Affinity Energy & Environmental Engineers, PA

SPECIFICATIONS
For The
REMOVAL
Of
ASBESTOS-CONTAINING MATERIALS
At
HAYWOOD COUNTY ANNEX II BUILDING
1233 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA

Affinity Project #12061

Designed and Prepared For:
Haywood County Schools
401 Farmview Road
Waynesville, NC 28786

Designed and Prepared By:
Affinity Energy & Environmental Engineers, PA
P.O. Box 2261
Asheville, North Carolina 28802
(828) 393-8182

Submitted: May 13, 2020
Designer: David W. Holtsclaw
NC Accreditation No.: 40030

_____

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

Division 1 - General Requirements **Page Number**

Division 2 - Site Work

APPENDICES

SECTION - 01043

PROJECT COORDINATION

1.01 GENERAL

A. 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.

B. The 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 or survey are done so as approximations. The actual quantities of asbestos-containing material to be encountered are the responsibility of the contractor.

C. The contractor shall furnish and is responsible for all costs including, but not limited to: permit fees, containment preparation, labor, materials, services, insurance, bonding, and equipment necessary to carry out the abatement operations and disposal of all asbestos material in accordance with the plans and specifications, the EPA and OSHA regulations, and any applicable state and local government regulations.

D. The 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 contractor shall be responsible for performing this abatement and disposal so that airborne asbestos fiber levels do not exceed established levels.

E. The contractor will be responsible for all costs associated with employee monitoring to meet the OSHA requirements.

F. The contractor is responsible for all costs, including additional visits, should the designer and/or the industrial hygiene 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 48 hours unless a different time frame is agreed upon by the designer and the contractor.

1.02 PERSONNEL

A. Supervisor

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

2. All supervisors on the project shall have 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 10 workers inside the containment. A minimum of one supervisor shall be provided per project.

4. The contractor shall have at least one employee on the job site in either a foreman or supervisor's position who is bilingual in the appropriate languages when employing workers who do not speak fluent English.

5. A minimum of one supervisor per company shall have attended a 24-hour respiratory protection course.

B. Worker

1. All workers shall be accredited by the HHCU.

C. Competent Person

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

D. Employees

1. 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.
2. The 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 state property.

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

c. All vehicles must be parked in areas prearranged with the owner.

d. 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.

e. The contractor is responsible for disposal of all trash brought on state property by his employees, including drink cans, bottles or other food containers and wrappers.

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

1.03 MEETINGS

A. Prebid

1. A prebid conference will be held by the designer. All contractors submitting a bid are encouraged to attend, visit the site and ask questions concerning the plans and specifications.

2. The designer will review the plans and specifications, present required techniques and safeguards for the removal of the asbestos and identify locations of water, electrical sources, etc.

3. Any minutes, new points or clarifications raised during the meeting will be issued by the designer in an addendum prior to bids.

1.04 PRE-JOB SUBMITTALS

A. Submit three complete, bound sets of pre-job submittals to the designer at least 10 days prior to start of work. Work is prohibited until submittal package has been reviewed and approved by designer. A copy of the approved submittals shall be kept in a three-ring binder (project log) by the contractor at the project site in the clean room or in the on-site office of the 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. Provide notification letters to local EMS, fire and police departments.

2. Employee List: Provide copies of lists of supervisors and workers, along with their accreditation and Social Security numbers, 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. Medical: Include individually signed and notarized forms by each worker to be utilized on the project documenting that each is actively involved in a company employee medical surveillance program.

5. Initial Exposure Assessment as required by OSHA 29 CFR 1926.1101.

6. Respirator Training: Copies of most recent fit testing records, individually signed, for each worker to be utilized on the project.

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

8. A copy of the license of the electrician to be used on the project.

9. A copy of personnel air monitoring from previous asbestos abatement projects.

1.05 POST-JOB SUBMITTALS

A. Submit three complete, bound sets 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: 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 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 Log: A notarized 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. Medical: Copies of worker release forms, asbestos training certification forms and respirator training documentation of all new employees hired during the project.

5. Special Reports: All documents generated under Section 01043.1.06.

1.06 SPECIAL REPORTS

A. General: Except as otherwise indicated, submit special reports to designer within one 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 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.

.

1.07 CONTINGENCY PLAN

A. Contingency Plan: Prepare a 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 plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency. Keep these plans in the on-site office.

B. Post outside/in clean room of Personnel Decontamination Unit:

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

2. A copy of Material Safety Data Sheets (MSDS) for any chemicals used during the asbestos project.

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

SECTION 01092

CODES AND REGULATIONS

1.01 REFERENCE SPECIFICATIONS

The 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 these project specifications, all specifications for stripping, removal, repair and disposal work 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. "Guidance for Controlling Asbestos-Containing Materials in Buildings" June 1985. (EPA # 560/5-85-024).

4. "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 15A NCAC 19C .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.

1.02 NOTICES

A. The 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
Occupational & Environmental Epidemiology Branch
N.C. DHHS
1912 Mail Service Center
Raleigh, N.C. 27699-1912
Telephone: (919) 707-5950

N.C. Department of Labor
Division of Occupational Safety and Health
4 West Edenton Street
Raleigh, N.C. 27603
Mail: 1101 Mail Service Center
Raleigh, N.C. 27699-1101
Telephone: 1-800-LABOR-NC

2. Local Programs

When work is performed in Buncombe, Mecklenburg, or Forsyth counties, the air quality programs in these counties must be notified and their regulations shall be adhered to. Addresses of these agencies can be found on page 3 of DEHNR (3768) form. Phone numbers are listed below.

Buncombe County	(828) 250-6776
Forsyth County	(336) 703-2440
Mecklenburg County	(704) 336-5430

3. Emergency Departments

Notify the local emergency medical services, police and fire departments in writing of the type and scope of work being performed and request these departments make an inspection prior to beginning the work.

4. Licenses

Maintain current licenses for 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.

5. A courtesy notification for any amount of asbestos, regulated or non-regulated, to be removed shall be sent to the HHCU 10 working days prior to the start date of the asbestos removal.

SECTION 01410

AIR MONITORING - INDUSTRIAL HYGIENE FIRM

1.01 GENERAL

A. The owner shall be responsible for the coordination and contracting of an industrial hygiene firm. The owner will pay for the services of the industrial hygiene firm.

