



ASBESTOS WORK PLAN
GUILFORD COUNTY SCHOOLS - GRIMSLEY HIGH SCHOOL
EXTERIOR DOOR AND FRAME REPLACEMENT PROJECT
&
AUDITORIUM WINDOW REPLACEMENTS PROJECT
GREENSBORO, NORTH CAROLINA
S&ME Project No. 4358-14031

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This asbestos work plan is provided to Ricky L. Loman, AIA Architect. The work described in this work plan is based upon information provided to S&ME, Inc. (S&ME) by Guilford County Schools. This work has been conducted in general accordance with S&ME Proposal Number: 43-1400267. Only the client, Ricky L. Loman Architect, the Owner, Guilford County Schools, the prospective bidders, for bidding purposes only, and the General Contractor and their asbestos abatement contractor chosen to perform the work may rely upon this document. This document applies to asbestos abatement activities related to specific asbestos containing materials installed at specific locations as described herein and is use for this project only. Those specified above may rely upon this work for the specific project for which it was prepared. S&ME disclaims any liability for reliance on this work by others, or for any other project. Work associated with this project is subject to the terms and conditions of the proposal specified above.

ASBESTOS WORK PLAN

PART 1 – GENERAL

Employees working in structures with Asbestos-Containing Materials (ACM) and Presumed Asbestos-Containing Materials (PACM) (as well as any other employer using such structures), are subject to the Occupational Safety and Health Administration's worker protection Standards for General Industry and/or the Construction Industry (29 CFR 1910.1001 and 29 CFR 1926.1101 respectively). These regulations mandate that building owners and employers take steps to protect employees and building occupants from asbestos exposure.

The Environmental Protection Agency (EPA) requires public K-12 schools (such as Guilford County Schools) to adhere to distinct regulatory requirements to protect school children and school employees from asbestos exposure through the Asbestos Hazard Emergency Response Act (or AHERA) regulations. In addition to other requirements, the AHERA regulation requires that asbestos professionals (including any worker, contractor or supervisor) working with asbestos-containing building materials in schools to be accredited. Likewise, the AHERA regulation mandates the use of specific post-removal clearance procedures.

Additionally when public or commercial facilities (such as schools) are subjected to renovation activities, compliance with the National Emission Standards for Hazardous Air Pollutants (or NESHAP) 40 CFR Part 61 Subpart M is mandated. NESHAP requires building owners to assess building materials that may be disturbed by renovation activities and remove friable asbestos containing materials. The asbestos inspections mandated by NESHAP must classify identified Asbestos Containing Material as to its friability, and to the likelihood of the ACM becoming friable during the planned renovation. According to the NESHAP, friable ACM is considered to be a Regulated Asbestos-Containing Material (RACM). When RACM is present or created during renovation or demolition activities and it exceeds certain thresholds, (currently 160 square feet and/or 260 linear feet and/or 35 cubic feet of RACM) then the activity is subject to additional NESHAP mandates such as:

- Permitting,
- Utilization of trained and accredited personnel for removal,
- Special asbestos emission control techniques,
- Specialized waste disposal/manifesting, and
- Record keeping

The State of North Carolina has established the Asbestos in Buildings program which further regulates asbestos management activities in the state. This Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, Division of Public Health has specific asbestos statues and rules controlling asbestos work in the state. For example, the HHCU must be notified of most friable asbestos removal operations and plans to demolish buildings for commercial purposes in the state. Additionally, the HHCU has promulgated rules that mandate that asbestos removal operations and management of ACM beyond Operations and Maintenance activities in the state must be performed by North Carolina-accredited asbestos professionals.

Based on asbestos sampling performed for the Owner by others, bulk samples collected from various door caulk, window caulk and glazing compounds associated with the Grimsley High School

Exterior Door and Frame Replacement Project and the Auditorium Window Replacements Project contained up to 5 percent Chrysotile asbestos. The identified ACMs were determined to be non-friable at the time of sampling. However, the removal of the door and window components will likely result in these materials becoming friable and therefore regulated under AHERA and NESHAP regulations. This work plan was prepared to aid the Owner in efforts to comply with these regulations.

