ASBESTOS ABATEMENT SPECIFICATIONS

Johnsonville Elementary School
18495 NC Highway 27
Cameron, North Carolina

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Terracon Project No. 70207356

Prepared For:
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Lillington, NC

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SECTION 01043

PROJECT COORDINATION

1.01 GENERAL

A. The scope of this project includes the abatement of the following asbestos-containing materials (ACM) from Johnsonville Elementary School in Cameron, North Carolina, prior to demolition.

- Mastic associated with 12"x12" Beige w/Brown Specks Floor Tile
- 12"x12" Tan w/Green and Brown Rock Pattern Floor Tile/Mastic
- Black Roof Mastic
- Black Sink Coating
- White Window Glazing
- 9"x9" Grey w/White and Grey Streaks Floor Tile/Mastic
- Cementitious Ceiling Panels
- Chalkboard Mastic
- Mirror Mastic

B. All Asbestos Abatement Contractors will be licensed general contractors in either the specialty interior, building, unclassified, or asbestos categories by the North Carolina Licensing Board of General Contractors and limited for the bid amount.

C. The Asbestos Abatement Contractor shall be responsible for inspecting the site prior to bidding to confirm the scope of the work. Any quantities listed by the designer in the plans, specifications, survey, or other related documents are done so as estimations. The Asbestos Abatement Contractor is responsible for measurements and quantifying the materials to be removed.

D. The Asbestos Abatement Contractor shall furnish and is responsible for all costs including, but not limited to: permit fees, perimeter fencing, containment preparation, scaffolding/aerial lifts, labor, materials, services, insurance, and equipment necessary to carry out the asbestos abatement operations. All work will be in accordance with the plans and specifications, applicable EPA and OSHA regulations, and any other applicable state and local government regulations.

E. The Asbestos Abatement Contractor/employer has and assumes the responsibility of proceeding in such a manner that he offers his employees a workplace free of recognized hazards causing or likely to cause death or serious injury. The Asbestos Abatement Contractor shall be responsible for performing this asbestos abatement and disposal so that asbestos fiber levels do not exceed the established levels of the personal protective equipment provided to employees.

F. The Asbestos Abatement Contractor will be responsible for all costs associated with employee monitoring to meet the OSHA requirements.

G. The Asbestos Abatement Contractor is responsible for all costs, including additional visits, should the designer and/or the air-monitoring firm determine that the Asbestos Abatement Contractor failed a final inspection. Notification and scheduling of the final inspection during the project is the responsibility of the Asbestos Abatement Contractor. The Asbestos Abatement Contractor will allow a minimum notice of 48 hours unless the designer and the Asbestos Abatement Contractor agree upon a different time frame.

H. Asbestos Abatement 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.

1.02 PERSONNEL

A. Supervisor

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

2. At least one supervisor 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.

4. The Asbestos Abatement 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.

B. Worker

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

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

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. The competent person, employed by the Asbestos Abatement Contractor, shall be bilingual in the appropriate languages when employing workers who do not speak fluent English.

D. Employees

1. The Asbestos Abatement 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 Asbestos Abatement Contractor shall remove them immediately from the project.

2. The Asbestos Abatement Contractor shall be responsible for compliance with the following concerning employee behavior:

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

   b. Firearms are not permitted on the site.

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

   d. Vehicles will be parked in an area designated by the Owner.

   e. 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.

   f. The Asbestos Abatement 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.

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

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

1.03 PRE-JOB SUBMITTALS

A. Submit one (1) complete, bound set of pre-job submittals to the designer at least two (2) working days prior to start of work. Work is prohibited until the submittal package has been reviewed and approved by the designer. A copy of the submittals shall be kept in a three-ring binder (project log) by the Asbestos Abatement Contractor at the project site in the on-site office of the Asbestos Abatement Contractor.

1. Notifications: Provide copies of Asbestos Permit Application and Notification for Demolition/Renovation (DEHNR 3768), which provide written notice to all required agencies, including North Carolina HHCU, ten (10) working days prior to commencement of abatement activities.

2. Employee List: Provide copies of lists of supervisors and workers, along with copies of their HHCU asbestos accreditation cards, to be utilized on the project.

3. Permits: Provide copies of approval of a waste disposal site in compliance with 40 CFR 61.154.

4. Project Schedule: Time schedule for the project, outlining the proposed start, setup, clearances, etc. for the various phases of the project.

5. Initial Exposure Assessment: As required by the OSHA construction asbestos standard 29 CFR 1926.1101.

6. Any other programs or training as outlined by the OSHA and EPA standards.

1.04 POST-JOB SUBMITTALS

A. Submit one (1) complete, bound set of post-job submittals to the designer following the final completion of the work. Requests for final payment will not be approved until the submittal package has been reviewed and approved by the designer.

1. Affidavits: Asbestos Abatement Contractor's affidavit of payment of debts and claims, affidavit of release of liens, and consent of surety company to final payment.

2. Manifest: North Carolina Asbestos Waste Shipment Record (DEHNR 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.

3. 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.

