the Asbestos Abatement Contractor's delivery(s) of waste material.

Include date, quantity of material delivered, and signature of authorized representative of landfill. Also, include name of waste transporter.

2. Daily Supervisor Log: A copy of all daily logs showing the following: name, date, entering and leaving time, company or agency represented, reason for entry for all persons entering the work area, employee's daily air monitoring data as required by the OSHA standard, and written comments by inspectors, industrial hygienists, designers, and visitors.

2.4 CONTINGENCY PLAN

A. Contingency Plan: Prepare a site-specific contingency plan for emergencies including: fire, accident, power failure, negative pressure system failure, supplied air system failure (if applicable), evacuation of injured persons for both life threatening and non-life threatening, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include in this plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing adequate medical attention in the event of an emergency. The plan will be completed prior to beginning any on-site work and shall be kept on-site at all times.

B. The Contractor shall post outside/in clean room of Personnel Decontamination Unit:

1. Telephone numbers and locations of emergency services including but not limited to fire, ambulance, hospital, police, power company, telephone company and the North Carolina HHCU.

2. A copy of SDS's for any chemicals used during the asbestos project.

3. The Contractor shall post warning signs in each appropriate language as per the OSHA 29 CFR 1926.1101 standard.

2.5 NOTICES

A. The Asbestos Abatement Contractor shall notify the following offices in writing within the time frame specified by the NESHAP regulations prior to beginning any asbestos removal operations.

1. State Agencies

   Health Hazards Control Unit
   North Carolina Department of Health and Human Services - OEEB
   Division of Public Health

   (Regular Mail)
   1912 Mail Service Center
   Raleigh, N.C. 27699-1912
   Telephone: (919) 707-5950
   Fax: (919) 870-4808

   (UPS, Fed Ex, etc.)
   Room D-1
   5505 Six Forks Road
   Raleigh, N.C. 27609-3806

2. Emergency Departments

   Notify the local emergency medical services, police and fire departments in writing of the type and scope of work being performed.

3. Licenses

   a. Maintain current licenses for Asbestos Abatement Contractor and accreditation for workers and supervisors as required by applicable State or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

   b. Asbestos Abatement Contractor is responsible for payment of all permit fees required for this project.

2.6 DECONTAMINATION UNIT

A. Provide separate personnel and equipment/loadout decontamination facilities when practical. Require that the personnel decontamination units be the only means of ingress and egress for the work area.

Require that all materials exit the work area through the equipment/loadout decontamination units. The contractor shall:

1. Provide a Personnel Decontamination Unit for each work area consisting of a serial arrangement of connected rooms or spaces, changing room, shower room, equipment room. Each shall be separated by a minimum of three curtain doorways. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose.

2. Provide an Equipment Decontamination Unit consisting of a serial arrangement of rooms, clean rooms, holding areas, and washrooms with each room separated by a minimum of three curtain doorways, for removal of equipment and material from work areas. Do not allow personnel to enter or exit work areas through equipment decontamination units.

3. Provide temporary lighting within decontamination units as necessary to reach an adequate lighting level.

4. Maintain changing floor sanitation by keeping it dry and clean at all times. Do not allow the overflow water from the shower to escape the shower room.

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

6. Provide hot and cold water, drainage and standard fixtures including an elevated shower head as necessary for a complete and operable shower. A water hose and bucket is not an acceptable shower. Hot water shall be supplied at a minimum temperature of 100 degrees Fahrenheit.

7. After completion of use, connections and fittings shall be removed by the Asbestos Abatement Contractor, without damage or alteration to existing water piping and equipment.

8. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.

9. Pump shower wastewater to drain. Provide 20 micron and 5 micron waste water filters in line to drain in work areas where asbestos abatement is conducted. Change filters daily or more often if necessary.

10. Construct a solid barrier on the public side of a visual barrier of opaque plastic sheeting. Construct barrier with wood or metal studs, max. 16 inches on center, covered with minimum 3/8 inch plywood.

B. Obtain all equipment or material from the work areas through the equipment decontamination units according to the following procedures:

1. When passing contaminated equipment, sealed plastic bags, drums, or containers into the washroom, close all doorways of the equipment decontamination unit, other than the doorway between the work area and the washroom. Keep all outside personnel clear of the equipment decontamination unit.

2. Once inside the washroom, wet-clean the bags and/or equipment.

3. When cleaning is complete, insert bagged material into a clean bag/drum during the pass between the washroom and holding area. Close all doorways except the doorway between the washroom and holding area.

4. Workers from the building exterior enter the clean room then the holding area to remove decontaminated equipment and/or containers for disposal. Require these workers to wear full protective clothing and respiratory protection as described in Section 3.11.

5. Bagged material shall be placed in a buggy lined with two layers of six-mil polyethylene sheeting (minimum). Once buggy is full, drape one layer of six-mil polyethylene sheeting over waste in preparation for transport.

2.7 WORK AREA PREPARATION

A. Completely isolate each work area from other parts of the building so as to prevent contamination beyond the isolated area.

B. Temporary facilities shall be addressed as outlined in Section 1.10.

C. The Contractor shall set up each work area, load out, and decontamination area in accordance with applicable regulations and industry standard practices. The decontamination facility outside of each work area shall consist of a change room, shower room and equipment room as described in Section 2.6.

D. Appropriate signage per 29 CFR 1926.1101 shall be posted at entrances, critical barriers, and barrier tape for each asbestos containment.

E. Full Containment Friable Removal – CMU block surface filler, floor tile and mastic, exterior stucco removal for window replacement and renovation work, and ceiling tiles

1. The Contractor shall wet clean and/or HEPA vacuum items and equipment in the work areas suspected of being contaminated with asbestos but not in direct contact with the asbestos material, and remove these materials for disposal as non-asbestos contaminated materials. Surfaces and items scheduled to be pre-cleaned include but are not limited to fan units, cinderblock walls, floors, ducts, louvers, HVAC intakes, fan units, etc.

2. Critical Barriers: The Contractor shall thoroughly seal the work areas for the duration of the work by completely sealing off all individual openings and fixtures in the work areas, including, but not limited to: heating and ventilation ducts, chases, doorways, corridors, windows, and other penetrations, with polyethylene sheeting taped securely in place. If the Contractor is using sealant materials to fill in small holes or cracks, the material shall have appropriate fire ratings.

3. Floors: Where floor abatement does not occur, apply two (2) layers of 6-mil (minimum) polyethylene plastic sheeting with joints

overlapped a minimum of 24 inches and taped securely in areas where asbestos-containing floor coverings are not scheduled to be removed. Plastic shall be carried up walls a minimum of 12 inches and secured.

4. Walls: Where wall abatement does not occur, apply two layers of 6-mil (minimum) polyethylene plastic sheeting with joints lapped a minimum of 24 inches and taped securely. Plastic shall be lapped over floor coverings and taped securely.

5. Ceilings: Where ceiling abatement does not occur, apply two layers of 4-mil (minimum) polyethylene plastic sheeting with joints lapped a minimum of 24 inches and taped securely. Plastic shall be lapped over wall coverings and taped securely.

6. Integrity of these seals shall be regularly checked and maintained by the Contractor.

7. Polyethylene plastic sheeting on floors, walls, and ceilings shall be installed in such a manner that they may be removed independently of each other and the critical barriers.

8. Entrances and exits from the work areas will have triple barriers of 6-mil (minimum) polyethylene plastic sheeting in a z-flap arrangement. Proper signage per 29 CFR 1926.1101 shall be posted.

9. The Contractor shall install negative pressure systems as outlined by section 2.8.

10. No water, liquid, or ACM may be left standing on the floor at the end of the workday.

11. The Contractor shall establish, and mark emergency and fire exits from the work areas. Emergency procedures shall have priority over established decontamination entry and exit procedures.

12. After work area preparation, the Contractor shall notify the Designer verbally with written follow-up that he is ready for a pre-work inspection.

F. Non-Friable, Non-Regulated Work Areas – Exterior window caulking on original window frames and interior glazing on windows in the addition. **Note: This scope may be performed at a later date following determination of renovation plan and schedule for the existing windows.**

1. At a minimum, a detached decontamination unit must be in place and operational prior to the start of removal operations. Subsequently, work can be performed while under containment for friable abatement.