Project Information

The following information is applicable to this project:

Building Owner: Guilford County Board of Education
712 N. Eugene St.
Greensboro, NC 27401
Phone: 336-370-8100

Facility: Grimsley Senior High School
801 Westover Terrace
Greensboro, NC 27408
Phone: 336-370-8180

Date of Construction: Various, Main Building - 1929

Structure Size: 379,315 S.F. (per Guilford County Real Property Data website)

Inspector of Record: John J. Tesh – North Carolina Accredited Inspector No 12353
Date of Sampling – 3/11/2014

Codes, Regulations, and Standards

1. Except to the extent that more explicit and more stringent requirements are written directly into the Contract Documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herein.

a. Federal Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

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

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 the
Federal Regulations

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

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

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

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

Specification for Accident Prevention Signs and Tags
Title 29, Part 1910, Section 145 of the
Code of Federal Regulations

DOT: U.S. Department of Transportation, including but not limited to:

Hazardous Substances
Title 29, Part 171 and 172 of the
Code of Federal Regulations

EPA: U.S. Environmental Protection Agency (EPA), including but not limited to:

National Emission Standard for Hazardous Air Pollutants (NESHAP)
National Emission Standard for Asbestos
Title 40, Part 61, Sub-part A, and Sub-part M
(Revised Sub-part B) of the Code of Federal Regulations

40 CFR Part 763, the Asbestos Hazard Emergency Response Act (AHERA)

- b. North Carolina Requirements: The State of North Carolina including but not limited to:

North Carolina Occupational Safety and Health Administration, North Carolina
Department of Labor

NC Occupational Safety and Health Standards for Construction Industry 29 CFR
1926.1101

North Carolina Solid Waste Management Rules, 15A NCAC 13B

North Carolina Department of Health and Environmental Control Regulations regarding Workers Compensation Commission Requirements

North Carolina Asbestos Hazard Management, 130A NCAC Asbestos 19, 130A444-452

North Carolina Asbestos Hazard Management Program Rules, 10A NCAC 41C .0600 - .0611

Licenses: Maintain current licenses as required by the State of North Carolina for the removal, transporting, disposal or other regulated activity relative to the work of this Contract.

- c. City of Greensboro and Guilford County, North Carolina: Abide by all requirements which govern asbestos abatement work, hauling and disposal of asbestos waste materials and all business license, including permits, building code, and fire protection requirements.

PART 2 – PRODUCTS

As noted in other parts of this Document.

PART 3 – SUBMITTALS

The entity performing the asbestos abatement work will provide three copies of the submittals to the Owner in a three-ring binder as follows:

Pre-Job Submittals

1. Pre-Job Submittals:
 - a. A directory of contacts, including the Abatement Contractor's Corporate Office telephone and fax numbers, the Abatement Superintendent's cellular telephone numbers, the Project Site Foreman's cellular telephone numbers. In addition submit email addresses for these individuals.
 - b. Proof of Insurance (General Liability, Asbestos Specific Liability).
 - i. Asbestos Removal Liability Insurance: In addition to general insurance the Asbestos Abatement Contractor shall purchase from and maintain such insurance as will protect the abatement Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor is legally liable, whether such operations be by the Contractor or by a

subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

- ii. Asbestos Removal Liability Insurance including contractually assumed liability and completed operation coverage of \$1,000,000 per project. The coverage shall be on an “occurrence basis with no sunset clause.”
 - iii. The insurance required shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverage shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. The policy shall name Ricky L. Loman, AIA Architect and S&ME, Inc. as an additional insured and shall also provide no less than thirty days prior written notice of cancellation or material change. All insurance policies must be issued by insurers licensed to do business in the state in which the job site is located and have a Best Insurance Guide rating of A/X or better.
- c. Copy of current North Carolina Contractor’s License.
 - d. A copy of the project NESHAP application and the resulting permit for the project.