4. Workers: Copies of HHCU asbestos accreditation cards of all new employees hired during the project.

5. Special Reports: All documents generated under Section 01043.1.05.

1.05 SPECIAL REPORTS

A. General: Except as otherwise indicated, **submit special reports to designer within one (1) day of occurrence requiring special report**, with copies to others affected by occurrence. Also, keep a copy in the project logbook.

B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report to the designer immediately, listing chain of events, persons participating, response by Asbestos Abatement Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise designer in advance at earliest possible date.

C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. **A complete copy of the accident report shall be provided to the designer and Owner within 24-hours of the accident occurrence.** Record and document date and actions; comply with industry standards for reporting accidents. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.06 CONTINGENCY PLAN

A. Contingency Plan: Prepare a site-specific contingency plan for emergencies including: fire, accident, power 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 Asbestos Abatement 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 Safety Data Sheets (SDS) for any chemicals used during the asbestos project.

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

SECTION 01092

CODES AND REGULATIONS

1.01 REFERENCE SPECIFICATIONS

The Asbestos Abatement Contractor shall assume full responsibility and liability for compliance with all applicable federal, state and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.

Unless modified by this project specification, all specifications for stripping, removal, repair, and disposal of asbestos-containing and other hazardous 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. Asbestos Construction Industry Standard, 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.

1.02 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

   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.

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

SECTION 01410

AIR MONITORING - AIR MONITORING FIRM

1.01 GENERAL

A. 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.

B. Asbestos air monitoring shall be done by an Air Monitor under the direct supervision of a North Carolina accredited Supervising Air Monitor (SAM), except for sampling performed by the Asbestos Abatement Contractor to satisfy OSHA requirements.

C. SAM shall be accredited per the North Carolina Asbestos Hazard Management (AHM) Program rules.

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

E. Employees of the HHCU shall have right of entry into the project.

1.02 DESCRIPTION OF WORK

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

B. 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.

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

D. The asbestos air monitoring firm is to conform to the Asbestos Abatement Contractor's schedule and shall respond to necessary changes, provided an advance notice is given as outlined in Section 01043.

E. The asbestos air monitoring firm's project monitor shall furnish designer and Asbestos Abatement Contractor with a mobile phone number where they can be reached quickly at all times.

F. The asbestos air monitoring firm shall notify the designer and Asbestos Abatement Contractor immediately via phone and within 24 hours in writing, of any failed clearances.

G. 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. The air monitoring firm shall submit four copies of the report to the designer. An electronic copy may be submitted in lieu of hard copies.

1.03 AIR MONITORING

A. 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:

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

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

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

B. Daily Ambient Monitoring: 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. The purpose of this air monitoring will be to detect airborne fiber levels which may challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

C. Sampling conducted by the air monitoring firm shall be personally observed. Air sampling pumps shall not be left unattended for extended periods of time.

D. 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 per Section 01714.

E. In accordance with AHM 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.**

F. The SAM shall submit a written project monitoring plan to the designer with a copy to the Asbestos Abatement Contractor. The following information shall be required for the submittal.

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

2. 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.

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

4. 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.

5. 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 Asbestos Abatement Contractor's responsibility under OSHA.**

G. Final area air sampling will comply with State and Federal requirements in measuring airborne asbestos following abatement activities.

H. Air samples will be analyzed and results made available as per the AHM Program Rules. Copies of 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.

I. If TWA samples are being collected by the Asbestos Abatement 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.

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

SECTION 01503

TEMPORARY FACILITIES

1.01 GENERAL

A. Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

B. Use qualified tradesmen for installation of temporary services and facilities. Locate, modify and extend temporary services and facilities where they will serve the project adequately and result in minimum interference with the performance of the work.

C. The Owner is responsible for the lock and tag out of all power sources and the abatement contractor shall verify.

1.02 WATER SERVICE

A. The Asbestos Abatement Contractor shall coordinate with the Owner to have water services supplied at the site. The Asbestos Abatement Contractor bears all expense of heating and getting water to the work areas and decontamination areas.

B. The Asbestos Abatement Contractor shall supply hot and cold water to the decontamination unit in accordance with Section 01563. Hot water shall be supplied at a minimum temperature of 100 degrees Fahrenheit.

C. 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.

1.03 ELECTRICAL SERVICE

A. Asbestos Abatement Contractor shall coordinate with the Owner to have the electricity supplying the building disconnected.

B. General: The Asbestos Abatement Contractor shall coordinate the supply of electricity required for execution of the project. The Asbestos Abatement Contractor shall comply with applicable NEMA, NEC and UL standards and governing state and local regulations for materials and layout of temporary electric service. Asbestos Abatement Contractor bears the cost of getting electricity to the work area.

C. Ground Fault Protection: Provide receptacle outlets equipped with ground fault circuit interrupters (GFCI), reset button and pilot light, for plug-in connection of power tools and equipment. All GFCI shall be located outside of the containment areas. All powered equipment shall be connected to a GFCI.

D. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity and power characteristics to accommodate performance of work during the construction period.

E. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

F. Provide services of an electrician, on a standby basis, to service electrical needs during the Abatement process.

G. Provide additional power service and distribution service, consisting of individual dedicated 15 amp 120 volt circuits to electrical drops with receptacle outlets equipped with ground fault interrupt protection, color coded for the exclusive use of the air monitoring firm.