2. Critical Barriers: The Contractor shall thoroughly seal the work areas for the duration of the work by completely sealing off all individual openings and fixtures in the work areas, including, but not limited to: heating and ventilation ducts, windows, and doorways with polyethylene sheeting taped securely in place. If the Contractor is using sealant materials to fill in small holes or cracks, the material shall have appropriate fire ratings.

3. Prior to removal, Contractor shall erect red asbestos barrier tape around the work areas to identify the regulated areas. Proper signage per 29 CFR 1926.1101 shall be posted. Only accredited asbestos workers will be allowed inside the regulated areas.

13. Drop cloths must be placed within work and staging areas, place one (1) layer of 6-mil (minimum) polyethylene plastic sheeting with joints overlapped 24 inches and taped securely.

14. Contractor shall wet clean and/or HEPA vacuum all items and equipment suspected of being contaminated with asbestos. Disposable items (paper, office supplies, etc.) can then be disposed of as non-asbestos contaminated.

15. If at any time during asbestos removal activities non-friable materials become friable, the Contractor shall immediately stop removal operations and construct a negative pressure enclosure per Paragraph E, above.

G. Non-Friable, Non-Regulated Work Areas – Floor tile and mastic (not applicable for ACM flooring under other non-ACM flooring)

1. Contractor shall install and seal critical barriers consisting of two (2) layers of 6-mil (minimum) polyethylene sheeting over doors, windows, and/or other openings in the work areas.

2. Entrances/exits from the work areas shall have triple barriers of 6-mil (minimum) polyethylene sheeting in a z-flap arrangement. Proper signage per 29 CFR 1926.1101 shall be posted.

3. An attached decontamination unit must be in place and operational prior to the start of removal operations.

4. A splashguard shall be installed on walls (that are not scheduled for abatement) a minimum of three (3) feet from floor.

5. Contractor shall use a HEPA filter exhaust unit in the vicinity of the work area. Filtered air must be exhausted outside of the building.

6. After work area preparation, the Contractor shall notify the Designer verbally with written follow-up that he is ready for a pre-work inspection.

7. If at any time during asbestos removal activities non-friable materials become friable, the Contractor shall immediately stop removal operations and construct a negative pressure enclosure per Paragraph E, above.

2.8 NEGATIVE PRESSURE SYSTEM

A. HEPA filter exhaust systems equipped with new HEPA filters shall be used. Exhaust equipment and systems shall comply with ANSI Z9.2-79 and shall be used according to manufacturer's recommendations.

B. A system of HEPA-equipped air filtration devices shall be configured so that a pressure differential is established between the work area and the surrounding area (-0.02 to -0.04" water column) as measured at any point inside or outside the containment area. **At least one continuous chart-recorded manometer shall be used to confirm**

this condition at each contained area. The HEPA-equipped air filtration devices shall be operated according to the manufacture specifications including regular air filter changes.

C. Additional air filtration devices shall be provided inside the work areas for emergency standby as well as for circulation of dead air spaces.

D. The pressure differential is maintained at all times after preparation is complete and until the final visual inspection and air tests confirm the area is clean and acceptable for occupancy and the Designer confirms verbally with written follow-up to discontinue the use of the negative pressure system.

E. Air shall be exhausted outside the building and away from pedestrian traffic areas. Any variations must be approved by the Designer. NAMs shall be located at the farthest possible location from the clean air intake(s).

F. The Asbestos Abatement Contractor shall check daily for leaks and log his checks in the bound logbook. This includes internal checks to air-moving devices.

G. There shall be a minimum of four air changes per hour in any containment.

H. The following formula shall be used to determine the approximate ventilation requirements for each work area using four air changes per hour (one air change every 15 minutes):

$$\text{Total air flow } ft^3/\text{min} = \frac{\text{Volume of work area (in } ft^3)}{15 \text{ min.}}$$

$$\text{Number of units needed} = \frac{\text{Total air flow } (ft^3/\text{min})}{\text{Capacity of unit } (ft^3/\text{min})} + (1 \text{ Unit for Safety Factor})$$

I. Prepare a contingency plan (as described in section 3.4) in the event of power failure and loss of negative pressure within the work areas. The contingency plan shall be approved by the Designer and Owner.

2.9 REMOVAL PROCEDURES

A. General

1. Prior to starting asbestos removal, the Contractor's equipment, work area and decontamination units will be inspected and approved by the Designer and/or Air Monitor.

2. All loose asbestos material removed in the work area shall be adequately wet with a surfactant, bagged, sealed, and labeled properly before personnel breaks or end of shift. The surfactant to be utilized with asbestos-containing materials identified as "chrysotile", "crocidolite", or types other than Amosite, shall consist of soapy water mixed in a proportion of two (2) fluid ounces of liquid soap to five (5) gallons of water. If previously unidentified ACM is identified to contain "amosite", the surfactant to be utilized with asbestos-containing materials identified as "amosite", shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, mixed in a proportion of one (1) fluid ounce to five (5) gallons of water or as specified by manufacturer.

3. All plastic sheeting, tape, cleaning material, clothing and all other disposable material or items used in the work area shall be packed into sealable plastic bags (6-mil minimum) and treated as contaminated material.

4. All material shall be double-bagged by placing in two 6-mil (minimum) polyethylene bags. The outer bag must be a clear 6-mil (minimum) polyethylene bag.

5. All excess water (except shower water) shall be combined with removed material or other absorptive material and properly disposed of as per EPA regulations. Asbestos Abatement Contractor shall not place water in storm drains, onto lawns, or into ditches, creeks, streams, rivers, or oceans.

B. Demolition of Non-Asbestos Containing Materials

1. The Contractor is responsible for the removal and/or demolition of all fixtures necessary to gain access to mold-impacted asbestos-

containing materials. Examples would include removal of gypsum wall board or wood wall paneling to access the asbestos CMU block surface filler. However, it should be noted, this removal should be performed under containment for friable abatement due to the unknown condition of the friable asbestos material behind the non-asbestos material. Objects within the building shall be wet cleaned and/or HEPA vacuumed and removed for disposal as non-asbestos contaminated materials or placed in the salvaged materials storage location.

C. Full containment removal of asbestos-containing CMU block surface filler, floor tile and mastic, exterior stucco removal for window replacement and renovation work, and ceiling tiles.

1. After work area preparation is complete, the Contractor shall adequately wet asbestos-containing materials with a fine mist of amended water. Care shall be taken not to over saturate and allow excess dripping to pool on floor of the containment.

2. The Contractor shall carefully remove manageable sections of asbestos-containing materials and place it directly into bags for disposal. Do not allow asbestos debris to accumulate on floor of the containment.

3. The Contractor shall continue misting asbestos-containing materials with amended water throughout the removal process.

4. The Contractor shall take all precautions necessary not to allow asbestos-containing material to free fall to the floor. Asbestos-containing materials may not free fall more than six feet.

5. The Contractor shall clean work area as required by section 3.10.

6. Following removal of asbestos-containing materials within a containment area, initial cleaning, and passing visual clearance inspection conducted by the air monitoring firm, the Contractor shall seal exposed surfaces in which asbestos-containing materials were removed with a penetrating type encapsulant. The encapsulant material shall be capable of being applied with airless spray equipment and able to withstand light impact or abrasion

without releasing fibers. The encapsulant will be allowed to dry thoroughly before final air clearance samples are collected.

H. Non-friable removal of asbestos-containing floor tile and mastic (not applicable for ACM flooring under other non-ACM flooring) and window caulking.

1. The Contractor may remove asbestos-containing flooring and mastic, using non-friable, non-regulated removal techniques where applicable. If at any time during removal, the flooring and associated mastic becomes friable in an area that is not already in a negative pressure enclosure, the Contractor will immediately stop removal activities and construct a negative pressure enclosure for the work area. Work and clearance will then be performed in accordance with full containment specifications.

2. Asbestos-containing mastic shall be removed using a low to no odor solvent. The Contractor shall use solvent sparingly for odor control.

3. Asbestos-containing window caulking shall be assumed to be within the window cavity. If additional window caulking is observed, it shall be removed as asbestos-containing, utilizing non-friable abatement methods.

D. Non-friable removal of <1% materials (floor tile mastic and exterior caulking).

1. Contractor may remove < 1% asbestos-containing materials, using non-friable, non-regulated removal techniques where applicable. If at any time during removal, the materials become friable in an area that is not already in a negative pressure enclosure, the Contractor will immediately stop removal activities and construct a negative pressure enclosure for the work area. Work and clearance will then be performed in accordance with full containment specifications.