B. Air monitoring shall be done under the direct supervision of a North Carolina accredited supervising air monitor (SAM), except for sampling performed by the contractor to satisfy OSHA requirements.

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

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

E. The industrial hygiene firm shall submit copies of their N.C. accreditations and documentation on respiratory protection training to the designer prior to the award of the contract.

F. If specific project activities are assigned to an air monitor, the SAM is expected to be in direct control and responsible for industrial hygiene work completed on the project. The SAM shall approve and sign all air monitoring results performed by the air monitor. The SAM signature must be an original. No rubber stamp signature shall be accepted.

G. Employees of the HHCU shall have right of entry into the project. The HHCU's SAM shall have final authority over the industrial hygiene firm on the project.

1.02 DESCRIPTION OF WORK

A. The industrial hygiene firm shall offer expertise to the designer and contractor, but is not directly responsible for the performance of the job.

B. At the job site, the industrial hygiene 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, and make recommendations in writing to the designer and contractor.

C. The industrial hygiene firm is responsible for overseeing the protection of the environment from contamination, protection of persons in adjacent areas, and assurance that the areas are acceptable for occupancy.

D. The industrial hygiene firm has the authority to direct the contractor relative to safety and environmental concerns. This includes stopping the work if necessary. All directions and comments made by the industrial hygiene firm to the contractor shall be written with a copy to the designer.

E. The industrial hygiene firm shall furnish the contractor a copy of his field report within 24 hours of the visit. Copies of field notes and reports of observations shall be kept in project logbook.

F. The SAM shall review and make comments to the designer on the submittals listed in Section 01043.

G. The SAM shall approve any change in contractor's respiratory protection. This includes a review of the historical data.

H. The industrial hygiene firm is to conform to the contractor's schedule and shall respond to necessary changes provided an advance notice is given as outlined in Section 01043.

I. The industrial hygiene firm's project monitor shall furnish designer and contractor with a pager or mobile phone number where he can be reached quickly at all times.

J. The industrial hygiene firm shall notify the designer and contractor, in writing, of any failed clearance visits.

K. At the completion of the project, the industrial hygiene firm shall prepare a report describing the assessment of the project, all air monitoring data, acceptance letters, calibration records, and a description of the project as it proceeded to completion and submit four copies of the report to the designer.

1.03 AIR MONITORING

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

1. Contamination of the building outside of the 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 contractor and respiratory protection provided for employees are adequate.

B. Work Area Airborne Fiber Levels: The owner's industrial hygiene firm will monitor airborne fiber levels in the work area. 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. Work Area Clearance: To determine if the elevated airborne fiber levels encountered during abatement operations have been reduced to an acceptable level, the industrial hygiene firm will sample and analyze air per Section 01714.

D. 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 contractor's requirement for sampling under the OSHA regulation. All personnel and area sampling conducted by the industrial hygiene firm shall be personally observed. Air sampling pumps shall not be left unattended for extended periods of time.

1. 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 industrial hygiene 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.

      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].

   c. 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.

1. 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 industrial hygiene firm on personnel do not satisfy the contractor's responsibility under OSHA.

2. All final area air sampling will comply with all State and Federal requirements in measuring airborne asbestos following an abatement action.

3. Air samples will be analyzed and results made available as per the AHMB Program Rules. Copies of all 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.

4. If TWA samples are being collected by the contractor for the purpose of reducing respiratory protection requirements, the industrial hygiene 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.

E. 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.

F. Daily air samples shall be read on site by a North Carolina Accredited Air Monitor rated as proficient in the AAR Program.

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.

1.02 WATER SERVICE

A. Owner shall supply a source of water. Contractor bears all expense of heating and getting water to the work and decontamination areas.

B. 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 without damage or alteration to existing water piping and equipment.

1.03 ELECTRICAL SERVICE

A. General: Comply with applicable NEMA, NEC and UL standards and governing state and local regulations for materials and layout of temporary electric service.

B. Ground Fault Protection: Provide receptacle outlets equipped with ground fault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.

C. 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.

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

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

F. 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 industrial hygiene firm.

1.04 FIRST AID

A. A minimum of one first-aid kit shall be located in the clean room. Additional first aid kits as the contractor feels is adequate or is required by law shall be located throughout the work area.

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 room of the personnel decontamination unit.

1.06 TOILET FACILITIES

A. Provide temporary toilet facilities to be used by contractor's employees.

1.07 PARKING

A. Park only in areas designated by the owner.

1.08 BUILDING SECURITY

A. Maintain personnel on-site at all times any portion of the work areas are open or not properly secured. Secure work areas completely at the end of each day.

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 01513

NEGATIVE PRESSURE SYSTEM

1.01 GENERAL

A. High efficiency particulate air (HEPA) filter exhaust systems equipped with new HEPA filters for each project shall be used. Exhaust equipment and systems shall comply with ANSI Z9.2-79 and 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). A continuous chart-recorded manometer shall be used to confirm this condition.

C. Additional air filtration devices shall be provided inside the work area 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. Any variations must be approved by the HHCU.

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

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

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. The decontamination unit shall insure that the abatement work area is completely isolated from other parts of the building.

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

C. The contractor shall wet up a work area, load out, and decontamination area as shown in the plans and specifications. Any variations must be approved by the designer. The decontamination facility outside of the work area shall consist of a change room, shower room, and equipment room as described in Section 01563.

D The contractor shall wet clean and/or HEPA vacuum all items and equipment in the work area 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. Critical Barriers: The contractor shall thoroughly seal the work area for the duration of the work. The sealant materials used shall have appropriate fire ratings.

F. The floors will have two layers of 6-mil (minimum) polyethylene plastic sheeting with joints overlapped 24 inches and taped securely. Plastic shall be carried up walls a minimum of 12 inches and secured.

G. The walls will have one layer of 4-mil (minimum) polyethylene plastic sheeting with joints lapped 24 inches and taped securely. Plastic shall be lapped over floor coverings and taped securely.

H. Floors and walls shall be installed in such a manner that they may be removed independently of the critical barriers.

I. Entrances and exits from the work area will have triple barriers of polyethylene plastic sheeting so that the work area is always closed off by one barrier when workers enter or exit.