1.04 FIRST AID

A. A minimum of one first aid kit shall be located on the project site. Additional first aid kits as the Asbestos Abatement Contractor feels is adequate or is required by law shall be located throughout the work areas.

1.05 FIRE EXTINGUISHERS

A. Comply with the applicable recommendations of NFPA Standard 10 - "Standard for Portable Fire Extinguishers." Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each work area equipment room and one in the clean rooms of the personnel decontamination units.

1.06 TOILET FACILITIES

A. Provide temporary toilet facilities to be used by Asbestos Abatement Contractor's employees as well as the employees of the air monitoring firm.

1.07 PARKING

A. Park only in areas designated by the Owner.

1.08 SITE SECURITY

A. The Asbestos Abatement Contractor is responsible for constructing and maintaining a secure regulated area, including the entry/exit areas, by the use of perimeter site fencing. The regulated areas shall be restricted to authorized, trained, and protected personnel. These may include the Asbestos Abatement Contractor's employees, employees of approved subcontractors, regulatory representatives, and any other designated individuals. The Asbestos Abatement Contractor shall establish a list of authorized personnel prior to job start. Abatement locations will be appropriately identified utilizing warning signs as required by OSHA and all city, state, and federal regulations. The Asbestos Abatement Contractor is responsible for creating and maintaining a secure work area during the entire project.

B. The Asbestos Abatement Contractor is responsible for maintaining secure entry/exit locations at the facility while work is being completed. The Asbestos Abatement Contractor is responsible for coordinating site security issues with the Owner.

C. The Asbestos Abatement Contractor shall maintain a logbook in the clean room areas of all personnel in the regulated area. Anyone who enters the regulated areas must record name, affiliation, time in, and time out for each entry.

1.09 STORAGE

A. Supply temporary storage required for storage of equipment and materials for duration of project. Trailer and storage dumpsters will be maintained in areas designated by the Owner.

SECTION 01526

WORK AREA PREPARATION

1.01 GENERAL

A. Before work begins in an area, a decontamination unit must be in operation as outlined in Section 01563.

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

C. Temporary facilities shall be addressed as outlined in Section 01503.

D. The Asbestos Abatement 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 01563.

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

1.02 DEMOLITION/REMOVAL OF NON-ASBESTOS CONTAINING MATERIALS

A. The Asbestos Abatement Contractor is responsible for the demolition and/or removal of all necessary materials to gain access to asbestos-containing materials.

1. The Asbestos Abatement Contractor is responsible for coordinating demolition and/or removal activities with the Owner.

2. Asbestos Abatement Contractor's demolition and/or removal of non-ACMs may include, but may not be limited to:

- Plaster, brick, and other walls
- Exterior finishes
- Chalkboards
- Mirrors
- Exterior walkway vinyl/metal soffit panels

1.03 NEGATIVE PRESSURE CONTAINMENT (FRIABLE REMOVAL) – FLOOR TILE AND MASTIC AND COMPONENT REMOVALS (CHALKBOARD MASTIC AND SINK MASTIC)

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

B. Critical Barriers: The Asbestos Abatement Contractor shall thoroughly seal the work area for the duration of the work by sealing off individual openings and fixtures in the

work areas, including, but not limited to: heating and ventilation ducts, doorways, windows, electrical boxes, etc. with a minimum of two layers of 6-mil polyethylene plastic sheeting independently taped securely in place.

C. The Asbestos Abatement Contractor shall coordinate with the Owner and Mechanical Contractor to isolate HVAC system from the work areas.

D. The Asbestos Abatement 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 either secure these items in place with polyethylene sheeting or have them removed from the work area.

E. Walls: Apply one (1) layer of 6-mil (minimum) polyethylene plastic sheeting on walls (if the surface is porous, i.e. unpainted CMU) with joints overlapped a minimum of 24 inches and taped securely where asbestos-containing wall materials are not scheduled to be removed. Do not poly over sinks or chalkboards scheduled to be removed.

F. Ceilings: Apply at least one layer of 4-mil (minimum) polyethylene plastic sheeting on ceilings (if the surface is porous, i.e. ceiling tile) with joints lapped a minimum of 24 inches and taped securely. Plastic shall be lapped over surface coverings and taped securely.

G. Integrity of these seals shall be regularly checked and maintained by the Asbestos Abatement Contractor.

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

I. Entrances and exits from the work areas will have triple barriers of polyethylene plastic sheeting so that the work areas are always closed off by one barrier when workers enter or exit. Proper signage per 29 CFR 1926.1101 shall be posted.

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

K. The Asbestos Abatement Contractor shall install negative pressure systems as outlined by section 01513. The Asbestos Abatement Contractor shall place work areas under negative pressure using HEPA filter exhaust units. A minimum of four air changes per hour is required for this project. Filtered air must be exhausted outside of the building.

L. The Asbestos Abatement 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.

M. After work area preparation, the Asbestos Abatement Contractor shall notify the designer verbally with written follow-up that the containment is ready for a pre-work inspection.

1.04 NON-FRIABLE ACM REMOVAL – FLOOR TILE AND MASTIC AND COMPONENT REMOVALS (CHALKBOARD MASTIC AND SINK MASTIC)

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

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

C. Entrances/exits from the work areas shall have triple barriers of 6-mil (minimum) polyethylene plastic sheeting so that work areas are always closed off by one barrier when workers enter or exit.