2. Contractor shall clean work area as required by section 2.10.

2.10 PROJECT DECONTAMINATION

A. Carry out a first cleaning of all surfaces of the work area including plastic sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping and/or a HEPA filter vacuum until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces. Do not perform dry-dusting or dry-sweeping.

B. Equipment shall be cleaned and all contaminated materials removed before removing polyethylene from the walls and floors.

C. The Contractor shall replace all pre-filters and clean the inside and outside of the HEPA exhaust units.

D. After polyethylene sheets have been removed from walls, ceilings, and floors, but are still remaining on all windows, doors and the critical components, the Contractor shall clean all surfaces in the work areas, including ducts, electrical conduits, steel beams, roof deck, etc., with amended water and/or HEPA-filtered vacuum.

E. After cleaning the work areas, the Contractor shall allow the areas to thoroughly dry and then wet-clean and/or HEPA vacuum all surfaces in work areas again.

F. At the completion of the cleaning operation, the Contractor's supervisor shall perform a complete visual inspection of the work areas to ensure that the work areas are dust and fiber-free. If the supervisor believes he is ready for a final project decontamination inspection, he shall notify the asbestos air monitoring firm.

G. Final project decontamination inspection includes the visual inspection and air monitoring clearance.

H. Visual inspection for acceptance shall be performed after all areas are dry.

I. The air monitoring firm shall perform the final visual inspection and conduct the final air clearance. Any discrepancies found shall be documented in the form of a punch list.

1. Final air sampling shall not commence until the visual inspection is completed and passed. Final air clearances shall meet the requirements of Section 2.14.

2. If the air monitoring firm finds that the work areas have not been adequately decontaminated, cleaning and/or air monitoring shall be repeated at the Contractor's expense, including additional industrial hygiene fees, until the work area is in compliance.

3. After the work areas are found to be in compliance, all entrances and exits shall be unsealed and the plastic sheeting, tape and any other trash and debris shall be disposed of in sealable plastic bags (6 mil minimum) and disposed of as outlined in Section 2.13.

4. All HEPA unit intakes and exhausts shall be wrapped with 6 mil polyethylene before leaving the work area.

5. After the air monitoring firm has approved the final project decontamination and the Contractor has completed the tear down for occupancy by others, the Designer shall perform the project final inspection as outlined in the general conditions.

6. Any residual asbestos that may be present after removing critical barriers that in the Designer's judgment should have been cleaned during the pre-cleaning phase prior to installing critical barriers, shall be cleaned and cleared at the Contractor's expense.

7. There shall be appropriate seals totally enclosing the inspection area to keep it separate from clean areas or other areas where Abatement is or will be in progress. Once an area has been accepted and passed air tests, loss of the critical barrier integrity or escape of asbestos into an already clean area shall void previous acceptance and tests. Additional visual and final air clearance sampling shall be required at the Contractor's expense.

2.11 WORKER PROTECTION

A. General

1. Provide worker protection as required by OSHA, state, and local standards applicable to the work. The Contractor is solely responsible for enforcing worker protection requirements at least equal to those specified in this Section.

2. Each time the work area is entered the Contractor shall require all persons to remove all street clothes in the changing room of the personnel decontamination unit and put on new disposable coveralls, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3. Workers shall not eat, drink, smoke, chew gum, chew tobacco, apply cosmetics, or use the toilet in the work areas, the equipment rooms, the load out areas, or the clean rooms.

4. No open flames are not allowed in the work areas, the equipment rooms, the load out areas, or the clean rooms.

B. Worker Training

1. Train all workers in accordance with 29 CFR 1926 and North Carolina state regulations regarding the dangers inherent in handling asbestos, breathing asbestos dust, proper work procedures and personal and area protective measures.

C. Medical Examinations

1. Provide medical examinations for all workers. Examination shall at a minimum meet OSHA requirements as set forth in 29 CFR 1926 and N.C. Workmen's Compensation Act Dusty Trades Examination Record (DEHNR Form 2796).

D. Protective Clothing

1. Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the work area.

Provide a sufficient number for all required changes, for all workers in the work area.

2. Boots: Provide work boots with non-skid soles and, where required by OSHA, foot protection for all workers.

3. Gloves: Provide work gloves to all workers and require that they be worn at the appropriate times. Do not remove gloves from work area. Dispose of work gloves as asbestos-contaminated waste at the completion of the project.

4. Safety Glasses: Provide OSHA approved safety glasses with side shields to be worn at all times in all construction areas.

5. Hard Hats: Provide OSHA approved hard hats for the duration of the project. Hard hats should be worn at all times when on the project site.

E. Additional Protective Equipment

1. The appropriate level of respiratory protections (i.e. Type C respirators, PAPRs, etc.) disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, the Designer, asbestos air monitoring firm and other authorized representatives who may inspect the job site.

2.12 RESPIRATORY PROTECTION

A. Description of Work

1. Instruct and train each worker involved in asbestos abatement in proper respirator use and require that each worker always wear a respirator, properly fitted on the face, in the work area from the start of any operation, which may cause airborne asbestos fibers until the work area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the workplace or as required for other toxic or oxygen-deficient situations encountered.

B. General

1. Provide workers with personally issued and marked respiratory equipment approved by the National Institute for Occupational Safety and Health (NIOSH) and suitable for the asbestos exposure level in the work areas according to OSHA Standard 29 CFR 1926.1101 and other possible contaminants employees might be exposed to during the project (lead and mold).

2. Provide respiratory protection from the time the first operation involved in the project requires contact with asbestos-containing materials (including construction of decontamination units, construction of airtight barriers/barricades, and placing of plastic sheeting on walls) until acceptance of final air clearance test results by the air monitoring firm.

3. The minimum respiratory protection for the project during gross removal of all friable asbestos-containing materials shall be PAPR. The minimum respiratory protection for the project during gross removal of non-friable asbestos containing materials shall be half-faced air purifying respirators (APR).

4. The Designer may, under certain circumstances, allow the Contractor to use a half-face respirator with replaceable HEPA filters during the final cleaning phase. However, the eight-hour TWA air sampling data must document the exposure level, and the Supervising Air Monitor (SAM) must write a letter to the Designer allowing the Contractor to reduce respiratory protection.

5. Respirator fit testing shall be performed as a minimum at the beginning of the project, at any change in respiratory protection equipment, and at any time during the project if requested by the employee or SAM. Fit testing is to be performed by one of the methods listed in the 29 CFR 1926.1101, Appendix C.

6. Do not allow the use of single-use, disposable or quarter-face respirators for any purpose.

7. The Contractor may submit a new exposure assessment (as per 29 CFR 1926.1101) to the SAM with a request to downgrade to less

protective respirators. The SAM will make a recommendation to the Designer, who will issue a decision in writing to the Contractor approving or denying his request. If the Contractor disagrees with the decision, then the representative air sampling data may be reviewed by the HHCU for a final decision.

2.13 WASTE DISPOSAL

A. General

1. All asbestos materials and miscellaneous contaminated debris shall be properly sealed and protected, and the loadout vehicle/dumpster shall be enclosed (i.e. metal roof) shall remain locked while located on the facility site, and then transported to a predesignated disposal site in accordance with 40 CFR 61.150 and DOT 49 CFR Parts 100-399. Location of the loadout vehicle/dumpster shall be maintained in an area onsite approved by the Owner.

2. An enclosed vehicle will be used to haul waste material to the disposal site. No rental vehicles or trailers shall be used. Vehicle selection, vehicle covers, and work practices shall ensure that no asbestos becomes airborne during the loading, transport and unloading activity, and that material is placed in the waste site without breaking any seals.

3. Waste disposal polyethylene bags (6-mil minimum) and containers, non-porous (steel/plastic) drums or equivalent, with labels, appropriate for storing asbestos waste during transportation to the disposal site shall be used. In addition to the OSHA labeling requirements, all containers shall be labeled with the name of the waste generator and the location at which the waste was generated.

4. The Contractor shall transport the containers and bags of waste material to the approved waste disposal site. The sealed plastic bags shall be placed into the burial site unless the bags have been broken or damaged. Upon the landfill's approval, damaged bags shall be left in the non-porous containers and the entire contaminated package shall be buried. Uncontaminated containers may be reused.

5. Workers loading and unloading the asbestos will wear respirators and disposable clothing when handling material. Asbestos warning signs shall be posted during loading and unloading of asbestos waste.

