FY24-ITB-021 ANNUAL CONTRACT FOR ASBESTOS ABATEMENT
NON – TECHNICAL SPECIFICATIONS

1.1 SCOPE OF WORK:

The scope of services to be provided to the University of Florida includes the removal of identified asbestos containing materials using methods recognized as safe and in compliance with all applicable Federal and State regulations and University of Florida policies.

The location of the work to be provided by the Contractor will typically include the University of Florida's main campus and other University owned properties in the immediate surrounding area. On occasion, asbestos removal work may also be required at one of the University's off campus research facilities located around the State of Florida. The size of each project will vary, and all services shall be provided on an as needed basis. It is anticipated that at any given time, multiple removal projects will be required to run concurrently.

Project examples can vary from remove and dispose of 24 LF of thermal system insulation (TSI); remove and dispose of 880 square feet of carpet, floor tiles and black mastic; remove and dispose of over 30,000 square feet of wallboard and associated framework.

All asbestos removal activities must be performed in a manner that protects occupants of adjoining areas, both inside and outside of buildings, from exposures to asbestos and any other material used in the asbestos abatement process (e.g. encapsulants, chemical mastic removers, etc.).

Additionally, the University of Florida campus has an exceptionally high concentration of pedestrians, bicycles, and vehicular traffic. Precautionary measures must be utilized to always maintain a high level of safety.

1.2 NON-MANDATORY PRE-BID CONFERENCE:

A Non-Mandatory Pre-Bid Conference will be held virtually on December 12, 2023, at 10:30 AM, at https://ufl.zoom.us/j/96397558945, for the purpose of considering questions posed by respondents for interested parties. Attendance is strongly encouraged.

1.3 QUALIFICATION OF BIDDERS:

A. For the purpose of determining qualification of bidders, bid response should include the following documentation:

1. Proof of corporate registration to operate in the State of Florida, by the State Division of Corporations. Such proof shall take the form of a Certificate of Corporate Status from the Florida Department of State.

2. Provide proof that contractor is a licensed asbestos abatement contractor in Florida per State of Florida Statue 469.

3. Evidence that contractor has successfully completed asbestos abatement projects in at least four occupied University, educational or Health Care Facility in Florida within the past 12 months. Provide complete information including description, location and date of completion, verifiable names, addresses and contact information. Provide project size in square feet of asbestos removed.

4. Provide proof of liability insurance coverage in the amounts of: $1 million general liability per occurrence / $2 million aggregate. $1 million automobile liability per occurrence. Worker's Compensation per requirements of Chapter 440 of Florida Statutes. $5 million pollution liability endorsement. Please note: awarded contractors will be required to name University of Florida

Board of Trustees as an additional insured on their general liability and automobile liability policies.

5. Provide a copy of the firm's insurance experience modification rate (EMR) for the last three years as determined by the NCCI. Such proof shall consist of the firm's NCCI EMR forms.

6. Provide the company's OSHA Total Recordable Incident Rate (TRIR) for each of the last three years. Attach applicable OSHA 300A form (Summary of Work-Related Injuries and Illnesses) for each year.

7. Disclose any citations/violations levied by any Federal, State or local government agencies related to asbestos abatement including any criminal records of violations of environmental law (i.e. hazardous waste disposal). Include the name and location of the subject project(s), the date(s) and how the allegations were resolved.

1.4 PRICING:

Prices are to be a fixed price, and include provision of all labor, equipment, tools, consumables, maintenance, permits, liability insurance, builder's risk insurance, training manuals and services necessary and/or proper for the completion of the work, except as may be otherwise expressly provided in the contract documents associated with the materials to be provided by the University. The University will not be liable for any costs beyond those proposed herein and awarded. Time and materials quotes will be unacceptable. In some cases, the University may order material in excess of that required by the plans. This is to allow for wastage, change orders, and potential loss by inventory. Prices should be calculated based upon the plans provided, and not upon the quantity of materials ordered.