D. A splashguard shall be installed on walls a minimum of three (3) feet from floor where asbestos-containing floor tile and/or mastic are scheduled for removal.

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

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

G. If at any time during asbestos removal activities non-friable materials become friable, which includes breaking ACM or non-ACM floor tile over ACM mastic, the Asbestos Abatement Contractor shall immediately stop removal operations and construct a negative pressure enclosure per Section 1.03, above.

1.05 NON-FRIABLE COMPONENT REMOVAL – MIRROR MASTIC, CHALKBOARD MASTIC AND SINK MASTIC (WORK AREA NOT UNDER FULL CONTAINMENT)

A. If the component removal is not performed within a full containment (along with floor tile removal), then prior to removal, the asbestos 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.

B. Drop clothes 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.

C. A remote decontamination unit must be in place and operational in close proximity to the regulated area prior to the start of removal operations.

D. The component removal of ACM shall be in conducted in such a manner that the materials remain substantially intact/non-friable.

1.06 EXTERIOR, NON-FRIABLE ACM REMOVAL – ROOF MASTIC, CEMENTITIOUS CEILING PANELS AND WINDOW GLAZING

A. The Asbestos Abatement Contractor shall erect red asbestos barrier tape around exterior work areas to identify the regulated areas. Appropriate asbestos signs shall be placed on each side of the regulated area and a minimum of every 20 feet. Signs shall be in English and appropriate languages when workers or the general public in the area do not speak fluent English. Only accredited asbestos workers will be allowed inside the regulated areas. Asbestos Contractor shall construct appropriate scaffolding or other methods to access asbestos-containing materials.

B. The Asbestos Abatement Contractor shall establish an equipment room or area that is adjacent to the work area for the decontamination of workers and equipment contaminated with asbestos. The decontamination area shall consist of an area covered by an impermeable drop cloth on the floor or horizontal working surface and be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area when acceptable by OSHA asbestos regulations. Or a decontamination unit can be in place and operational in close proximity to the regulated area prior to the start of removal operations.

C. Install critical barriers over openings into building or equipment within 30 feet of the work area.

D. The Asbestos Abatement Contractor shall cover the ground surface at the side of the building below where glazing is being removed in the regulated area with one (1) layer of 6-mil (minimum) polyethylene plastic sheeting with joints lapped a minimum of 24 inches and taped securely.

E. If during asbestos removal activities non-friable materials become friable, the Asbestos Abatement Contractor shall immediately stop removal operations and contact the Designer for additional work practice requirements.

SECTION 01560

WORKER PROTECTION

1.01 GENERAL

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

B. Each time the work area is entered the Asbestos Abatement 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. Alternatively, persons may put on two disposable coveralls over street clothes and a clean respirator. Proceed through shower room to equipment room and put on work boots.

C. Workers shall not eat, drink, smoke, chew gum or chew tobacco in the work areas, the equipment rooms, the load out areas, or the clean rooms.

D. Lighters and matches are not allowed in the work areas, the equipment rooms, the load out areas, or the clean rooms.

1.02 WORKER TRAINING

A. 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.

1.03 MEDICAL EXAMINATIONS

A. 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).

1.04 PROTECTIVE CLOTHING

A. 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.

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

C. 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.

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

E. 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.

1.05 ADDITIONAL PROTECTIVE EQUIPMENT

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

1.06 DECONTAMINATION PROCEDURES

A. Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area:

1. Remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

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

    a. Thoroughly wet body including hair and face.
    b. With respirator still in place; thoroughly wash body, hair, respirator face piece, and all exterior parts of the respirator.
    c. Take a deep breath; hold it and/or exhale slowly, completely wet hair, face and respirator. While still holding breath, remove respirator and hold it away from face before starting to breathe.
    d. Carefully wash face piece of respirator inside and out.
    e. Shower completely with soap and water; rinse thoroughly.
    f. Rinse shower room walls and floor prior to exit.
    g. Proceed from shower to changing (clean) room and change into street clothes or new disposable work items.

3. If the person was wearing multiple disposable coveralls showering may be limited to washing the face, hair, and hands.

4. After showering, each employee shall inspect, clean and repair his respirator as needed. The respirator shall be dried, placed in a suitable storage bag and properly stored.

SECTION 01562

RESPIRATORY PROTECTION

1.01 DESCRIPTION OF WORK

A. 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.

1.02 GENERAL

A. Provide workers with personally issued and marked respiratory equipment approved by 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.

B. 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 the final visual clearance by the air monitoring firm.

C. The minimum respiratory protection for the project during removal of asbestos-containing and asbestos-contaminated materials shall be half-faced air purifying respirators (APR).

D. 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.

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

SECTION 01563

DECONTAMINATION UNITS

1.01 DESCRIPTION OF WORK

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. The Asbestos Abatement Contractor shall comply with 29 CFR 1926.1101, specifically paragraph (j) Hygiene facilities and practices for employees. See Appendix B for a typical plan view of personnel and equipment decontamination facilities.

1.02 GENERAL

A. Personnel Decontamination Units

1. Provide a Personnel Decontamination Unit for the project site 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. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit.