6. The Contractor shall use the HHCU's Waste Shipment Record for disposal records as per 40 CFR 61.150 and distribute a copy of all waste shipment records to the Designer after the completion of the project.

2.14 AIR MONITORING - AIR MONITORING FIRM

A. General

1. The Owner shall be responsible for the coordination and execution of asbestos air monitoring services. Asbestos air monitoring services will be provided to the Owner by the Designer.

2. Asbestos air monitoring shall be done under the direct supervision of a North Carolina accredited SAM, except for sampling performed by the Asbestos Abatement Contractor to satisfy OSHA requirements.

3. The SAM shall be accredited per the Asbestos Hazard Management Program rules.

4. Asbestos air monitor shall be accredited as per the Asbestos Hazard Management Program rules and work under the direct supervision of a SAM.

5. Employees of the HHCU and asbestos air monitoring firm shall have right of entry into the project.

B. Description of Work

1. The asbestos air monitoring firm shall offer expertise to Contractor and Owner, but is not directly responsible for the performance of the job.

2. At the job site, the asbestos air monitoring firm is expected to observe, be aware, and comment on general work site conditions

and activities as they relate to the specifications and profession of industrial hygiene.

3. The asbestos air monitoring firm shall furnish the Contractor a copy of the field report, if requested. Copies of field notes and reports of observations shall be kept in project logbook.

4. The asbestos air monitoring firm is to conform to the Contractor's schedule and shall respond to necessary changes. The Contractor will allow a minimum notice of twenty-four (24) hours prior to a schedule change, unless the Designer and the Contractor agree upon a different time frame.

5. The asbestos air monitoring firm's air monitor shall furnish Designer and Contractor with a mobile phone number where they can be reached quickly at all times.

6. The asbestos air monitoring firm shall notify the Designer and Contractor immediately via phone and within twenty-four hours, and in writing, of any failed clearance visits.

7. At the completion of the project, the asbestos air monitoring firm shall prepare a report describing the assessment of the project, all asbestos air monitoring data, acceptance letters, calibration records, and a description of the project as it proceeded to completion and submit one copy of the report to the Designer.

C. Air Monitoring

1. Ambient Asbestos Air Monitoring: The purpose of ambient asbestos air monitoring by the asbestos air monitoring firm will be to detect discrepancies in the work area isolation such as:

   a. Contamination of the building outside of the work area with airborne asbestos fibers.

   b. Failure of filtration or rupture in the negative pressure system.

   c. Confirm the work practices established by the Contractor and respiratory protection provided for employees are adequate.

d. The asbestos air monitoring firm will monitor the ambient environment as directed in the air monitoring plan using Phase Contrast Microscopy (PCM) via the NIOSH 7400 method. At a minimum, daily ambient air monitoring will include sample collection at the following locations: decontamination unit, critical barriers, high efficiency particulate air (HEPA) exhaust, loadout and other areas deemed necessary by the Designer, SAM, or on-site air monitor.

e. For ambient daily air samples, which are to be analyzed using PCM, the maximum flow rate is 10 liters per minute, with a minimum sample size of 600 liters for each sample. Daily samples shall be less than 0.01 f/cc for all samples analyzed.

f. If the air quality in the personnel or equipment decontamination unit exceeds 0.01 asbestos fibers per cubic centimeter (f/cc) analyzed by PCM or 70 asbestos structures per millimeter squared (S/mm^2) analyzed by Transmission Electron Microscopy (TEM) or its integrity is diminished through use as determined by the Designer or air monitoring firm, no employee shall use the unit until corrective steps are taken and approved by the Designer and asbestos air monitoring firm.

2. Work Area Clearance: To determine if the elevated airborne fiber levels encountered during Abatement operations have been reduced to an acceptable level, the asbestos air monitoring firm will sample and analyze air as below.

   a. After the second cleaning operation and after the area is completely dry, the following procedure test shall be performed:

   b. A final visual inspection of each work area shall be conducted by the air monitoring firm. The inspection shall be conducted following the guidelines set forth in the American Society for Testing and Materials, Standard Practices for Visual Inspection of Asbestos Abatement Projects, Designation: E1368.14. If the work area is found visibly clean, and 24-hours after the Contractor "locks down" the work area and the work area is dry, the air monitoring firm will collect air samples.

c. During the air testing, the accredited air monitor shall cause disruptive air currents as described in the EPA-AHERA regulations (40 CFR Part 763, Subpart E, Appendix A).

d. Final clearance samples will be analyzed using TEM (minimum of 5 samples), the Mandatory Transmission Electron Microscopy Method described in 40 CFR Part 763, Subpart E, Appendix F. Clearance criteria shall be an arithmetic mean less than or equal to 70 S/mm^2.

e. If approved by the SAM, Owner and Designer, clearance samples in select areas may be analyzed using PCM (minimum of five samples using NIOSH 7400 method). The maximum flow rate is 12 liters per minute, with a minimum sample size of 1,200 liters for each sample. Clearance criteria shall be less than 0.01 f/cc for all samples analyzed.

f. Final clearance criteria shall be in accordance with AHMB Program Rules.

   - Interior Work Areas TEM < 70 S/mm²

g. The air monitoring firm shall immediately report the final air sampling clearance results to the Designer.

h. The use of the negative pressure system may be discontinued after the air monitoring firm instructs the Asbestos Abatement Contractor that he has passed the final project decontamination inspection.

3. If deemed necessary during the project, in accordance with AHMB Program Rules, the SAM shall develop an Abatement Project Monitoring Plan which complies with EPA and OSHA analytical criteria and will provide a valid representation of airborne fiber concentrations both inside and outside the work area. **This program is not intended to satisfy the Asbestos Abatement Contractor's requirement for sampling under the OSHA regulation.** All personnel and area sampling conducted by the air

monitoring firm shall be personally observed. Air sampling pumps shall not be left unattended for extended periods of time.

4. The SAM shall submit a written project monitoring plan to the Designer with a copy to the Contractor. The following information shall be required for the submittal.

    a. The name, address, and telephone number of the air monitoring firm.

    b. The name, address, telephone number, and NIOSH's PAT designation and proficiency data for the laboratory analyzing the air samples. Analysis of all samples collected shall be by a laboratory currently proficient in NIOSH's "Proficiency Analytical Testing Program for Laboratory Quality Control" for asbestos. The acceptable sampling and analysis method is NIOSH 7400, latest revision.

    c. Persons performing PCM analysis at the asbestos removal location shall be proficient in the American Industrial Hygiene Association's Asbestos Analyst Registry Program (AAR).

    d. A proposed air sampling strategy which shall include: a projected number of air samples, locations, the types of air samples to be collected (personal, area, ambient), how the air samples are to be collected (TWA, ceiling, other), the equipment to be used (pumps, calibration equipment, filters, other), and how the samples will be transported to the laboratory.

    e. All personal air samples will be collected in such a manner as to comply with OSHA collection and analytical regulations, and to provide a valid representation of airborne fiber levels. The samples **collected by the air monitoring firm on personnel do not satisfy the Contractor's responsibility under OSHA.**

5. All final area air sampling will comply with all state and federal requirements in measuring airborne asbestos following an abatement action.

6. Air samples will be analyzed, and results made available as per the AHMB Program Rules. Copies of all asbestos air sampling results shall be signed by the SAM and a copy posted at the job site. These copies shall include the following: sample number, sample location, activity represented by sample, flow rate, sample time, comments and sample results. A statement will be included on each submission that the requirements of this contract have been met as they apply to the activities of the SAM.

7. If TWA samples are being collected by the Contractor for the purpose of reducing respiratory protection requirements, the air monitoring firm shall directly observe the conditions and work practices represented by each sample and make appropriate notes in the bound book on site. The SAM shall review all TWA air sampling results, which are used for reducing respiratory protection requirements before accepting the results.

8. Supplemental air monitoring may be conducted inside and outside the work area by the HHCU. **This supplemental sampling does not fulfill air monitoring responsibilities required by OSHA, EPA, or this contract.**

2.15 REFERENCES

Unless modified by this project specification, all specifications for stripping, removal, repair, and disposal of asbestos-containing materials shall conform to the following specifications and standards, as applicable, as if completely reproduced herein.

A. The following regulations published by the Environmental Protection Agency (EPA):

1. "National Emissions Standards for Hazardous Air Pollutants Asbestos," 40 CFR Part 61, Subpart M.