J. No water may be left standing on the floor at the end of the workday.

K. The contractor shall establish and mark emergency and fire exits from the work area. Emergency procedures shall have priority over established decontamination entry and exit procedures. Audible and visible fire and emergency evacuation alarms shall be installed so as to be heard and seen throughout the entire work area.

L. Integrity of these seals shall be regularly checked and maintained by the contractor.

M. After work area preparation, the contractor shall notify the designer verbally with written follow-up that he is ready for a prework inspection.

N. The Contractor shall take all necessary measures to prevent damage of the interior surfaces inside and outside the work area. The Contractor shall be responsible for any and all damages inside or outside the work area caused by the asbestos abatement operations including water damage, contamination, construction of the containment, or any other activity.

SECTION 01560

WORKER PROTECTION

1.01 GENERAL

A. Provide worker protection as required by OSHA, state and local standards applicable to the work. 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 contractor shall require all persons to remove all street clothes in the changing room of the personnel decontamination unit and put on new disposable coverall, new head cover, 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 area, the equipment room, the load out area, or the cleanroom.

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 as 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.

1.05 ADDITIONAL PROTECTIVE EQUIPMENT

A. If required, powered air purifying respirators (PAPR's) with replaceable HEPA filters, disposable coveralls, head covers and footwear covers shall be provided by the contractor for the owner, the designer, Industrial hygiene 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. 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 MSHA 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 final air clearance test results by the industrial hygiene firm.

C. The minimum respiratory protection for the project during friable gross removal shall be powered air-purifying respirators (PAPR). The minimum respiratory protection for the glovebag removal shall be half-face negative pressure respirator with replaceable HEPA filters.

D. 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 SAM must write a letter to the designer allowing the contractor to reduce respiratory protection.

E. 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.

F. If supplied air respirators are used, the contractor shall provide a minimum of Grade "D" breathing air as set forth in the Compressed Gas Association's "Commodity Specifications for Air," G-7.1. The contractor shall test for Grade "D" breathing air initially and daily thereafter. Daily testing is not needed if the contractor has an air purification system that has CO and organic purging capabilities as well as a continuous CO monitor and alarm calibrated at 10 ppm. The system must be calibrated at least once a week or when it is moved.

G. Provide emergency backup air supply, egress SCBA or egress HEPA filters for each worker in work area at all times when Type-C (supplied air) respirators are required. Breathing air system shall provide one hour of reserve air, calculated for maximum crew size for emergency evacuation.

H. Where Type C respirators are utilized, the contractor is required to have an employee in the vicinity of the source of air. The contractor shall take into account the location of the fresh air intake to ensure no pollutant source is in the vicinity. The audible alarm shall be located where the employees inside and outside containment can hear the alarm.

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

J. 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.

SECTION 01563

DECONTAMINATION UNITS

1.01 DESCRIPTION OF WORK

A. Provide that the personnel decontamination unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the decontamination unit. Contractor shall comply with 29 CFR 1926.1101, specifically paragraph (j) Hygiene facilities and practices for employees.

1.02 GENERAL

Provide separate personnel decontamination units and equipment/loadout decontamination units when practical.

A. Personnel Decontamination Unit

1. Provide a Personnel Decontamination Unit 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 floor of changing room 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 showerhead 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 wastewater to drain. Provide 20-micron and 5-micron wastewater filters in line to drain. Change filters daily or more often if necessary.

8. Visual Barrier: Where the decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque plastic sheeting so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs, max. 16 inches on center, covered with minimum 3/8-inch plywood.

B. Decontamination Unit Contamination:

1. If the air quality in the decontamination unit exceeds 0.01 fibers per cc analyzed by PCM or 70 structures per mm squared analyzed by TEM or its integrity is diminished through use as determined by the designer or industrial hygiene firm, no employee shall use the unit until corrective steps are taken and approved by the designer and industrial hygiene firm.

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 high efficiency particulate air (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 prefilters and clean the inside and outside of the HEPA exhaust units.

D. After polyethylene sheets have been removed from walls and floors, the contractor shall clean all surfaces in the work area with amended water and/or HEPA-filtered vacuum.

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

F. At the completion of the cleaning operation, the contractor's supervisor shall perform a complete visual inspection of the work area to ensure that the work area is dust- and fiber-free. If the supervisor believes he is ready for a final project decontamination inspection, he shall notify the designer.

G. The designer shall contact the industrial hygiene firm and advise the firm of the final project decontamination inspection requested by the contractor.

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

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

J. The industrial hygiene 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.

K. Final air sampling shall not commence until the visual inspection is completed and passed.

L. If the industrial hygiene firm finds that the work area has 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.

M. After the work area is 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.

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

O. After the industrial hygiene 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.

P. Any residual asbestos that may be present after removing critical barriers, that in the designer's judgment should have been cleaned during the precleaning phase prior to installing critical barriers, shall be cleaned and cleared at the contractor's expense.

Q. 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.

SECTION 01714

WORK AREA CLEARANCE

1.01 GENERAL

A. Notification and scheduling of the final inspection during the project is the responsibility of the 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 shall be conducted by the industrial hygiene 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, air samples will be collected by the industrial hygiene firm.

2. During final clearance air monitoring, the accredited air monitor shall use aggressive air sampling techniques using a leaf blower or other device, except in crawlspace areas. See EPA-AHERA regulations (40 CFR Part 763, Subpart E, Appendix A).

3. After completion of the visual inspection and passage of the visual inspection, final air clearance will be performed. Each regulated area of removal greater or equal to 160 square feet or 260 linear feet will be cleared using TEM methods. Regulated areas less than 160 square feet and 260 linear feet will be cleared using PCM methods.

4. Samples to be analyzed using PCM (minimum of five samples using NIOSH 7400 method), then the maximum flow rate is 12 liters per minute, with a minimum sample size of 2000 liters for each sample. Clearance criteria shall be less than 0.01 F/cc for all samples analyzed.

5. Samples to be analyzed using TEM analysis, the Mandatory Transmission Electron Microscopy Method described in 40 CFR Part 763, Subpart E, Appendix F shall be used. Clearance criteria shall be an arithmetic mean less than or equal to 70 structures per square millimeter or a z-test less than or equal to 1.65.