Complete Appendix A – Unit Price Schedule located in the Buyer Attachments.

1.5 QUESTIONS AND REQUESTS FOR CLARIFICATION

Contractor questions and requests for clarification related to this ITB should be submitted on the Q&A Board no later than December 18, 2023.

1.6 WITHDRAWAL OF BIDS:

No bidder may withdraw their bid for a period of forty-five calendar days after the date set for opening thereof, and bids shall be subject to acceptance by the Owner during this period.

1.7 BID EVALUATIONS:

Each line item will be evaluated separately and will be assigned points. The value of the points will be determined by the number of bids received, with the lowest bidder receiving highest point value and how the hourly rate compares to each corresponding hourly rate submitted by other bidders. For example, if 5 proposals are received, per line item, the lowest bid will be given a 5, the second lowest bid will be given a 4, etc. and the highest bid price will be given a 1. Line items that are "no charge" should be indicated by entering $0.00 and will be awarded highest points. Line items that are left blank or listed as "not available" (N/A) will be given no points.

1.8 AWARD OR REJECTION OF BIDS:

A. The contract, if awarded, will be awarded to the responsible and responsive bidders who have best complied with the qualifications described in 1.3, and has the highest point score as described in 1.7.

B. The bid will be awarded subject to the Owner's right to reject any or all bids and to waive informality and irregularity in the bids and in the procedure. The result of this bid will allow UF to enter into a contract with a pool of Contractors to provide minor asbestos abatement construction services over the contract period. Each project will have a value of less than $200,000.00.

C. After award, it will be up to the discretion of the University which of the awarded Contractors will be selected to quote individual projects under this contract. Award does not guarantee work.

1.9 ESTIMATED ANNUAL CONTRACT VALUE:

There is no guarantee as to the annual construction amount that the Contract, if awarded, will result in.

1.10 EXECUTION OF AGREEMENT:

A. The Contract will be a Purchase Order for an individual project issued by UF Procurement Services and will be governed by UF's PO Terms and Conditions and all terms and conditions, non-technical specifications, forms, guides, standards and policies contained and referenced herein.

B. A valid certificate of insurance as described in 1.3.A.5 above, shall be provided to and approved by UF Procurement Services before a Purchase Order will be issued.

1.11 UNBONDED CONSTRUCTION CONTRACTS/PROJECTS:

A. On all construction projects where a performance and payment bond are not required to be provided, the following procedures shall be followed to ensure that laborers, materialmen and subcontractors performing work in University projects receive the payments due to them from the contractor.

The contractor, before beginning work or within two workdays, thereafter, shall post in a conspicuous place on the project site the following notice:

"Notice is hereby made to all those concerned and affected that (contractor) is performing services for (project name), (project number) at (location). All parties furnishing labor and/or materials to said project are to provide notice of such in writing by certified mail to University of Florida, (name of facilities office), (address), Gainesville, Florida, 32611, or other appropriate University Department within twenty days of first providing such labor and/or materials."

B. In case of default by the Contractor, the laborers, materialmen and subcontractors, as defined in Section 713.01 of the Florida Statutes, making claims for unpaid bills, will be paid from the ten percent retainage on a pro rata basis.

1.12 PERIOD OF SERVICE

Unless sooner terminated, this contract shall remain in force for the period which may reasonably be required for the design, award of contracts, and construction of each project initiated on or before December 31, 2024, including extra work and any required extension thereto. This contract may be renewed at the Owner's option for two (2) additional one (1) year periods, based upon satisfactory performance of the Contractor as determined by Owner in its sole and absolute discretion. To renew this contract, Owner shall so notify the Contractor at least thirty (30) days prior to the date the original term or renewal term expires, as applicable.