2. "General Provisions," 40 CFR Part 61, Subpart A.

3. "Asbestos-Containing Materials in Schools," 40 CFR Part 763, Subpart E including appendices.

B. The following regulations published by the U.S. Department of Labor, OSHA:

1. "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules," Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations.

2. "Respiratory Protection," Title 29, Part 1910, Section 134 of the Code of Federal Regulations.

3. Construction Industry, Title 29, Part 1926, of the Code of Federal Regulations.

4. "Access to Employee Exposure and Medical Records," Title 29, Part 1910, Section 20 of the Code of Federal Regulations.

5. "Hazard Communication," Title 29, Part 1926, Section 59 of the Code of Federal Regulations.

6. "Specifications for Accident Prevention Signs and Tags," Title 29, Part 1910, Section 145 of the Code of Federal Regulations.

C. The following regulations published by North Carolina state agencies:

1. North Carolina Asbestos Hazard Management Program Rules as adopted by 10A NCAC 41C .0600.

2. "North Carolina Occupational Safety and Health Standards for the Construction Industry," 29 CFR Part 1926 as adopted by T13 NCAC 07F .0201, and shipyard T13:07F.0500.

3. North Carolina General Statutes, Chapter 95, 97, 130.

D. The following documents published by the American National Standards Institute:

1. "Fundamentals Governing the Design and Operation of Local Exhaust Systems," Z9.2-1979.

2. "American National Standard for Respiratory Protection Respiratory Use - Physical Qualifications for Personnel," Z88.6-1984.

3. "Practices for Respiratory Protection," Z88.2-1992.

E. The following publication by the Environmental Information Association:

1. "Managing Asbestos In Buildings: A Guide for Owners and Managers, A Revision to the United States Environmental Protection Agency 1985 document Guidance for Controlling Asbestos-Containing Materials in Buildings (EPA 560/5-85-024) Known as the Purple Book," – 2015.

3.0 MOLD-IMPACTED MATERIALS REMOVAL

Quantities and locations of asbestos-containing materials are outlined in the *Southport Former City Hall Lead and Asbestos Inspection Report* dated April 2024. Building materials that are to be impacted by remediation and/or renovation activities that are identified, assumed, or suspected to be lead coated shall be remediated according to section 4.0. **ACM and mold removal locations are noted on the attached figures 1 through 9**.

Front is determined by facing East Moore Street from inside of the building.

GENERAL/THROUGHOUT

- A three-foot flood cut should be performed on the first floor. This includes removal of the gypsum wallboard, water-damaged plaster and associated gypsum backerboard, and wood paneling.
- In addition, clean all horizontal surfaces (i.e., pews, ceiling, floors walls, doors, windows, outlets, etc.) throughout the building.
- Clean the original wood ceiling panels above the ceiling tile grid in the original section with an EPA approved anti-microbial cleaner.
- Water-damaged plaster should be removed due to the presence of gypsum board backer.
- Water-damaged windows and associated frames will require removal and disposal; however, that line item is not included within this scope.
- Water-damaged wood door framing and window framing will require repair; however, that line item is not included within this scope.
- Refer to section 3.7 for removal procedures.

HALLWAY:

- Remove the affected plaster from the front, rear, and left walls beginning at the floor and extending approximately 3 feet towards the ceiling. Removal shall extend the entire width of the walls.
- Remove carpeting, covering asbestos containing floor tiles (in full containment if floor tile is disturbed by carpet removal).
- Remove ceiling tiles

1ST FLOOR FRONT LEFT RESTROOMS:

- Remove drywall from walls in their entirety.
- Remove plaster walls and associated impacted gypsum board backerboard.

ROOM 1:

- Remove carpeting, covering asbestos containing floor tiles (in full containment if floor tile is disturbed by carpet removal).
- Remove the drywall ceiling in its entirety.
- Remove the affected wainscoting and associated drywall and/or plaster from the right wall and extend the removal within a 2-foot radius of the affected area when possible.
- Scrape and clean the affected plaster on the front and right walls.

ROOM 2:

- Remove carpeting, covering asbestos containing floor tiles (in full containment if floor tile is disturbed by carpet removal).
- Remove the drywall ceiling in its entirety.
- Remove the water-damaged wainscoting from all walls and assess the plaster. Plaster affected with apparent water damage or suspected mold growth shall be removed as necessary.

ROOM 3 / ELECTRICAL:

- Remove affected plaster walls with apparent degradation, as necessary.

ROOM 4:

- Remove carpeting.

ROOM 5:

- Remove carpeting.

ROOM 6:

- Remove carpeting.
- Remove ceiling tiles.
- Remove affected drywall from the rear wall and extend to the removal in a 2-foot radius of the affected area when possible.

ROOM 7A:

- Asbestos-containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.
- Remove carpeting.
- Remove all ceiling tiles.

ROOM 7B:

- Remove ceiling tiles.
- Asbestos-containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.
- Remove wood wall paneling and affected drywall with suspected visible mold growth and/or apparent water damage and extend the removal within a 2-foot radius of the affected area when possible.

ROOM 8 – IN ACCESSIBLE BUT ASSUME SIMILAR SCOPE TO ROOM 2:

- Remove carpeting, covering asbestos containing floor tiles (in full containment if floor tile is disturbed by carpet removal).
- Remove the drywall ceiling in its entirety.
- Remove the water-damaged wainscoting from all walls and assess the plaster. Plaster affected with apparent water damage or suspected mold growth shall be removed as necessary.

ROOM 9

- No visible mold growth or mold-impacted building material removal recommended at this time.

ROOM 10:

- Scrape and clean plaster walls with suspect mold growth. If apparent water damage is observed, remove the affected plaster as necessary.

ROOM 11:

- Remove the affected plaster from the rear wall.
- Remove affected plaster walls adjacent to Room 12.
- Remove carpeting.

- Remove ceiling tiles.

ROOM 12:

- Remove the affected drywall wall from the rear and extend the removal within a 2-foot radius of the affected area when possible. Please note, damaged asbestos CMU block surface filler is located behind the drywall wall, therefore wall removal should be performed using friable asbestos abatement methods.
- Remove carpeting in its entirety.
- Remove ceiling tiles.
- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.

ROOM 13:

- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.
- Repair ceiling at exterior wall.

ROOM 14:

- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.

REAR LEFT BATHROOM:

- Remove drywall walls.
- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.

OFFICE ADJACENT TO REAR LEFT BATHROOM:

- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.
- Remove drywall walls in their entirety.
- Scrape and repair water damaged ceiling.

LANDING/STAIRWAY:

- Remove carpeting. Assess subfloor. If apparent water damage or suspected visible mold growth is observed, clean and repair as necessary.
- Remove apparent moisture damaged wood door frames.
- Remove lead coated brown wood wainscoting from the lower wall below the windows.

- Remove affected plaster walls with apparent water damage or suspected visible mold growth.
- Remove wallpaper from the left wall, assess plaster and remove or clean any affected plaster with suspected visible mold growth and/or apparent water damage as necessary.
- Cleaning lighting fixtures.

MECHANICAL ROOM:

- Remove asbestos containing floor tiles entirely as outlined in section 2.9.
- Remove lead coated brown wood wainscoting from the lower walls.
- Remove ceiling tiles and water-damaged insulation.

COURTROOM:

- Remove water-damaged wood wainscoting from the lower walls (this material is lead containing).
- Remove carpeting and assess subfloor. If apparent water damage or suspected mold growths is observed, clean and repair as necessary.
- Remove and dispose of curtains.
- Clean ornamental ceiling tiles and lighting fixtures.

ROOM 207:

- Remove carpet over asbestos containing floor tiles (in full containment if floor tile is disturbed by carpet removal). Removal of floor tiles shall be conducted as outlined in section 2.9.
- Remove wood panel wallboard and drywall walls. Not that exterior walls contain asbestos-containing CMU block surface filler and removal of these wall coverings shall be performed as friable asbestos abatement.
- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.
- Remove ceiling tiles and associated fiberglass insulation.

ROOM 205

- Remove ceiling tiles and associated fiberglass insulation.
- Remove the drywall wall.
- Asbestos containing CMU wall coating should be removed per the asbestos abatement procedures in Section 2.9.

ROOM 203:

- Remove ceiling tiles and associated fiberglass insulation.
- Remove the front and rear drywall walls.

- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.

2ND FLOOR RESTROOMS HALLWAY:

- Remove plaster walls with suspected visible mold growth.
- Remove ceiling tiles.
- Clean wood ceiling.

2ND FLOOR REAR RESTROOMS:

- Remove affected plaster walls with apparent water damage or suspected visible mold growth as necessary.

2ND FLOOR REAR CORRIDOR

- Remove the affected ceiling with apparent water damage or suspected mold growth above the rear door.
- Remove the affected rear wood door frame.
- Remove ceiling tiles.

2ND FLOOR REAR LEFT ROOM

- Remove ceiling tiles and associated fiberglass insulation.
- Remove all affected drywall with suspected visible mold growth or apparent water and extend the removal within a 2-foot radius of the affected area when possible.
- Note that exterior walls contain asbestos-containing CMU block surface filler and removal of these wall coverings shall be performed as friable asbestos abatement.

CONFERENCE ROOM:

- Remove carpet over asbestos containing floor tiles (in full containment if floor tile is disturbed by carpet removal). Removal of floor tiles shall be conducted as outlined in section 2.9.
- Remove ceiling tiles and associated fiberglass insulation.
- Remove all affected drywall with suspected visible mold growth or apparent water and extend the removal within a 2-foot radius of the affected area when possible.
- Note that exterior walls contain asbestos-containing CMU block surface filler and removal of these wall coverings shall be performed as friable asbestos abatement.
- Asbestos containing CMU block surface filler should be removed per the asbestos abatement procedures in Section 2.9.

3.1 HVAC EQUIPMENT

Supply and return air vent openings in the work areas shall be covered by critical barriers. Critical barriers will consist of at least one layer of 6-mil polyethylene sheeting. HVAC cleaning is not included in this scope due to potential replacement of the HVAC system.

3.2 CRITICAL BARRIERS

Double flap barriers, constructed with 6-mil polyethylene sheeting, will be utilized to mitigate the dissemination of dust/debris or biological particles into the adjacent indoor environment. Critical barriers include entry doors, windows, ceiling cavities, and entry/exits to and from each separate work area or room. The work area barriers must be constructed without disturbing contaminated materials and should consist of the following:

A. Appropriate construction signage must clearly identify the work area undergoing remediation and/or asbestos abatement. Access to this area must be restricted to remediation and environmental professional personnel only. Occupants may not enter the work area while remediation or asbestos abatement is ongoing.

B. Protected trackways for access of remediation and abatement personnel and transportation of contaminated material to and from the work area must be established. Access routes should not pass-through cleaned areas.

3.3 DECONTAMINATION UNIT

A decontamination chamber or airlock, constructed of 6-mil polyethylene sheeting, PVC, or wood framing, should be erected for entry into and exit from the remediation areas. The entryways to the airlock from the outside and from the airlock to the main containment area should consist of a slit entry with covering flaps on the outside surface of each slit entry. The chamber should be large enough to hold a waste container and allow a person to put on and remove PPE. All contaminated PPE, except respirators, should be placed in a sealed bag while in this chamber. Except for the doorway and the make-up air provision for the enclosure, the worker decontamination system shall be sealed against leakage of air. Personnel must enter and exit the work area through the decontamination enclosure system. No fungal-contaminated individuals, tools,

materials, PPE, or other items shall enter the "clean room" side of the decontamination chamber.

3.4 VENTILATION

All removal and decontamination activities will take place in a full negative pressure containment with air locks and critical barriers. Air shall be exhausted outside the building and away from pedestrian traffic areas. Any variations must be approved by the Designer. Negative air machines (NAM) shall be located at the farthest possible location from the clean air intake(s).

3.5 PPE

Workers will wear PPE consisting of, at a minimum, half face dual cartridge air purifying respirators with HEPA cartridges (P-100) and full body disposable coveralls before beginning fungal remediation. Full-face, powered air purifying respirators (PAPR) are recommended. It is the contractor's responsibility to ensure that his employees are afforded the respiratory protection as required by the OSHA standard for respiratory protection (29 CFR 1910.134, December, 2008) or the respiratory protection requested by the employee. Safety glasses and appropriate work gloves must be worn while working. Tape glove/sleeve interfaces. Rubber boots or Tyvek type booties shall be worn to prevent shoes from contamination.

3.6 REMOVAL PROCEDURES AND DECONTAMINATION (NON-ACM)

This section applies to the removal of mold-impacted materials that are not ACM. See Section 2.9 for ACM removal.

The goal of this removal procedure and cleaning is to remove and dispose of mold-impacted materials in a way that will minimize the production of spore contaminated dust. All removal and decontamination activities will take place in a full negative pressure containment with air locks and critical barriers. Dust and spore producing surfaces will be wetted with water containing a disinfectant prior to removal. The following procedures shall also be performed:

A. A portable sprayer shall be used to mist interior surfaces with disinfectant, such as Fiberlock Shockwave® (quaternary ammonium chloride), or equivalent, as impacted materials are removed. SDS's for the chemicals used during the remediation must be maintained onsite by the Contractor.

The contact surface of any mold-impacted materials should be sprayed with disinfectant prior to its removal and shall be resprayed if dust is generated during removal of same.

B. A HEPA vacuum cleaner shall be used to clean surfaces. A HEPA-filtered NAM or large HEPA-equipped vacuum shall be used as a local exhaust source in the immediate proximity of any power equipment used. Debris should be immediately cleaned up with a HEPA vacuum cleaner.

C. Whenever possible, cutting shall be performed with a sharp blade to minimize dust. Large power saws, such as saws-all, shall not be used. Remove and discard all materials with visible fungal growth.

D. Once the mold-impacted surface has been dampened with disinfectant and a clean cut is made, the material shall be removed in as large a piece as possible and wrapped in plastic for disposal.

E. Mold impacted and water damaged materials shall be removed to an extent of two feet past visible observation of impact.

3.7 WASTE DISPOSAL

This section applies to the removal of mold-impacted materials that are not ACM. See Section 3.0 for ACM waste removal.

A. Appropriate staging of equipment, supplies, and bagged contaminated waste shall be done to prevent cross-contamination of non-work areas. All waste generated within the work areas (including drywall, insulation materials, and PPE) are to be bagged, wiped clean within decontamination area prior to removal from work area, and placed into a closed container for disposal.

B. Waste materials will be bagged or wrapped in 6-mil polyethylene unlabeled disposal bags in work areas where asbestos abatement is not being performed concurrently. Waste will be disposed as construction waste or as asbestos waste, where required.

3.8 POST-REMEDIATION VERIFICATION CRITERIA

A. The project will be cleared by: 1) visual inspection and 2) total bioaerosol analysis. The post remedial inspection will be conducted immediately following remediation activities. After completion of the visual assessment, the remediation contractor shall apply an anti-fungal protective coating, such as Fiberlock IAQ 6000 or equivalent breathable United States Environmental Protection Agency (USEPA)-registered fungicide coating, per the manufacturer's application instructions to all previously disinfected and cleaned surfaces. The anti-fungal protective coating shall be compatible with the replacement finishes and shall be specifically formulated for long-term fungicidal activity.

B. Total bioaerosol sampling will be conducted after 24 hours of air scrubbing following application of the encapsulant. The NAMs may not be removed until final testing results are acceptable.

C. The visual evaluation criteria will consist of an evaluation of the remediation area to determine if the remediation has been properly conducted in accordance with the project specifications and procedures, and visible fungal growth and extraneous debris within the work areas have been properly removed. The Contractor shall accompany Terracon during the visual inspection. Upon clearance of the work area by visual inspection, the contractor and the environmental professional will sign the attached Mold Visual Assessment Certification form.

D. Representative air samples shall be collected from the work areas, an adjacent occupied area outside of the work area, and the outdoor environment and analyzed by standard optical light microscopy methods. Total bioaerosol analysis must be conducted by a licensed mold analysis laboratory. Any area whose air test does not meet post-remediation criteria will be retested following cleaning and air scrubbing of those areas.

E. Total bioaerosol analytical clearance criteria will be based on qualitative and quantitative similarity between the indoor samples and the ambient outdoor control samples collected contemporaneously. Air samples will be collected and analyzed in a manner that provides a minimum detection limit of 43 spores per cubic meter of air (spores/m^3). Total fungal aerosols in the indoor environment should not exceed the

contemporaneously collected outdoor control samples by more than 650 spores/m^3 or fungal spores that are unique to the indoor environment should not exceed more than 50% of the high results for typical outdoor spore levels as reported in the EMLab P&K IAQ Pocket Reference Guide, 7th Edition. Terracon may make numeric exceptions for frequently isolated genera such as *Cladosporium* or other typical mesophilic fungi.