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

3. 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.

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

5. 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.

6. 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.

7. Pump shower waste water to drain. Provide 20 micron and 5 micron waste water filters in line to drain. Change filters daily or more often if necessary.

8. Visual Barriers: Where the area adjacent to the decontamination and loadout areas are accessible or visible to the public, 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. Equipment Decontamination:

1. Asbestos Abatement Contractor shall decontaminate dumpsters and heavy equipment located inside the asbestos work area prior to exiting the waste loading area. Asbestos Abatement Contractor is responsible for collection and proper disposal of the water used in decontamination of waste dumpsters and heavy equipment as asbestos contaminated waste.

SECTION 01711

PROJECT DECONTAMINATION

1.01 GENERAL

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 Asbestos Abatement 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 and floors, but are still remaining on all windows, doors and the critical components, the Asbestos Abatement 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 Asbestos Abatement 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 Asbestos Abatement 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 designer and air monitor.

G. Final project decontamination inspection includes the visual inspection and air monitoring clearance. Final inspection for exterior work areas includes a visual inspection only.

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.

J. Final air sampling shall not commence until the visual inspection is completed and passed. Final air clearances shall meet the requirements of Section 01714.

K. 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 Asbestos Abatement Contractor's expense, including additional industrial hygiene fees, until the work area is in compliance.

L. 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 02084.

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

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

O. 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 Asbestos Abatement Contractor's expense.

SECTION 01714

WORK AREA CLEARANCE

1.01 GENERAL

A. Notification and scheduling of the final inspection during the project is the responsibility of the Asbestos Abatement Contractor.

1.02 FINAL CLEARANCE TESTING

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

1. A final visual inspection of each interior and exterior 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: E1368.90. If the work area is found visibly clean, and 24-hours after the Asbestos Abatement Contractor "locks down" the work area and the work area is dry, the air monitoring firm will collect air samples within the interior work areas.

2. 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).

3. In interior work areas, 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. The flow rate shall be between 5 and 10 liters per minute, with a minimum sample size of 1,200 liters for each sample. Clearance criteria shall be an arithmetic mean less than or equal to 70 structures per square millimeter (s/mm^2).

4. Final clearance criteria shall be in accordance with AHM Program Rules.

• Interior Work Areas	TEM < 70 str/mm²
• Exterior Work Areas	Visual Only

5. The air monitoring firm shall immediately report the final air sampling clearance results to the designer.

6. 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.

SECTION 02080

ASBESTOS REMOVAL

1.01 GENERAL

A. Prior to starting asbestos removal, the Asbestos Abatement Contractor's equipment, work area and decontamination units will be inspected and approved by the designer or air monitoring firm.

B. 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 "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. 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.

C. 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.

D. All abated 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. Asbestos-containing or contaminated building debris shall be placed into a dumpster that has been lined with two 6-mil (minimum) layers of polyethylene sheeting.

E. 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.

1.02 SCHEDULE

A. Project Dates: The project is to commence and conclude on dates as specified or pre-approved by the Owner and designer. The Asbestos Abatement Contractor shall refer to Owner's schedule. Asbestos Abatement Contractor shall coordinate the phasing of the project with the Owner and designer to achieve this goal.

B. Work Hours: Work hours are specified in the Owner's schedule.

C. Workweek: Workweek shall be Monday through Friday, unless otherwise specified or pre-approved by the Owner and designer.

1.03 DEMOLITION OF NON-ASBESTOS CONTAINING MATERIALS

A. The Asbestos Abatement Contractor is responsible for the removal and/or demolition of all fixtures necessary to gain access to asbestos-containing materials per Section 01526.

1.04 SCOPE OF WORK

A. Removal of NESHAP Category I non-friable ACMs (asbestos-containing materials) shall be performed using non-friable removal techniques and/or friable removal techniques. Clean-up of asbestos-containing debris shall be performed using wet methods. Removal of RACMs (regulated asbestos-containing materials) shall be performed using wet methods. Clean-up of asbestos-containing debris shall be performed using wet methods. The Asbestos Abatement Contractor shall adequately wet the ACMs in the work area. Each work area where removal is completed shall remain intact and under negative pressure until clearance is achieved.

B. During this project, the NESHAP Category I non-friable ACMs to be removed from the building include:

- 12”x12” and 9”x9” Floor Tile and Mastic
- Black Roof Mastic

C. During this project, the NESHAP Category II non-friable ACMs to be removed from the building include:

- Black Sink Coating
- Window Glazing
- Cementitious Ceiling Panels
- Chalkboard Mastic
- Mirror Mastic

D. Each work area shall remain intact until visual clearance is achieved.

1.05 ACM REMOVAL - FLOOR TILE AND MASTIC

A. Asbestos Abatement Contractor may remove asbestos-containing flooring and mastics, using non-friable removal techniques where applicable. If at any time during removal, the flooring and mastics become friable in an area that is not already in a negative pressure enclosure, the Asbestos Abatement 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.

B. After work area preparation is complete, Asbestos Abatement 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.

C. Asbestos Abatement 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.

D. Asbestos Abatement Contractor shall continue misting asbestos-containing materials with amended water throughout the removal process.