1.13 PRICE INCREASES

Prior to renewal, the Contractor will have the opportunity to adjust prices for the contract that will be in force for the subsequent year. Price change requests shall be submitted to Procurement Services

in writing at procurement@ufl.edu, submitted at least thirty (30) days prior to the end of the current contract period, and shall be supported by written evidence of increased costs to the Successful Contractor. The University will not approve unsupported price increases that will merely increase the gross profitability of the Successful Contractor at the expense of the University. Price change requests shall be a factor in the Agreement extension review process. The University shall, in its sole opinion, determine whether the requested price increase or an alternate option is in the best interest of the University.

1.14 CANCELLATION

The University, by written notice, may terminate in whole or in part any purchase order resulting from this Invitation to Bid, when such action is in the best interest of the University. If the purchase order is terminated, the University shall be liable only for payment of services rendered prior to the effective date of the termination. Services rendered will be interpreted to include the cost of items already delivered, plus the reasonable cost of supply action short of delivery.

1.15 TERMINATION FOR CONVENIENCE

The University reserves the right to terminate the Agreement in whole or part at any time when in the best interests of the University without penalty or cause. Upon receipt of the written notice, the Successful Contractor shall immediately stop all work as directed in the notice, notify all subcontractors of the effective date of the termination, and minimize all further costs to the University. In the event of termination under this provision, all documents, data and reports prepared by the Successful Contractor under the Agreement shall become the property of and delivered to the University. The Successful Contractor shall be entitled to receive just and equitable compensation for work in progress, work completed, and materials accepted before the effective date of termination. Such compensation shall be the Successful Contractor's sole remedy against the University in the event of termination under this provision.

1.16 STOP WORK ORDER

The University may at any time, by written order to the Contractor, require the Contractor to stop all or any part of the work called for by the Agreement for a period of ninety (90) days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be specifically identified as a Stop Work Order issued under this provision. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incidence of costs allocable to the work covered by the order during the period of work stoppage. If a Stop Work Order issued under this provision is canceled or the period of the order or any extension expires, the Contractor shall resume work. The University shall make an equitable adjustment in the delivery schedule or Agreement price, or both, and the Agreement shall be amended in writing accordingly.

1.17 CHANGES IN THE WORK

The University may order in writing extra work or make changes by altering, adding to or deducting from the work, the Contract Sum and Time of Performance being adjusted accordingly. The value of any such change shall be determined by estimate and acceptance of a lump sum. Claims by the Contractor for extra cost must be made in writing before executing the work involved.

1.18 RELATED SECTIONS

A. Other documents affecting the work include, but are not necessarily limited to, the following:

1. Asbestos Abatement Master Specifications located in Buyer Attachments

2. General Terms and Conditions

https://facilities.ufl.edu/wp-content/uploads/forms/contracts/GTC.pdf

3. Division 0 Non-Technical Specifications
   https://facilities.ufl.edu/wp-content/uploads/forms/contracts/Div0NonTechSpecs.pdf

4. Division 1 Non-Technical Specifications
   https://facilities.ufl.edu/wp-content/uploads/forms/contracts/Div1_NonTech_Specs_SEPT_2020.pdf

5. UF Design and Construction Standards
   https://facilities.ufl.edu/projects/forms-standards/design-construction-standards/

6. Standards, Policies, Regulations, Forms, Guides, Inspection & Closeout and References
   https://facilities.ufl.edu/projects/forms-standards/

   a. Other Forms:

      - Dig Permits: https://www.facilitiesservices.ufl.edu/departments/utilities/dig-permits/
      - Building Codes Enforcement Inspections: https://www.ehs.ufl.edu/departments/facility-support-services/building-codes-enforcement/inspections/
      - Fire Plan Review and Inspection: https://www.ehs.ufl.edu/departments/facility-support-services/fire-safety/

END OF SECTION

ATTACHMENT A – REQUIREMENTS FOR FEMA PUBLIC ASSISTANCE PROGRAM PROCUREMENT

The terms of this section are considered part of this solicitation and are applicable for projects/work that may be reimbursed through the Federal Emergency Management Agency (FEMA) Public Assistant Program. In the event of a conflict in terms, the terms of this section will control.