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

7. The industrial hygiene firm shall immediately report the final air sampling clearance results to the designer.

8. The use of the negative pressure system may be discontinued after the industrial hygiene firm instructs the contractor that he has passed the final project decontamination inspection.

SECTION 02080

ASBESTOS REMOVAL

1.01 GENERAL

A. Prior to starting asbestos removal, the contractor's equipment, work area, and decontamination units will be inspected and approved by the designer or designer's representative.

B. All loose asbestos material removed in the work area shall be adequately wet, bagged, sealed and labeled properly before personnel breaks or end of shift.

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 material shall be double-bagged.

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. Contractor shall not place water in storm drains, onto lawns, or into ditches, creeks, streams, rivers or oceans.

1.02. SCOPE OF WORK

Work in this project consists of furnishing of all labor, materials, equipment, and services reasonably incidental and implied for the removal of the asbestos-containing and lead-containing materials listed below from the Haywood County Annex II Building located at 1233 North Main Street in Waynesville, North Carolina. The Contractor shall commence work to be performed under this Contract as notified by the Owner and shall fully complete all work hereunder.
Following are the asbestos and lead-containing materials to be removed from the Building:

- **Brown Floor Tile Glue** – Approximately 2,900 Square Feet
- **12" x 12" White Floor Tile** – Approximately 150 Square Feet
- **Black Floor Tile Mastic** - Approximately 1,850 Square Feet
- **Linoleums and Brown Glue Under Carpet** – Approximately 6,520 Square Feet
- **Pipe Insulation** - Approximately 800 Linear Feet
- **HVAC Duct with White Joint Tape** - Approximately 150 Linear Feet of Duct
- **Built-Up Tar and Gravel Roofing** - Approximately 3,000 Square Feet
- **Lead-Containing Components** - The project will also include the removal of ALL lead wall sheeting and ceramic wall tile in the building.

Abatement areas are illustrated as shown on Drawings D-01, D-02, and D-03 located in

Appendix C. See Technical Specifications and Drawings included in these specifications for additional information.

REMOVAL OF CARPET, LINOLEUMS, FLOOR TILE, AND GLUE/MASTIC

The Contractor shall remove approximately 11,270 square feet of flooring materials from throughout the Upper and Lower Levels of the Building as designated on Drawings D-01 and D-02. The flooring materials to removed include:

- Non-asbestos 9" x 9" floor tile and associated asbestos-containing brown floor tile glue
- Asbestos-containing 12" x 12" white floor tile
- Asbestos-containing linoleums
- Asbestos-containing black floor tile mastic
- Asbestos-containing brown glue under the carpet and linoleum on concrete. All carpet installed directly to concrete in the building shall be removed and disposed of asbestos-containing material and all linoleums and glues/mastics under the carpet also be removed and disposed of as asbestos-containing material.

A. The Contractor shall remove all baseboards, built-in furniture, walls, etc. required to access and remove the asbestos-containing flooring materials.

B. The Contractor has the option of removing the floor tiles, linoleums, glues/mastics, and carpet using non-friable or friable methods.

1. **Non-Friable Method** – If the Contractor employs non-friable methods, 4-mil polyethylene shall be placed a minimum of three feet up each wall for protection of the walls during the removal of mastic. The Contractor shall only use approved non-friable methods (e.g., infrared heating). Open flame burning is prohibited. Barrier tape, warning signs, and negative air exhaust will be employed during removal. Operators of infrared heat machines shall be thoroughly trained in the proper use of the equipment.

2. **Friable Method** – If the Contractor employs friable methods, then the following shall be used: The Contractor shall place two layers of 4-mil polyethylene over all critical barriers, set up a full decontamination unit per these specifications, and place the work area under negative pressure using HEPA negative pressure air filtration units in accordance with Section 01513. One layer of 4-mil polyethylene shall be placed on the walls. Each work area of removal shall be setup as one continuous containment.

C. The floor tiles, linoleums, and carpet shall be removed using wet methods, and the mastics and/or glues will be removed using a low-odor, non-flammable, non-hazardous material approved by the manufacturer for the use of glue/mastic removal. After completion of glue/mastic removal, the Contractor shall use a cleaning solution to neutralize the glue/mastic remover and mop and rinse the floor so that no residue

of the mastic remover or mastic may be left on the floor surface. The cleaner shall be compatible with all typical mastics that may be used after the abatement is complete. The cleaner shall meet all requirements of the mastic remover above.

D. The Contractor shall take all necessary precautions to prevent the spread of the glue/mastic remover from areas outside of the containment. The Contractor will be responsible for all damages to walls and surfaces inside and outside of containment. The Contractor shall be responsible for returning any walls, surfaces, or other items splattered, damaged, or soiled back to original conditions if the Owner so chooses.

E. The removed floor tiles, contaminated carpeting, and glue/mastic removal byproducts shall be immediately placed in 6-mil polyethylene bags, double bagged, or sealed in 2 layers of polyethylene, and properly labeled. Workers shall remove the asbestos-containing flooring materials under negative pressure. Workers shall use respiratory protection and protective clothing when performing all removal procedures.

F. The Contractor shall add cat liter, oil-sorb, or other material approved by the Asbestos Designer to the used glue/mastic removal solution, so that no free standing liquid will be left in the waste disposal bags.

G. The Contractor shall wet wipe and clean all surfaces prior to the final inspection. All areas of regulated (friable) removal will be cleared using air clearance protocol in Section 01704 “Work Area Clearance”. The Owner will be responsible for the first clearance. The Contractor shall pay air monitoring fees and TEM sample analysis fees for all additional clearances.

REMOVAL OF PIPE INSULATION

The Contractor is responsible for removing **ALL** asbestos-containing pipe insulation from the upper and lower levels of the Haywood County Annex II Building. Approximately 120 linear feet of roof drain pipe insulation is to be removed from the upper level east side newer building section. Approximately 650 linear feet of pipe insulation is to be removed from the lower level west side original building section. All pipe insulation is to be removed from the building.