E. Asbestos Abatement 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.

F. Asbestos Abatement Contractor shall clean work area as required by Section 01711.

G. Asbestos Abatement Contractor shall remove asbestos-containing materials using hand tools and wet methods. No mechanical tools will be allowed for removal of asbestos-containing materials.

H. Following removal of asbestos-containing materials within a containment area, initial cleaning, and passing visual clearance inspection conducted by the air monitoring firm, the Asbestos Abatement 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.

I. Asbestos-containing mastics shall be removed using a low to no odor solvent. Asbestos Abatement Contractor shall use solvent sparingly for odor control.

J. Asbestos Abatement Contractor is responsible for the demolition of interior fixtures or walls in order to completely remove flooring finishes selected for removal.

1.06 ACM REMOVAL – COMPONENT REMOVAL (CEMENTITIOUS CEILING PANELS, SINK MASTIC, MIRROR MASTIC AND CHALKBOARD MASTIC)

A. The component removal of ACM shall be in conducted in such a manner that the materials remain substantially intact/non-friable.

B. Dispose of mirrors and chalkboards as ACM and wet scrape mastic and mastic residue from walls.

1.07 ACM REMOVAL – WINDOWS WITH ASBESTOS-CONTAINING WINDOW GLAZING

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

B. 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.

C. A remote decontamination unit must be in place and operational in close proximity to the regulated area prior to the start of removal operations.

D. The window component removal shall be conducted in such a manner that the asbestos-containing glazing remains substantially intact/non-friable.

E. Secure the window openings with plywood and caulk so it is watertight.

1.08 ACM REMOVAL – ROOF MASTIC

A. Asbestos Abatement Contractor shall remove asbestos-containing roof mastic using hand tools and wet methods. No mechanical hand tools will be allowed for removal of asbestos-containing materials.

B. If at any time during asbestos removal activities non-friable materials become friable, the Asbestos Contractor shall immediately stop removal operations and contact the Designer for additional work practice requirements.

SECTION 02084

DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

1.01 GENERAL

A. 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 prearranged by Owner and the designer.

B. 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 assure 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.

C. 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.

D. The Asbestos Abatement 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.

E. 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.

F. The Asbestos Abatement 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.

APPENDIX A

PRE-WORK ASBESTOS INSPECTION CHECKLIST

Name of Facility: _____

Project Name: _____

Project ID Number: _____

Date of Inspection:_____ Pass: _____ Fail: _____

			YES	NO
A.	**DOCUMENTS**			
	1)	Asbestos Removal Permit/NESHAP Notification	_____	_____
	2)	Accreditation Documents for Workers & Supervisors	_____	_____
	3)	Asbestos Plans and Specifications	_____	_____
	4)	Air Monitoring Data	_____	_____
	5)	Waste Shipment Records	_____	_____
	6)	Sign-in Sheets and Bound Book for Comments	_____	_____
	7)	Calibration Record for Grade “D” Air	_____	_____
	8)	Items listed in Section 01043 of Specification	_____	_____
B.	**PPE SUPPLIES**			
	1)	Tyvek Clothing	_____	_____
	2)	Rubber Boots	_____	_____
	3)	Respirators with HEPA Filters	_____	_____
C.	**CLEAN ROOM**			
	1)	Entry Curtains	_____	_____
	2)	Emergency Phone Numbers Posted	_____	_____
	3)	First Aid Kit	_____	_____
	4)	Asbestos Signs	_____	_____
	5)	Decontamination Procedures Posted	_____	_____
	6)	Fire Extinguisher	_____	_____
D.	**SHOWER ROOM**			
	1)	Polyethylene Curtains	_____	_____
	2)	Hot/Cold Water & Operational	_____	_____
	3)	Soap & Towels	_____	_____
	4)	Waste Water Filter Pump Operational	_____	_____
	5)	Extra Five Micron Size Filters	_____	_____
	6)	Filtered Waste Water to Sanitary Sewer	_____	_____