1. Termination.
   a. Termination for Convenience. The Agreement may be terminated by UF without cause upon no less than thirty (30) days written notice.
   b. Termination for Cause. Each term and condition of the Agreement is material and any breach or default by either party in the performance of each such term and condition will be a material breach or default of the Agreement. Either party may terminate the Agreement in the event the other party materially breaches or defaults in the performance of any of its obligations hereunder, and such default continues for thirty (30) days after written notice thereof is provided to the breaching party by the non-breaching party. Any termination will become effective at the end of such thirty (30) day period unless the breaching party cures any such breach or default prior to the expiration of such period.
   c. Administration of Termination. All written notices must be delivered by certified mail, return receipt requested, or in person with proof of delivery. In case of termination under the Agreement, only fees for Services rendered by the Vendor through the date of termination, if any, will be due and payable, and all work in progress will become property of UF and will be turned over promptly by the Vendor. Upon receipt of written notice of termination, up until the date of termination, the Vendor will make reasonable efforts to limit the incursion of additional fees and perform only those Services necessary for the timely delivery of work in progress to UF and/or to correct a material breach or default, as applicable. The Parties will not be relieved of the duty to perform their obligations up to and including the date of termination. A termination penalty may not be charged against UF.

2. Equal Opportunity. If the Services provided under the Agreement include construction, then the Vendor agrees as follows:
   a. The Vendor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Vendor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Vendor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
   b. The Vendor will, in all solicitations or advertisements for employees placed by or on behalf of the Vendor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
   c. The Vendor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Vendor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
   d. The Vendor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
   e. The Vendor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
   f. In the event of the Vendor's noncompliance with the nondiscrimination clauses of the Agreement or with any of the said rules, regulations, or orders, the Agreement may be canceled, terminated, or suspended in whole or in part and the Vendor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and

remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g. The Vendor will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Vendor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event Vendor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction by the administering agency the Vendor may request the United States to enter into such litigation to protect the interests of the United States.

3. Davis-Bacon Act. If the Agreement NOT TO EXCEED amount is in excess of Two Thousand & 00/100 Dollars ($2,000.00) and Services include construction, then the Vendor must comply with the Davis-Bacon Act (40 U.S.C. § 3141-3144 and 3146-3148) as supplemented by Department of Labor regulations at 29 C.F.R. Part 5 (Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction).

4. Compliance with Copeland "Anti-Kickback" Act. If the Agreement NOT TO EXCEED amount is in excess of Two Thousand & 00/100 Dollars ($2,000.00) and Services include construction, then the Vendor agrees as follows:
   a. Contractor. The Vendor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.P.R. pt. 3 as may be applicable, which are incorporated by reference into the Agreement.
   b. Subcontracts. The Vendor shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The Vendor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
   c. Breach. A breach of the contract clauses above may be grounds for termination of the Agreement, and for debarment of Vendor and/or subcontractor(s), if any, as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

5. Compliance with the Contract Work Hours and Safety Standards Act. If the Agreement NOT TO EXCEED amount is in excess of One Hundred Thousand & 00/100 Dollars ($100,000.00) and Vendor employs mechanics or laborers, then Vendor agrees as follows:
   a. Overtime Requirements. The Vendor and their subcontractor(s), if any, providing Services under the Agreement which may require or involve the employment of laborers or mechanics will not require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty (40) hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-halftimes (1 ½) the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek.
   b. Violation; Liability for Unpaid Wages; Liquidated Damages. In the event of any violation of the clause set forth in paragraph (a) of this section the Vendor and their subcontractor(s), if any, responsible therefor shall be liable for the unpaid wages. In addition, such Vendor and their subcontractor(s), if any, shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a) of this section.
   c. Withholding for Unpaid Wages and Liquidated Damages. FEMA shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Vendor and/or subcontractor(s), if any, under any such contract or any other Federal contract with UF, or any other

federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by UF, such sums as may be determined to be necessary to satisfy any liabilities of Vendor and/or subcontractor(s), if any, for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) of this section.

d. Subcontracts. The Vendor and subcontractor(s), if any, shall insert in any subcontracts the clauses set forth in paragraph (a) through (c) of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The Vendor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a) through (d) of this section.