A. It is the contractor’s responsibility to locate and remove all asbestos-containing pipe insulation in the building.

B. Removal of the pipe insulation shall be conducted using one of the following methods:

1. Glovebag methods in accordance with OSHA 29 CFR 1926.1101, **or**

2. Wrapping no more than 15 linear feet of piping in two layers of 6-mil polyethylene, glovebagging two ends, sealing the ends of the TSI, and cutting the bare piping. **Roof drain pipe insulation shall be removed without disturbing the piping. Roof drain piping shall remain intact.** The Contractor shall place

on layer of 4-mil polyethylene under the areas of removal during glovebag removal to catch any fallen debris. Any fallen debris shall be immediately cleaned using wet methods and and HEPA vacuums, **or**

3. Full Containment with two layers of 4-mil poly on the walls and critical barriers, two layers of 6-mil on the floors, and one layer of 4-mil poly on the ceilings. The containments shall be placed under negative pressure using a negative-pressure, air-filtration system in accordance with Section 01513. A portable personnel decontamination unit shall be set up in accordance with Section 01563. The containment shall be built of a rigid frame of wood or steel. Sections of the containment placed outside of the building or on the walkways shall be structurally sound to prevent damage by weather during the time of the work to be performed. The construction plans for the containment shall be sent to the designer for review prior to construction. Review of the containment construction plans does not relieve the contractor of responsibility for the integrity of the containment. Any allowances to containment setup shall be sent to the designer for approval before implementation.

The contractor shall not conduct asbestos removal on any hot water pipe that exceeds 130 degrees Fahrenheit or which exceeds the manufacturer's requirements for heat resistant polyethlene or glove bags.

A. The Contractor shall thoroughly wet the TSI to be removed prior to cutting in order to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water or removal encapsulant to penetrate material thoroughly.

B. The removed ACM debris, removal byproducts, and glovebags shall be immediately placed in 6-mil polyethylene bags, double bagged and properly labeled. Workers shall use respiratory protection and protective clothing when performing all removal procedures in accordance with OSHA 29 CFR 1926.1101.

C. The Contractor shall wet wipe and clean all surfaces prior to the final inspection. After final cleaning and final visual inspection, the Contractor shall encapsulate the substrate where asbestos has been removed with a slightly milky-colored encapsulant approved by the manufacturer for the use as an asbestos encapsulant. Coverage shall be as recommended by the manufacturer.

D. Area air samples will be collected during removal. Removal areas greater than 160 square feet or 260 linear feet will be cleared using TEM AHERA protocol. The Owner will be responsible for the first clearance per work area. The Contractor shall pay air monitoring fees and TEM sample analysis fees for all additional clearances per work area. Areas less than or equal to 160 square feet or 260 linear feet will be cleared using PCM AHERA protocol. If the Contractor contaminates an area, he shall clean up the area at no cost to the Owner.

The pipe insulation used in the building is a combination of asbestos and non-asbestos insulation. If other asbestos-containing pipe insulation is encountered during the renovation or other activities, work is to immediately stop and proper precautions used to abate the pipe insulation.

REMOVAL OF HVAC DUCT WITH WHITE JOINT TAPE

The Contractor shall remove All metal HVAC ducts with white asbestos-containing white joint tape from the building. Approximately 25 linear feet of HVAC duct with the tape is visible in the upper level conference room area. The remaining duct (approximately 150 linear feet of duct) with asbestos tape is located throughout the lower level original building section. It is the contractor's responsibility to locate and remove all HVAC ducts with white asbestos-containing joint tape from the building.

A. Non-Friable removal methods shall be used to remove the ducts from the building.

B. The metal ducts may be cut in areas where no asbestos tape is present and then unfasten from the ceiling with tape intact. The Contractor shall immediately wrap the duct in two layers of 6-mil polyethylene and properly label for disposal in an asbestos approved landfill.

C. A layer of polyethylene shall be placed on the ground below the duct removal areas to capture any ACM debris that may fall. The ducts shall be carefully lowered to the ground in a manner not to cause the ACM tape to become friable. The waste shall be properly labeled and stored in a polyethylene lined disposal container.

REMOVAL OF ROOFING MATERIALS

The Contractor shall remove approximately 3,000 square feet of asbestos-containing built-up tar and gravel roofing materials from the newer east side building section. The asbestos roofing is located under a black rubber membrane layer that is also to removed and disposed of to access the asbestos roofing layers.

A. Any roofing removal shall be strictly coordinated with owner to allow for immediate installation of new roofing materials. No roofing is to be removed without direct approval from the building owner.

B. Roofing removal shall be performed using non-friable methods. The Contractor shall remove the ACM roofing using non-mechanical hand tools and wet methods. The contractor will meet the requirements listed under the OSHA standard 29 CFR 1926.1101 for roofing. Contact the HHCB concerning the need for permit, fees and accredited roofing workers and supervisors when removing regulated roofing material.

C. All built-up roofing layers are to be removed down to the white gypsum substrate.

D. All ACM roofing materials shall be double bagged in 6-mil polyethylene bags and carefully lowered to the ground in a manner not to rupture the bags. The waste shall be properly labeled and stored in a polyethylene lined disposal container.

E. The Contractor shall clean up all dislodged roofing material on the roof, ground, etc. Dislodged roofing shall be treated as ACM debris and placed in properly labeled 6-mil polyethylene bags for disposal. Small pieces of ACM roofing debris shall be HEPA vacuumed from the surface.

Typical sample analysis results of the asbestos-containing materials building listed below.

Material	Asbestos Content
Floor Tile/Carpet Glue/Mastic	2 - 3% Chrysotile
Pipe Insulation	15 – 70% Chrysotile
White HVAC Joint Tape	60% Chrysotile
Built-up Roofing	10% Chrysotile

The inspection report is available for review.

REMOVAL OF LEAD-CONTAINING COMPONENTS

The following components were found to contain lead greater than 1.0 mg/cm² and are to be removed from the building and properly dispose of:

A. There is Lead Sheeting inside the plaster walls of upper level Room #5 (Old X-Ray Room). The contractor is responsible for demolition of the plaster to access the lead sheeting for removal and disposal.

B. All ceramic wall tile in the building is to be properly removed and disposed of as lead-containing material. The ceramic tile is located in all restrooms, Room #12 (Old OR Room), janitor closets, and lower level break room in the building.

The Contractor shall follow all applicable Federal, State, and Local regulations pertaining to the removal and disposal of lead-containing materials.