3.9 REFERENCES

A. AIHA *Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings – AIHA Guideline 3-2004*

B. AIHA *Recognition, Evaluation and Control of Indoor Mold, 2008*

C. *ACGIH*, *Bioaerosols: Assessment and Control, 1999*

D. Environmental Protection Agency *Web* Page. Indoor Air Quality Glossary.
http://www.epa.gov/iaq/glossary.html

Institute of Inspection, Cleaning, and Restoration Certification (IICRC), Standard and Reference Guide for *Professional* Mold Remediation, S520 – 2008

4.0 LEAD-CONTAINING PAINT REMOVAL

4.1 SCOPE OF WORK

A. The renovation scope of work will disturb lead-containing materials identified on surfaces that are scoped to be removed from interior and exterior portions of the building as part of the abatement design.

B. Additional information regarding the lead-containing materials is provided in the following document: *Former City Hall Asbestos and Lead Paint Inspection*, dated April 2024, prepared by Terracon Consultants, Inc. The scope of work is not contained in the inspection report. The report is for informational purposes only.

1. The Contractor is required to read the entire report and keep a copy of it on site during the disturbance of lead-containing materials. In

addition, other contractors whose work may impact lead-containing materials will be required to read and maintain a copy the report on-site during construction activities.

2. Testing for the presence of lead-containing paint was performed in representative locations of areas where renovation or demolition is expected to disturb a painted component. The testing did not include all painted components at the site. Any painted material that was not tested shall be assumed to contain lead unless proven otherwise by the Contractor. The Contractor may elect to perform additional testing to confirm the presence of lead-containing materials at the site. However, all costs associated with additional testing and compliance with this Section shall be borne by the Contractor.

C. The lead-containing materials present in the building include but shall not be limited to the items listed below. Any paint discovered and not previously tested for lead shall be assumed to be lead containing. Please refer to the laboratory prior to abatement activities.

- White on the exterior wood window frames
- White on the exterior wood window sashes
- White on the wood handrail located on the stairwell and into the landing
- White on the wood window aprons
- White on the exterior wood window sashes located on the original windows
- Brown on the wood wainscotings located within the courthouse and the 2nd floor landing
- Tan on the wood flooring below carpet in the 2nd floor landing

D. The Contractor is responsible for following OSHA lead regulations during renovation activities.

4.2 DEFINITIONS

A. Action Level – Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter (µg/m3) of air averaged over an 8-hour period.

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

C. Eight-Hour Time Weighted Average (TWA) – Airborne concentration of lead to which an employee is exposed, averaged over an 8-hour workday as indicated in 29 CFR 1926.62.

D. High Efficiency Particulate Air (HEPA) Filter Equipment – HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead-contaminated dust. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron or larger size particles.

E. Lead – Metallic lead, inorganic lead compounds, and organic lead soaps.

F. Lead-Containing Paint (LCP) – Paint or other similar surface coating containing any detectable level of lead.

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

H. Lead Permissible Exposure Limit (PEL) – 50 µg/m3 of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula:

PEL (µg/m3 of air) = 400/(hours worked in the day)

I. Personal Air Monitoring – Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere,

forward of the shoulders, with a radius of 6 to 9 inches and centered at the nose or mouth of an employee.

J. Physical Boundary – Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel.

4.3 PERSONNEL

A. Training Requirements: Workers who will have the potential of lead exposure shall have proof of successfully completing a training course which covers the topics required by 29 CFR 1926.62. Contractors are also advised that training in other areas may be required and are responsible to ensure that all training requirements for appropriate trades and procedures are met.

B. Specified Supervisor Qualifications: The Contractor shall specify an on-site Supervisor or Competent Person who is fully qualified in all aspects of safe work practices and procedures with lead-containing materials, and have (or will have) completed a training course within the previous year prior to the commencement of lead related work. The lead training course will cover all topics required by 29 CFR 1926.62 as well as training in relevant federal and local regulatory requirements, procedures and standards, supervisory techniques, and proper disposal procedures.

4.4 CODES AND REGULATIONS

A. Contractors conducting removal or disturbance of lead-containing materials shall ensure that employee exposure does not exceed the OSHA established Action Level of 30 µg/m^3 during the activities that may impact the lead-containing materials. Detection of these levels can be accomplished by personal air monitoring.

B. Workers shall be properly protected to minimize exposure to lead. The Contractor shall comply with 29 CFR 1926.62 and all other applicable federal and local laws and regulations pertaining to lead. The Contractor is responsible for Toxicity Characteristic Leaching Procedure (TCLP) analysis of the waste stream and disposal of lead-containing contaminated waste.

C. OSHA 29 CFR 1926.62 regulates activities that disturb lead, including lead-containing paint (LCP), by the use of manual techniques. Regulated activities include abrasive blasting, welding, cutting, burning on structures, manual scraping or sanding, and manual demolition of structures. The work practices described in this Section are intended to protect the workers from exposure to LCP and other lead-containing materials, provide a safe workplace, and protect the environment.

D. The Contractor shall prepare a Site-Specific Written Compliance Program that contains the elements required by 29 CFR 1926.62(e) (2) (ii) (A)-(I) that are specific to the conditions at the job site.

E. Torch cutting, grinding (without HEPA controls on the grinder), or similar work practices are prohibited where there may be disturbance of lead-containing materials. All compliance sampling shall be performed by individuals working under the direction of the Contractor's Supervisor or Competent Person. Following completion of work, submit all monitoring documentation to the Owner. The Owner may elect to do independent sampling.

F. Work shall conform to the standards set by applicable federal and local laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract and as may be required by subsequent regulations.

G. In addition to any detailed requirements of the protocol, the Contractor shall at their own cost and expense comply with all laws, ordinances, rules and regulations of federal, regional and local authorities regarding handling and storing of lead waste material.

H. Regulations by the above and other governing agencies in their most current version are applicable throughout this project. Where there is a conflict between this protocol and the cited federal or local regulations or guidelines, the more restrictive or stringent requirements shall prevail. This Section refers to many requirements found in these references, but in no way is it intended to cite or reiterate all provisions therein or elsewhere. It is the Contractor's responsibility to know, understand, and abide by all such regulations, guidelines, and common practices.

4.5 MATERIALS AND EQUIPMENT

A. The work of this Section, without limiting the generality thereof, includes the furnishing of labor, materials, tools, equipment, services, and incidentals necessary to safely accomplish tasks that will disturb lead-containing materials.

B. Approvals and Inspections: Temporary facilities, work procedures, equipment, materials, services, and agreements must fully comply with EPA, OSHA, and NIOSH recommendations, standards and guidelines, as well as any other applicable federal and local regulations. Where an overlap of these regulations and guidelines exists, the most stringent shall apply.

C. Disposal: The Contractor shall dispose of all loose paint chips and scraped paint chip debris as hazardous waste.

4.6 WORKER PROTECTION

A. Initial Determination: The Contractor shall determine, through personal exposure monitoring on the job site or through relevant documentation from other similar jobs, whether workers will be exposed to airborne lead at or above the OSHA Action Level and Permissible Exposure Limit. If exposures at or above the Action Level are documented, appropriate health and safety procedures identified herein shall be followed. If levels below the Action Level are documented, the Contractor shall exercise an appropriate level of care to ensure that exposures above the Action Level do not occur.

B. Whenever there is a change of equipment, process, control, personnel or a new task has been initiated that may result in additional employees being exposed to lead at or above the Action Level, or may result in employees already exposed at or above the Action Level being exposed above the PEL, the Contractor shall conduct additional monitoring.

C. Biological Monitoring: Until a negative initial determination is achieved, any worker having the potential of lead exposure must have baseline blood level screenings determined by the whole blood lead method, utilizing Vena-Puncture technique. This test must be performed before

workers re-enter a lead contaminated work area. A worker will be removed from the job if their blood lead level is 50 ug/dl or greater and confirmed by a second blood level test. The Contractor shall be responsible for medical surveillance and record keeping.