On-Site Documentation

- a. A roster of workers and supervisors.
- b. A copy of each person’s North Carolina asbestos Worker’s or Supervisor’s accreditations and the Workers’ and Supervisors’ NC Asbestos Accreditation Cards.
- c. A copy of each person’s medical authorization to work with asbestos and to wear a respirator.
- d. A copy of the Contractor’s Respiratory Protection Program, including the rationale and documentation for respirator selection on this job.
- e. A copy of the Contractor’s Hazard Communication Program, including:
 - i. Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for asbestos and all chemicals used on site.
 - ii. A chemical inventory of chemicals on site.

- f. A copy of the State of North Carolina NESHAP Notification and Permit for the project.

Post-job Submittals

Post-job Submittals: Prior to request for payment, the Asbestos Abatement Contractor shall furnish Post-job submittals. Submit 3 copies to the Owner in a three-ring binder. The Submittals shall be submitted within forty-five (45) days of work completion and shall include:

- a. Landfill Documentation and Receipts (Waste Manifest, Waste Shipment Record, Chain of Custody Report).
- b. A copy of the permit and any revisions there-of for the project.
- c. Daily Log of Workers, Visitors and Work Activities (completed daily by supervisor). The supervisor shall document engineering controls and the methods that were used to protect health and the environment.
- d. Alphabetized listing of all Workers and Supervisors actually utilized for the project (excluding all others). The list will include the Workers' and Supervisors' North Carolina Accreditation number, Accreditation expiration date, Date of last Fit Test and Date of last Medical Qualification.
- e. Copies of Fit Tests, Medical Qualification, and North Carolina Accreditation for all Workers and Supervisors utilized for the Work.
- f. Personnel air monitoring records performed at the site for purposes of OSHA compliance

PART 4 – EXECUTION

The purpose of this project is removal of asbestos-containing caulk and/or glazing compounds from doors, door frames, windows and window frames from the areas specified elsewhere in the project specifications and drawings. As per the provisions of the Occupational Safety and Health Administration procedures for Class II asbestos work, the use of wet methods and HEPA vacuuming and prompt cleanup of debris shall be utilized to control airborne asbestos fiber concentrations where asbestos is being disturbed. Complete the abatement of these materials using the following procedures:

1. The Contractor shall utilize only North Carolina Accredited Asbestos Workers and Supervisors for all phases of the asbestos project.
2. The Contractor shall ensure that all Workers and Supervisors utilized for the Project use at a minimum NIOSH-approved ½ Face Air Purifying Respirators

equipped with disposable N-, P-, R-100 filters and disposable coveralls during all active asbestos removal, disposable and handling activities. Powered air purifying respirators (PAPRs) are required unless/until the contractor can supply historic data that supports his choice of respiratory protection. The contractor has the option to utilize respirators that provide a higher protection factor than is indicated by the historical data. Workers shall wear disposable protective clothing when performing activities which may result in asbestos disturbance

3. Identify and remove any hardware that is to be reinstalled or that shall be returned to the Owner. Pre-clean the interior and exterior surfaces below the affected doors and windows as well as nearby horizontal surfaces (e.g. window sills, floors, landings, etc.) in each window and door replacement area with a HEPA filtered vacuum.
4. The Contractor shall establish a Regulated Area for the removal of all Asbestos-Containing materials. The Contractor shall establish a decontamination area adjacent to each regulated area meeting the requirements of OSHA 1926.1101(j)(2). Workers shall HEPA vacuum and remove protective clothing in this area. As per the provisions of the Occupational Safety and Health Administration procedures, the Contractor shall perform the work as indicated below:

Asbestos Removal Operations: Caulking and Glazing Compound Procedures

Remove those doors and windows designated on the plans prepared by the Ricky L. Loman, AIA Architect. The contractor may submit an alternate procedure for review and written approval by the Designer. This submittal shall be in writing and have sufficient detail to indicate that the work can be accomplished according to applicable regulations and that health and the environment will be protected. Do not proceed with any alternate procedure without written approval from the Owner or the Owner's representative.

The Contractor shall establish a regulated area for the removal of all asbestos materials. Signs and barrier tape shall be utilized to establish the regulated area on the interior and exterior of the building.