6. Clean Air Act and the Federal Water Pollution Control Act. If the Agreement NOT TO EXCEED amount is in excess of One Hundred Fifty Thousand & 00/100 Dollars ($150,000.00), then the Vendor agrees as follows:
   a. Clean Air Act.
      i. Vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
      ii. Vendor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government} will, in tum, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
      iii. Vendor agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FEMA.
   b. Federal Water Pollution Control Act.
      i. Vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
      ii. Vendor agrees to report each violation to UF and understands and agrees that UF will, in tum, report each violation as required to assure notification to Federal Emergency Management Agency and the appropriate Environmental Protection Agency Regional Office.
      iii. Vendor agrees to include these requirements in each subcontract exceeding One Hundred Thousand & 00/100 Dollars ($100,000) financed in whole or in part with Federal assistance provided by FEMA.

7. Energy Policy and Conservation. Vendor will comply with the Energy Policy and Conservation Act (P.L. 94-163; 42 U.S.C. § 6201-6422), and Florida's State Energy Management Plan adopted pursuant to § 255.257, F.S.

8. Suspension and Debarment.
   a. If the Agreement is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000, then the Vendor hereby certifies that neither the Vendor, its principals (defined at 2 C.F.R. § 180.995), nor its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
   b. The Vendor must comply with 2 C.P.R. pt. 180, subpart C and 2 C.P.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transactions with subcontractors and/or suppliers.
   c. This certification is a material representation of fact relied upon by UF. If it is later determined that the Vendor did not comply with 2 C.P.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State of Florida and UF, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
   d. The Vendor agrees to comply with the requirements of 2 C.P.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C throughout the period of the Agreement. The Vendor further agrees to include a provision requiring such compliance in its lower tier covered transactions with subcontractor and/or suppliers.

9. Byrd Anti-Lobbying Amendment. If the Agreement NOT TO EXCEED amount is One Hundred Thousand & 00/100 Dollars ($100,000) or more, then Vendor shall file the required certification. Each tier certifies

to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

10. Procurement of Recovered/Recycled Materials.
    a. In the performance of the Agreement, Vendor shall make maximum use of products containing recovered materials that are EPA designated items unless the product cannot be acquired:
        i. Competitively within a timeframe providing for compliance with the contract performance schedule;
        ii. Meeting contract performance requirements; or,
        iii. At a reasonable price.

    Information about this requirement is available at EPA's Comprehensive Procurement Guidelines website, https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program. The list of EPA-designate items is available at https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program#products.

END OF SECTION

TABLE OF CONTENTS

DIVISION 1 - GENERAL REQUIREMENTS

TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

DIVISION 2 – TECHNICAL REQUIREMENTS

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 PROJECT DESCRIPTION

A. The project consists of the removal of various asbestos containing materials at various site locations for building(s) owned by The University of Florida.

B. The Owner may elect to authorize a change in work scope to include additional work to any building, structure, grounds and/or parking facility located at any site owned or leased by the Owner. This is at the Owner's sole discretion and does not obligate the Owner nor entitle the contractor to any additional work within the scope of this project, unless specifically elected by the Owner and a properly executed change order is issued.

1.2 WORK PLAN

A. A work plan will be developed for each project under this term contract. The plan will contain specific requirements for completion of the project. All work on projects shall comply with the master specifications. Any deviation from the master specifications will be detailed in a Work Plan, addendum or change order directive.