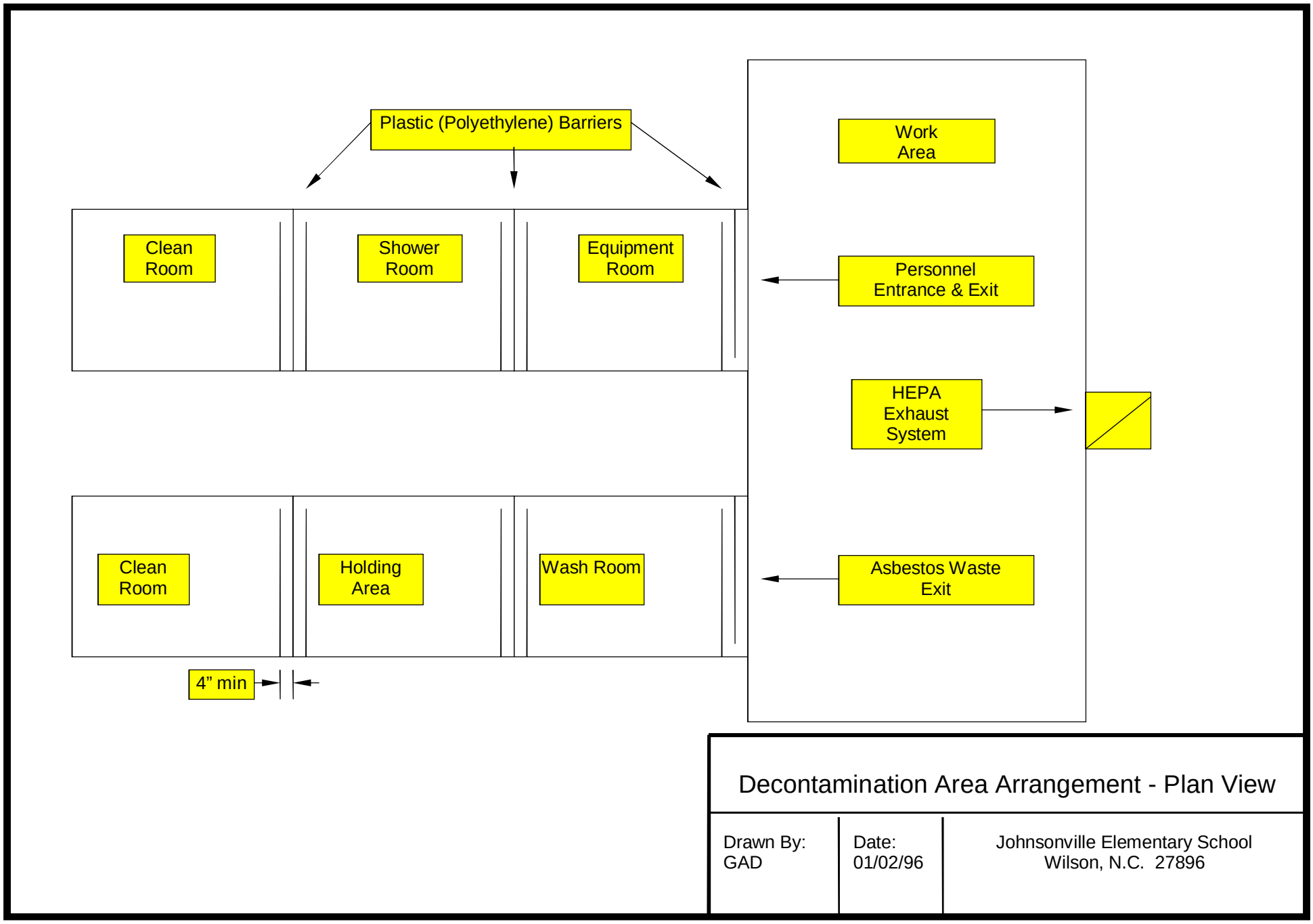
		YES	NO
E.	**WORK AREA**		
1)	Removable Items Out of Area	_____	_____
2)	Non-removable Items Protected	_____	_____
3)	Critical Barriers Installed	_____	_____
4)	Polyethylene Curtains	_____	_____
5)	Polyethylene on Walls/Floors as Specified	_____	_____
6)	HVAC off	_____	_____
7)	Air Filtration Devices in Place and Operational	_____	_____
8)	Air Exhausted to Outside	_____	_____
9)	Electricity Locked and Tagged Out	_____	_____
10)	Temporary Power Installed with GFCI	_____	_____
11)	Fire Extinguishers	_____	_____
12)	Emergency and Fire Exits Marked	_____	_____
13)	Audible Alarms Operational	_____	_____
14)	Toilet Available	_____	_____
F.	**EQUIPMENT**		
1)	Safety Equipment	_____	_____
2)	HEPA Vacuums	_____	_____
3)	Waste Disposal Bags	_____	_____
4)	Airless Sprayer with Water Source	_____	_____
5)	Cleaning Equipment	_____	_____
6)	Glove Bags	_____	_____
7)	Emergency Power Generator (if required)	_____	_____
8)	Temporary Lighting	_____	_____
G.	**OTHER**		
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____

_____ _____

Asbestos Design Consultant *Date*

_____ _____

Asbestos Abatement Contractor's Representative *Date*



Decontamination Area Arrangement - Plan View

Drawn By:	Date:	Johnsonville Elementary School
GAD	01/02/96	Wilson, N.C. 27896

SHEET NOTES

A. ALL ASBESTOS-CONTAINING MATERIALS (ACM) SHALL BE REMOVED AND DISPOSED OF PROPERLY BY AN ASBESTOS ABATEMENT CONTRACTOR UTILIZING SUPERVISORS AND WORKERS ACCREDITED BY THE HEALTH HAZARDS CONTROL UNIT OF THE NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

B. THESE DRAWINGS ARE ACCOMPANIED BY TECHNICAL SPECIFICATIONS FOR THE REMOVAL AND DISPOSAL OF ACM PREPARED BY TERRACON CONSULTANTS, INC., DATED NOVEMBER 23, 2020.