Any measurements or material amounts listed are given as estimates. The contractor is responsible for his/her own measurements and the removal of the asbestos-containing materials and lead-containing components indicated in this project.

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 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.

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) 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 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 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.

APPENDICES

APPENDIX A

PREWORK ASBESTOS INSPECTION CHECKLIST

APPENDIX A

PREWORK ASBESTOS INSPECTION CHECKLIST

Name of State Facility: _____

Project Name: _____

Project ID Number:_____

Date of Inspection: _____ Pass: _____ Fail: _____

		YES	NO
I.	**DOCUMENTS**		
A.	Asbestos Removal Permit/NESHAP Notification	_____	_____
B.	Accreditation Documents for Workers & Supervisors	_____	_____
C.	Asbestos Plans and Specifications	_____	_____
D.	Air Monitoring Data	_____	_____
E.	Waste Shipment Records	_____	_____
F.	Sign-in Sheets and Bound Book for Comments	_____	_____
G.	Calibration Record for Grade "D" Air	_____	_____
H.	Items listed in Section 01043 of Specification	_____	_____
II.	**PPE SUPPLIES**		
A.	Tyvek Clothing	_____	_____
B.	Rubber Boots	_____	_____
C.	Respirators with HEPA Filters	_____	_____
III.	**CLEAN ROOM**		
A.	Entry Curtains	_____	_____
B.	Emergency Phone Numbers Posted	_____	_____
C.	First Aid Kit	_____	_____
D.	Asbestos Signs	_____	_____
E.	Decontamination Procedures Posted	_____	_____
F.	Fire Extinguisher	_____	_____
IV.	**SHOWER ROOM**		
A.	Polyethylene Curtains	_____	_____
B.	Hot/Cold Water & Operational	_____	_____
C.	Soap & Towels	_____	_____

D.	Waste Water Filter Pump Operational	_____	_____
E.	Extra Five-Micron Size Filters	_____	_____
F.	Filtered Waste Water to Sanitary Sewer	_____	_____

V.	**WORK AREA**	**YES**	**NO**
A.	Removable Items Out of Area	_____	_____
B.	Non-removable Items Protected	_____	_____
C.	Critical Barriers Installed	_____	_____
D.	Polyethylene Curtains	_____	_____
E.	Polyethylene on Walls/Floors as Specified	_____	_____
F.	HVAC off	_____	_____
G.	Air Filtration Devices in Place and Operational	_____	_____
H.	Air Exhausted to Outside	_____	_____
I.	Electricity Locked and Tagged Out	_____	_____
J.	Temporary Power Installed with GFCI	_____	_____
K.	Fire Extinguishers	_____	_____
L.	Emergency and Fire Exits Marked	_____	_____
M.	Audible Alarms Operational	_____	_____
N.	Toilet Available	_____	_____

VI.	**EQUIPMENT**		
A.	Safety Equipment	_____	_____
B.	HEPA Vacuums	_____	_____
C.	Waste Disposal Bags	_____	_____
D.	Airless Sprayer with Water Source	_____	_____
E.	Cleaning Equipment	_____	_____
F.	Glove Bags	_____	_____
G.	Emergency Power Generator (if required)	_____	_____
H.	Temporary Lighting	_____	_____

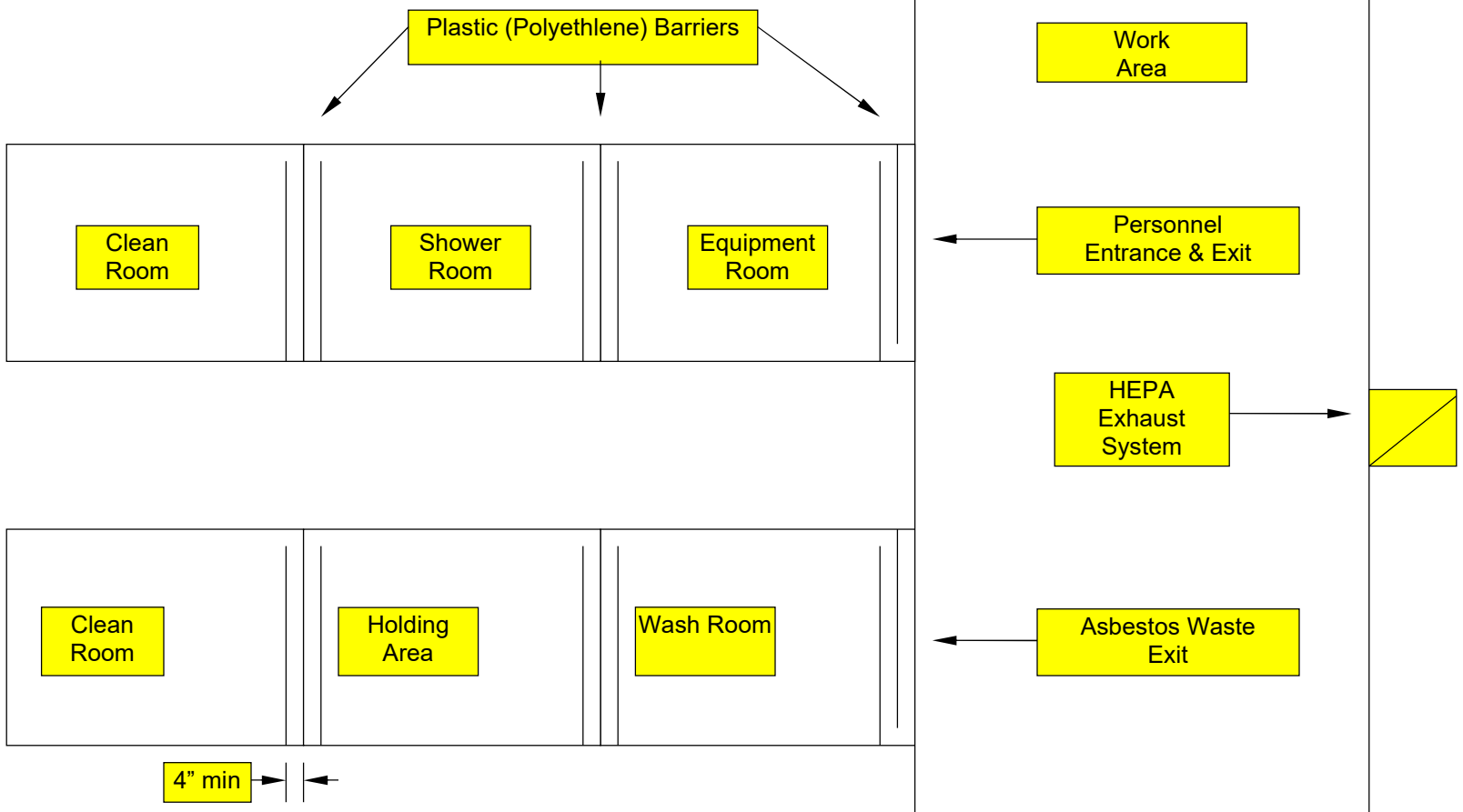
VII.	**OTHER**		
A.	_____	_____	_____
B.	_____	_____	_____
C.	_____	_____	_____
D.	_____	_____	_____