1.3 DESCRIPTION OF LINE ITEMS

1. Mobilize all labor, tools, and materials required to remove, repair, enclose, and/or encapsulate asbestos-containing materials, and perform related repairs for projects involving asbestos-containing material.

2. Mobilize all labor, tools, and materials required to remove, repair, enclose, and/or encapsulate asbestos-containing materials, and perform related repairs for projects involving asbestos-containing materials within 24 hours of notice.

3. Furnish all labor, tools, and materials required to install, and remove a three stage, decontamination unit as specified in Section 02 82 00 (see drawing AB-1).

4. Furnish all labor, tools, and materials required to install and remove a single stage decontamination unit.

5. Develop project specific plan of action, including applicable drawings, for distribution to the EH&S and Asbestos Consultant for approval prior to starting work. This document shall be a detailed plan of the procedures proposed for use in complying with the requirements of this specification, including but not limited to scheduling all aspects of the work and precautions to be taken to ensure safety of workers, staff and visitors to the site.

6. Assemble and provide to Asbestos Consultant submittal packages as specified in Section 01 32 19.

7. Furnish all labor, materials, transportation and incidentals (including permits, notices and fees) required for the disposal of contaminated waste in accordance with Section 02 82 00.

8. Furnish all labor, materials, and tools required to establish and operate Type C supplied air respiratory system.

9. Furnish all labor, tools and materials required to install and remove portable air conditioning units.

10. Provide the asking entity with a written job estimate for specified work.

11. Furnish all labor, tools, and materials required to install, and remove plastic sheeting, including critical barriers, as outlined in Section 02 82 00.

12. Furnish all labor, tools, and materials required to install, and remove temporary soft/hardwall partitions of fire retardant wood studs and fire retardant plastic sheeting as outlined in Section 02 82 00.

13. Furnish all labor, tools, and materials required to install, and remove temporary hardwall partitions of fire retardant hardboard, fire retardant wood studs, and fire retardant plastic sheeting as outlined in Section 02 82 00.

14. Remove and replace moveable, non-contaminated objects within each work area except telephone systems, computer systems and lab equipment.

15. Furnish all labor, tools, and materials required for removal and/or encapsulation of asbestos-containing materials for projects involving mechanical system insulation. (See Section 02 82 00).

16. Furnish all labor, tools, and materials required for glovebag removal of asbestos-containing materials for projects involving mechanical system insulation (See Section 02 82 00).

17. Furnish all labor, tools, and materials required for removal and/or encapsulation of asbestos-containing materials for projects involving surfacing material (See Section 02 82 00).

18. Furnish all labor, tools, and materials required for removal and/or encapsulation of asbestos-containing materials for projects involving miscellaneous materials (See Section 02 82 00).

1.4 WORK UNDER OTHER CONTRACTS

A. Air monitoring for the Owner.

1.5 EXISTING CONDITIONS

A. Existing conditions are reflected to the best of Asbestos Consultant's knowledge. Should minor conditions be encountered which are not exactly as indicated, modify work at no additional expense to Owner.

1.6 TEST REPORTS

A. The Owner has had certain materials in the work area tested. Copies of these reports are available at the office of the Owner and Asbestos Consultant. However, the Contractor is cautioned that, should he make interpretations, form opinions or draw conclusions as a result of examining the test results, those interpretations, opinions and conclusions will be those made, formed and drawn solely by the contractor. The test reports are specifically excluded from the Contract Documents.

1.7 CONTRACTOR USE OF PREMISES

A. General: Limit use of the premises to construction activities in areas indicated. Confine operations to areas within Contract limits indicated.

B. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

C. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

1.8 OWNER OCCUPANCY

A. Full Owner Occupancy: The Owner will occupy the site, adjacent spaces and adjacent buildings during the entire abatement period, outside of the designated abatement area. Cooperate with the Owner during abatement operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.

1.9 PARKING

A. On-site parking is limited at the project sites. Utilize only those parking areas designated by Owner for storage trailers, vehicles, disposal containers and equipment.