C. MATERIAL LOCATIONS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS AND QUANTITIES OF ACM TO BE REMOVED.

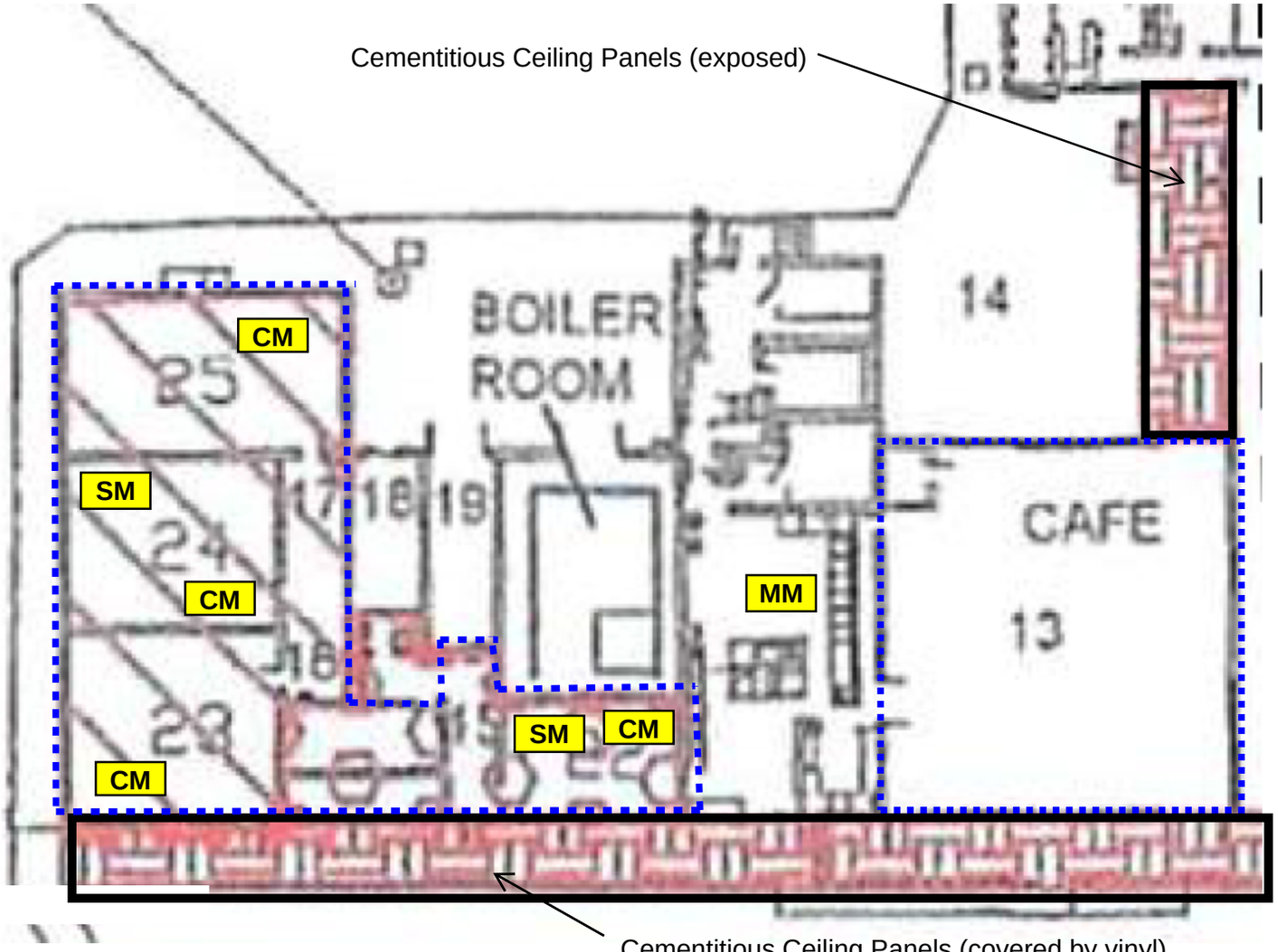
D. THE SCOPE OF WORK IS BASED ON INFORMATION PROVIDED IN THE LIMITED ASBESTOS SURVEY REPORT PREPARED BY TERRACON, DATED SEPTEMBER 29, 2020. IF ADDITIONAL IDENTIFIED, ASSUMED, OR SUSPECT ACM WILL BE IMPACTED, OTHER THAN THOSE NOTED OR PREVIOUSLY SAMPLED, THE CONTRACTOR SHALL INFORM THE DESIGNER TO DETERMINE IF ADDITIONAL CONTROL MEASURES ARE WARRANTED.

E. ASBESTOS-CONTAINING WINDOW GLAZING IS LOCATED THROUGHOUT EXTERIOR.

F. ASBESTOS-CONTAINING ROOF MASTIC IS LOCATED ON SOUTHERN ELEVATION CHANGE AND AROUND PENETRATIONS ON UPPER ROOF

LEGEND

- **CM** — Chalkboard Mastic
- **SM** — Sink Mastic
- **MM** — Mirror Mastic
- Asbestos-containing floor tile and mastic



Project Manager: AJS	Project No. 70207356
Drawn By: AJS	Scale: N.T.S.
Checked By: RH	File Name:
Approved By: RH	Date: 11/23/2020

Terracon
Consulting Engineers & Scientists
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PH. (919) 873-2211 FAX. (919) 873-9555

General Layout / Locations of Asbestos-Containing Materials

Johnsonville Elementary School
18495 NC Highway 27
Cameron, North Carolina

Figure 1