_____ _____
Asbestos Design Consultant *Date*

_____ _____
Asbestos Contractor's Representative *Date*

APPENDIX B

DECONTAMINATION AREA ARRANGEMENT



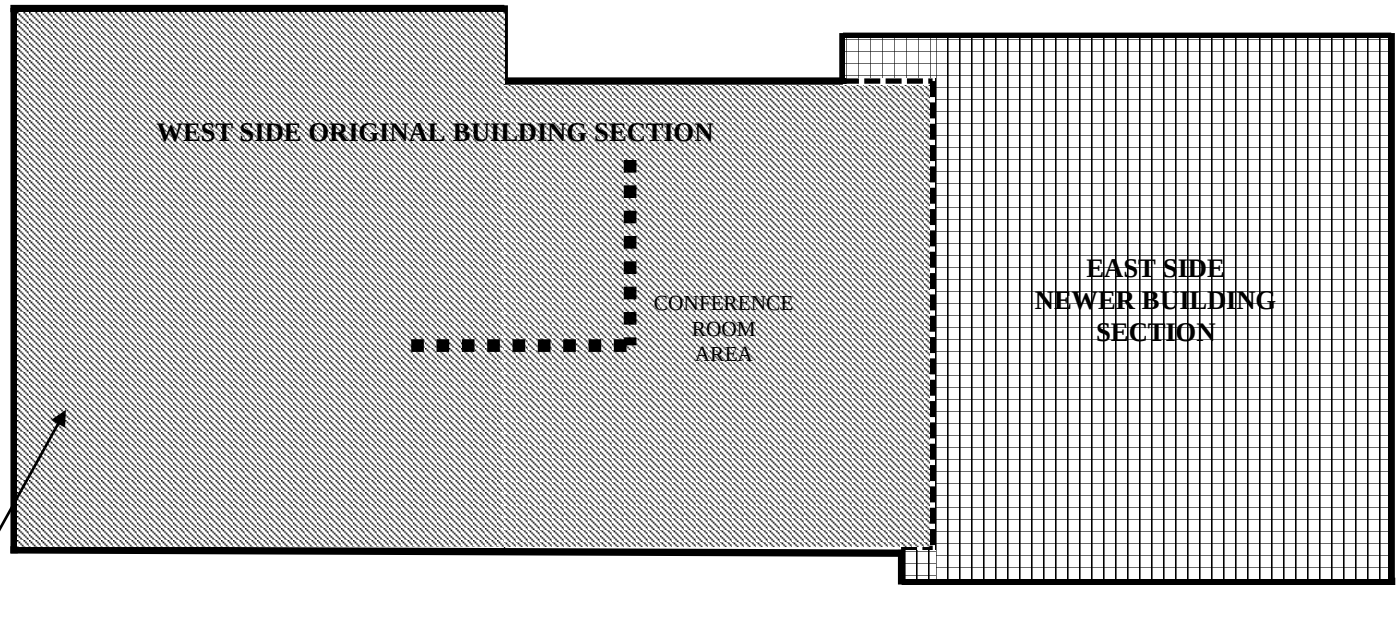
Decontamination Area Arrangement - Plan View

Drawn By: GAD	Date: 01/02/96	N.C. Department of Administration State Construction Office Raleigh, N.C. 27601

APPENDIX C

ABATEMENT DRAWINGS

UPPER LEVEL



Represents Approximate Areas Where Contractor Is To Remove All Carpeting, Asbestos-Containing and Non-Asbestos-Containing Floor Tile, and Asbestos-Containing Brown Floor Tile/Carpet Glue.

Represents Areas Where Contractor Is To Remove All Carpet, Asbestos-Containing Linoleums and Floor Glue/Mastic, and All Asbestos-Containing Roof Drain Pipe Insulation. All Carpet and on Concrete To Be Disposed Of As Asbestos-Containing Waste.