Completely isolate the work area from the inside of the building with one or more layers of polyethylene sheeting, at least 6-mil in thickness, securely taped in place so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Utilize frosted or black polyethylene sheeting in areas where asbestos activities may disrupt educational activities – Coordinate with the Project Architect and Owner. Supply fire rated sheeting if required by local codes. Should the any portion of the building interior area beyond the work area(s) become contaminated with dust or debris as a result of the work, immediately notify the Project Architect and thoroughly clean those areas in accordance with the procedures outlined below until the area is decontaminated. Perform all such required cleaning or decontamination at no additional cost to Owner.

Six mil sheet polyethylene shall be placed on the floor inside the building and on the ground outside the building prior to handling any door/window caulking and glazing materials. Each exterior work area for caulking and glazing compound material removal shall be equipped with durable impermeable dropcloths continuously secured to the structure and staked or weighted to the ground in a manner sufficient to prevent movement. The sheeting shall extend from the building a minimum of 10 feet from the exterior wall. Extend the sheeting beyond 10' as needed to receive all debris dislodged from window/door removal operations. The sheeting inside the building shall extend to the barrier that establishes the regulated area. Dropcloths may not be moved or otherwise reused after installation for asbestos operations.

After work area preparation is complete, the Abatement Contractor shall coat any visible caulking/window glazing compound with a lockdown encapsulant to bind asbestos materials to the window/door components. Protect building components that shall remain from the encapsulant. The contractor shall be responsible for restoring any existing finishes scheduled to remain that are that are discolored or damaged by the encapsulant. The lockdown encapsulant shall be tinted so the workers and the Owner (or Owner's representative) can verify that the asbestos materials have been fully coated. The Contractor shall consider the environmental conditions, such as temperature and humidity, when selecting and applying this encapsulant. Workers shall wear respiratory protection and disposable coveralls after the regulated work area has been established.

After the encapsulant has dried, the workers shall carefully install duct tape and/or polyethylene sheeting sealed with duct tape over the any glazed window or door lights and their respective glazing compounds. Glass, both interior and exterior sides, shall be completely coated to prevent breakage. The Project Architect shall be notified 48 hours in advance of the completion of window/ door preparation in each work area so that an inspection might be scheduled if desired.

After the window and door preparations have been inspected, the Contractor shall perform demolition as necessary to remove the entire component intact. The component shall be removed to the outside of the building. Any debris resulting from this demolition, masonry or otherwise, shall be wetted and collected for disposal as asbestos waste. After removal, the entire window or door units shall be wrapped in a minimum of two (2) layers of 6-mil polyethylene and labeled per applicable regulations for transport and disposal. Remove any residual caulk present at the specified door or window frames/openings. Continue to clean the door/window opening until all visible traces of caulk have been removed. Protect the interior and exterior surfaces from damage. Utilize HEPA-filtered vacuums to clean asbestos-suspect dust and debris from all surfaces in each regulated area. The Project Architect shall be notified 48 hours in advance of the completion of window/door abatement activities in each work area so that an inspection might be scheduled if desired.

When the work has been completed and successfully passed the Contractor's Supervisor's visual inspection notify the Project Architect or Owners Representative and receive approval prior to removing the dropcloths and critical barriers. Guilford County Schools reserves the right to have any and all asbestos work areas inspected for asbestos-suspect debris prior to the removal of the regulated area.

Remove all asbestos waste from the site, making provisions to saturate any waste with water. Containerize, label, manifest, and transport to an approved disposal facility and dispose of the waste in compliance with National Emission Standards for Hazardous Air Pollutants requirements and all other applicable federal, state and local laws and regulations. **Store asbestos waste only in secure fully enclosed containers. Transport of asbestos waste from the work area to the disposal vehicle shall be performed in covered containers. The route and times of egress shall be coordinated with the Owner.**

5. The project shall be deemed complete only after:
 - a. Removal and disposal of all specified areas of asbestos-containing materials, used disposable materials, dust and debris,
 - b. Successful visual inspection by the project Contractor's Supervisor (and Project Architect or Owner's representative –if desired by the Owner),
 - c. Air samples, if desired by the Owner, meeting the clearance criteria,
 - d. Removal and disposal of the temporary containment components as asbestos waste, removal of residual duct tape and spray adhesive from and repair of any surface scheduled to remain, and
 - e. Submission of Post-Project Submittals with a Designer review notation of no exceptions taken.
6. The Contractor shall schedule and coordinate the work so that reinstallation of replacement windows / doors can take place.
9. Asbestos Quantities:

The Contractor shall be responsible for verifying field conditions and the quantity of all specified areas of asbestos-containing materials in such a manner to satisfy the requirements of the work.
10. Potential Asbestos Hazard

The disturbance or dislocation of asbestos-containing materials may cause asbestos fibers to be released into the atmosphere, thereby creating a potential

health hazard to workmen. Apprise all workers, supervisory personnel, subcontractors, and other personnel who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed:

PART 5 – MONITORING

Area Monitoring

1. The Owner *may* contract for area asbestos air monitoring during some or all portions of the project (not in contract sum). The Contractor shall perform work in such a manner so that asbestos fiber concentrations at any location inside the building do not exceed 0.01 fibers per cubic centimeter of air as analyzed by Phase Contrast Microscopy, and/or 70 asbestos structures per square millimeter of filter area when collected and analyzed by the AHERA Transmission Electron Microscopy response action completion method.
2. If engaged by the Owner, the Air Monitor shall not be responsible for on-site project management.
3. The Contractor shall cooperate with the Air Monitor, diligently convey the anticipated asbestos abatement schedule, and should unsafe conditions be identified by the Monitor, appropriate corrective actions, shall be instituted.
4. The Air Monitor will not supervise the asbestos abatement work.
5. The Contractor shall be responsible for unsafe conditions that arise out of the work.
6. The Contractor shall cooperate with the Air Monitor and provide access to the work areas as well as sufficient electrical power and lighting to enable the air monitor to perform his duties. For elevated work the Contractor shall provide ladders/lifts etc. and appropriate fall protection for the air monitor or others so that the work can be safely inspected.

Clearance

1. The Owner reserves the option to engage a North Carolina Accredited Air Monitor to perform clearances at some or all asbestos work areas. If selected the Air Monitor shall initially conduct a visual inspection of each work area.
2. Regardless of the Owner's option for clearance monitoring, the contractor shall be responsible for any additional cleaning activities necessary to leave the work areas free of visible dust, debris and asbestos contamination.

3. Additionally, if desired by the Owner, clearance air samples may be collected inside the building, directly adjacent to the Contractor's regulated area for clearance purposes. If clearance sampling is desired by the Owner, a minimum of 5 clearance air samples shall be collected inside the building adjacent to the regulated work area and analyzed by Phase Contrast Microscopy (PCM). The clearance criteria for PCM shall be that all samples are less than 0.01 f/cc of air. The Owner may also elect to have clearance samples analyzed by Transmission Electron Microscopy if project conditions warrant. The clearance criteria shall be that the average of the 5 samples does not exceed a concentration of 70 asbestos structures per square millimeter of filter area if samples are analyzed by Transmission Electron Microscopy.

Personal Samples

1. The Contractor shall collect and analyze personal samples at his own expense as required by OSHA.
2. The results of personal sampling shall be provided to the employees.
3. A copy of all personal sample results shall be included in the post-job submittal package.

PART 6 – WASTE DISPOSAL

1. Bags/wraps utilized for asbestos waste shall be of 6-mil polyethylene and shall have EPA generator, DOT and OSHA labels.
2. Wrapped window sashes, doors and widow/doors frame components shall be wrapped in at least two continuous layers of 6-mil polyethylene and shall have EPA generator, DOT and OSHA labels affixed.
3. All waste, including rags, suits, polyethylene sheeting, etc. utilized for abatement purposes shall be double-bagged and adequately wet.
4. Waste shall be temporarily placed in a properly labeled lockable sealed trailer/dumpster. This temporary storage area shall be lined with 6-mil polyethylene.
5. Dispose of waste at a properly permitted landfill.
6. North Carolina-approved Waste Shipment Records shall be utilized to document disposal and shall be returned within forty-five (45) days of the completion of site work as part of the post-abatement submittals. **Final payment will not be made until waste manifests are properly completed, transmitted and received by the Owner.**

END OF ASBESTOS WORK PLAN