D. Personal Hygiene Practices: Where exposures to airborne lead above the OSHA PEL occurs or may be expected to occur, the Contractor shall enforce and follow good personal hygiene practices. These practices shall be performed until personal exposure sampling indicates that exposures are below the PEL at which time the Contractor has the option to continue or discontinue the use of personal hygiene facilities. These practices shall include but not be limited to the following:

1. No eating, drinking, smoking, or applying of cosmetics in the work area. The Contractor will provide a clean space, separated from the work area, for these activities.

2. Workers must wash upon leaving the work area. The Contractor will provide wash facilities. This wash facility will consist of, at least, running potable water, towels, and a HEPA vacuum. Upon leaving the work area, each worker will remove and dispose of work suit, wash and dry face and hands, and vacuum clothes.

3. Disposable clothing, such as TYVEK suits, and other personal protective equipment (PPE) must be donned prior to entering work area. A clean room will be provided for workers to put on suits and other personal protective equipment and to store their street clothes. Disposable suits shall be used once, and then properly discarded.

4. A lavatory facility must be provided and located adjacent to the work area. The eating and drinking area, clean room, and the lavatory facility must be maintained in a clean and orderly fashion at all times. The Contractor will provide portable lavatories when needed and disinfect them daily.

5. If air monitoring data gathered by the Contractor shows that employees' exposure to airborne lead exceeds 50 ug/m^3, the following conditions apply:

a. Showers must be provided. Shower water must pass through at least a 5.0-micron filter before returning to the public waste system.

b. Workers must shower upon leaving work area.

c. Three-stage decontamination unit must be established as described in Section 3.6.

4.7 WORK AREA PREPARATION

A. Signage: Prior to the preparation for work which will disturb lead-containing materials, the Contractor shall place warning signs immediately outside all entrances and exits to the area, warning that de-leading work is being conducted in the vicinity. The signs shall be at least 20" x 14" and read:

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

The signs shall be in bold lettering with lettering not smaller than two inches tall. Should personal exposure monitoring results indicate that exposures to lead are below the Action Level, then the signs will not be required.

B. Access to Work Areas: It will be the Contractor's responsibility to allow only authorized personnel into the work area. Barrier tape shall be used to limit access to the work areas. Contractor shall maintain a bound logbook, in which any person entering or leaving the lead work area must sign and enter the dates and times of entry and departure. If personal exposure results indicate the exposures to lead are below the Action Level, then a logbook will not be required. The Contractor or competent person will not allow anyone access to the work area unless they have successfully passed an approved training program, and have been fitted and wearing a properly fitted respirator, when required.

C. Place one layer of 6-mil (minimum) polyethylene plastic sheeting on the floor in the work areas as a drop cloth.

D. Heating, Ventilation, and Air Conditioning (HVAC) Systems: Shut down, lock out, and isolate HVAC systems supplying, exhausting, and passing through lead control areas. Seal HVAC inlets and outlets within lead control area with 6 mil plastic sheet and tape. Tape/seal seams in HVAC components passing through lead control area.

E. Dumpsters: All dumpsters used to store hazardous waste shall be DOT approved, solid enclosed containers, locked, and secured at all times. The location shall be designated by the Owner.

4.8 WORK PROCEDURES

A. General: These procedures detail generalities of component work procedures. Resulting bundles or "containers" of removed components and/or debris shall be carefully handled to reduce the potential of ripping, bursting, or otherwise diminishing the integrity of the bundle or "container". Care must be taken so that leaded materials are neither burned, nor dusted, nor result in further exposure to workers or observers. Paint chips shall be contained either in the HEPA vacuum or in approved six-mil polyethylene disposal bags.

B. Disturbance of Lead-Containing Materials

1. Any construction work where an employee may be occupationally exposed to lead must comply with OSHA Regulations 29 CFR 1926.62, which includes safety training and education.

2. The work area shall be vacated by unauthorized personnel prior to the start of any pre-cleaning and preparation of the work area.

3. Lead safe work practices shall be used during the disturbance of the lead-containing materials to reduce the amount of dust produced.

4. Clearance of the work area will include a visual inspection by the Supervisor or Competent Person to determine the required work is completed and if there is visible settled dust, paint chips, or debris in, or in the vicinity of, the work area.

5. Subsequent renovation work should be performed in a manner that will not disturb the remaining lead-containing materials.

4.9 AIR SAMPLING – CONTRACTOR

A. Personal Exposure Monitoring: The Contractor shall perform personal exposure sampling to monitor personal exposure levels to airborne lead. Samples shall be taken for the duration of the work shift or for eight hours, whichever is greater. Personal samples need not be taken every day after the first day if working conditions remain unchanged, but must be taken every time there is a change in the removal operation, either in terms of the personnel, location, or the type of work. Sampling will be used to determine eight-hour Time-Weighted-Averages (TWA). The Contractor is responsible for personal sampling as outlined in OSHA Standard 29 CFR 1926.62.

B. Frequency: Air monitoring frequency will be established in accordance with the requirements set forth in 29 CFR 1926.62.

4.10 CLEAN-UP PROCEDURES

A. When work is in progress, the work site shall be cleaned at the end of each day's activities. The building shall be secured to prevent entry by any person after termination of the workday. Durable equipment, such as power and hand tools, generators, and vehicles, shall be cleaned weekly.

B. Equipment shall be cleaned by HEPA vacuuming. Surfaces shall be maintained as free as practicable of accumulations of lead-containing dust and debris. Clean up of lead-containing dust and debris shall be accomplished with HEPA vacuum or wet methods. The debris shall be misted with water with an airless type sprayer and collected with a mop or broom.

C. Equipment shall be cleaned prior to removal from the work area. Alternatively, when equipment is being transferred from one work area directly to another work area on site, the equipment may be wrapped with polyethylene sheeting and sealed airtight prior to transfer.

4.11 DISPOSAL OF LEAD WASTE MATERIAL

A. All materials, whether hazardous or non-hazardous, shall be disposed of in accordance with all laws, and the provisions of this Section and any or all other applicable federal or local regulations and guidelines. It shall be the sole responsibility of the Contractor to assure compliance with all laws and regulations relating to disposal.

B. The Contractor shall contact the regional EPA and local authorities to determine disposal requirements for construction and demolition debris that contains lead-containing coatings. The requirements of the Resource Conservation and Recovery Act (RCRA) shall be complied with as well as applicable local solid waste requirements.

C. The following materials are considered Hazardous Waste (Lead) and shall be disposed of as such):

   1. Paint chips and paint chip debris

D. Storage Requirements: Any item determined or assumed to be hazardous waste shall be kept in a secured area or lockable container that is inaccessible to all persons other than abatement personnel. All hazardous waste shall be labeled "Hazardous Waste", and include the date that the Contractor began to collect waste in that container. Hazardous and non-hazardous waste shall be kept in totally and completely separate containers.

E. Disposal Packaging: Any hazardous or potentially hazardous waste shall be stored in US Department of Transportation (DOT) approved containers and properly labeled and stored in a secure manner.

F. Waste Transportation: The Contractor shall employ DOEE, DOT, and EPA certified Hazardous Waste Transporter for the disposal of hazardous wastes.

G. Waste Manifests: The Contractor shall be responsible for the preparation of any manifests necessary for the disposal of project-related hazardous wastes. The Owner will only sign a manifest or manifests for project-related hazardous wastes; defined as those wastes present at the site at project initiation. Disposal of any

hazardous wastes generated by the Contractor shall be the sole responsibility of the Contractor.

H. The Contractor shall supply all manifests for hazardous waste or Bills of Lading for disposal of non-hazardous waste to the Owner. No payment for disposal will be made until all documentation is received and approved by the Owner.

VISUAL ASSESSMENT CERTIFICATION

SOUTHPORT FORMER TOWN HALL
SOUTHPORT, NORTH CAROLINA

Work Area: _____

Mold Remediation Contractor (MRC)

In accordance with the appropriate guideline requirements, the remediation contractor hereby certifies that the work area has been visually assessed, and that all visible dust, debris, and mold residue has been removed in accordance with this fungal remediation protocol.

By: (Signature) _____Date: _____

_____

Print Name: _____

Print Title: _____

Environmental Professional

The environmental professional hereby verifies that the MRC has been accompanied on the interior visual assessment, and that this assessment has been performed according to the appropriate guideline requirements and to the best of his knowledge and belief, the contractor's certification above is a true and honest one.

By: (Signature) _____Date: _____

_____

Print Name: _____

Print Title: _____