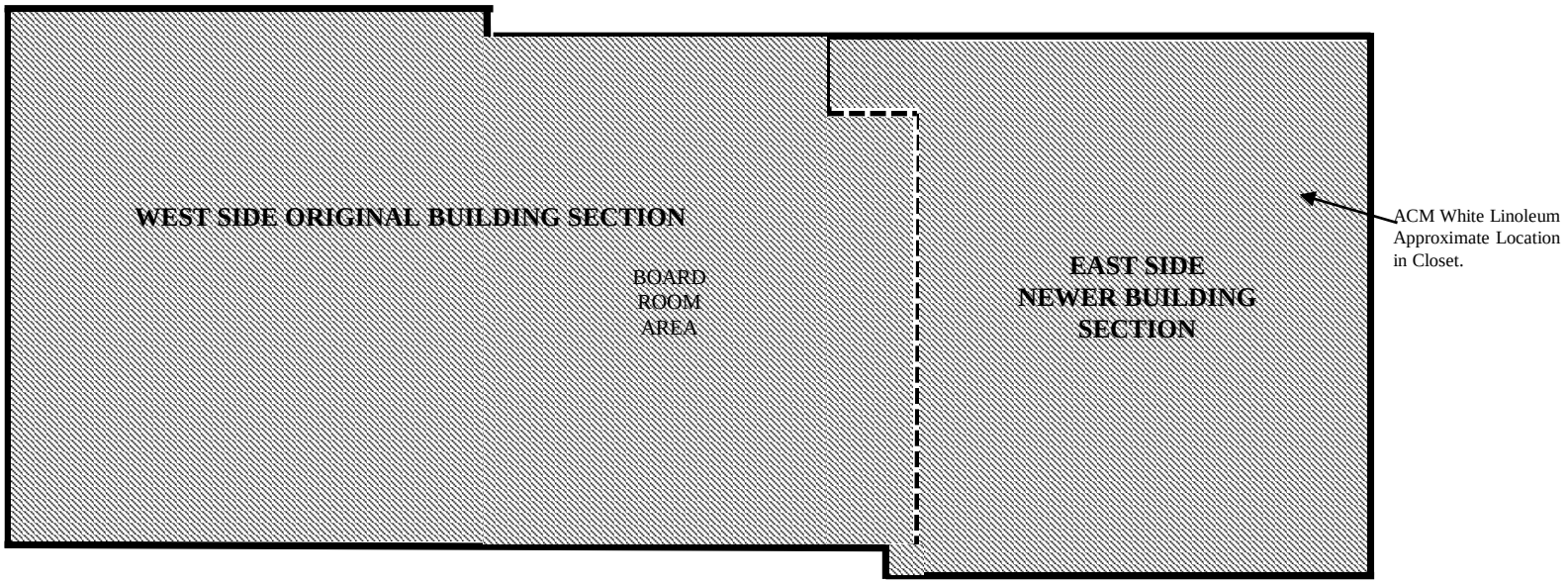
Represents Approximate Location of HVAC Duct With Asbestos-Containing Joint Tape. Contractor Is To Remove Duct With Joint Tape Intact.

Contractor Is Also To Remove All Ceramic Wall Tile From All Wet Areas (Restrooms, Old OR Room #12, Etc.) and Lead Sheeting From Walls in Old X-Ray Room #5. Removal Should Be Conducted Using EPA's Lead Safe Work Practices.

Asbestos Bulk Sampling Locations	
Haywood County Annex II Building	
Waynesville, NC	
Scale: No Scale	Drawing #: D-01
Date: 5/9/2020	
Drawn by: MGC	
Affinity #12061IN	

Affinity Energy & Environmental Engineers, PA

LOWER LEVEL



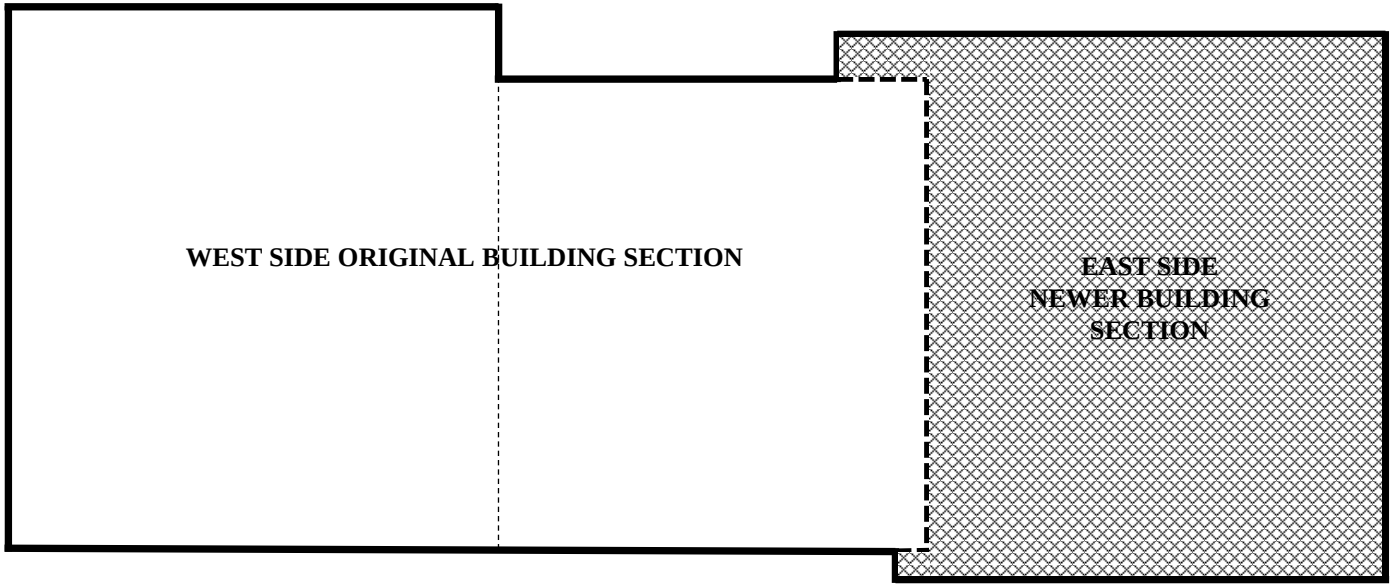
Represents Areas Where Contractor Is To Remove **All** Carpeting, Floor Tile, Asbestos-Containing Brown and Black Floor Tile/Carpet Glues/Mastics, Asbestos-Containing Pipe Insulation, HVAC Duct With Asbestos-Containing White Joint Tape, and Linoleums. All Carpet on Concrete To Be Disposed Of As Asbestos-Containing Waste.

Contractor Is Also To Remove All Ceramic Wall Tile From All Wet Areas (Restrooms, Break Rooms, Etc.) Following EPA's Lead Safe Work Practices.

Asbestos Bulk Sampling Locations	
Haywood County Annex II Building	
Waynesville, NC	
Scale: No Scale	Drawing #: D-02
Date: 5/9/2020	
Drawn by: MGC	
Affinity #12061IN	

Affinity Energy & Environmental Engineers, PA

ROOF



Represents Areas Where Contractor Is To Remove Asbestos-Containing Built-up Tar and Gravel Roofing. This work Is To Be At The Direction Of The Owner So That The Interior Of The Building Is Protected From Weather.

Asbestos Bulk Sampling Locations	
Haywood County Annex II Building	
Waynesville, NC	
Scale: No Scale	Drawing #: D-03
Date: 5/9/2020	
Drawn by: MGC	
Affinity #12061IN	

Affinity Energy & Environmental Engineers, PA