2.0 PREJOB DAMAGE INSPECTION

A. Prior to starting work, perform a thorough survey of property and all affected areas of the work area with Owner and Asbestos Consultant to document existing damage.

2.1 CORRECTION OF DAMAGE TO PROPERTY

A. Consider any damage to building or property not identified in the pre-job damage survey as having resulted from the execution of this contract. Correct damage at no additional cost.

2.2 BUILDING SECURITY

A. Maintain personnel in asbestos work areas at all times any portion of the work areas are open or not properly secured. Completely secure all asbestos work areas at the end of each working day with a locking device.

2.3 OBSERVATIONS

A. Asbestos Consultant will observe the status and progress of the Work for completeness and general compliance with the requirements of the Contract Documents at a minimum of the following times during the Project:

1. Following complete preparation of the work area(s) and prior to proceeding with actual asbestos abatement.

2. During abatement.

3. At designated times during the cleaning phases.

4. As appropriate, during the Work outlined elsewhere in the Contract Documents.

B. Notify Asbestos Consultant and ***UF EH&S*** at least 24 hours in advance of the need and readiness for such observations. Should no advance notice be given to the Asbestos Consultant, Asbestos Consultant will make reasonable effort to comply with time of requested observation. Do not proceed until such observation by Asbestos Consultant is made and authorization to proceed is granted.

2.4 SIGN-IN/OUT LOG

A. Prior to the start of any asbestos abatement activity, a contractor's project logbook will be established. This logbook will serve as a vehicle for maintaining all the records associated with the project. The logbook will be used to record accidents, unusual events or occurrences (such as failure of the negative air system or containment barriers) personnel and area air sampling results, notes concerning any deviation from standard work practices, daily sign-in/sign-out of employees and authorized visitors, and a day-by-day account of the work progress. The logbook will also record emergency telephone numbers inside the front cover. The logbook will be hard bound and shall be signed each day by the Asbestos Consultant and the project supervisor.

2.5 UTILITIES

A. Contractor may temporarily connect to existing permanent utilities, with use of a proper Ground Fault Interrupter, during execution of the project. Remove connections and all extensions of utilities at project completion. Return all utilities to original condition upon completion of project.

2.6 SALVAGEABLE MATERIALS

A. Consider all demolished or removed materials and items in the execution of the Work unsalvageable unless specifically noted otherwise in the Specifications, Drawings, or by the Project Manager.

2.7 CLEAN-UP

A. Leave all areas clean and free of miscellaneous debris and equipment at completion of work.

END OF SECTION

SECTION 01 32 19 - SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;

1. Pre-job submittal.

2. Post-job submittal.

3. Daily construction reports.

4. Product Data.

5. Worker Site Safety

B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits.

2. List of Subcontractors.

C. Test reports are included in Section 01 40 00 "Testing Laboratory Services."

1.2 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of abatement activities. Transmit each submittal a minimum of one week in advance of performance of related abatement activities to avoid delay.

1. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

2. The Asbestos Consultant reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing: Allow one week review time for initial submittal. All Submittals will be submitted in electronic format unless otherwise requested.

C. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.

2. Include the following information on the label for processing and recording action taken.

a. Project name.
b. Date.
c. Name and address of Asbestos Consultant.
d. Name and address of Contractor.
e. Name and address of subcontractor.
f. Work Order number
g. File Number

D. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Asbestos Consultant using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

1. On the transmittal record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.3 PRE-JOB SUBMITTALS

A. Notice of impending commencement of any asbestos removal work for each facility in writing to:

1. Air Compliance
   Florida Department of Environmental Protection
   8800 Baymeadows Way West, Suite 100
   Jacksonville, Florida 32256-7590
   ATTN: Mr. Mark Lovallo
   (904) 256-1566
   Marc.Lovallo@dep.state.fl.us

2. University of Florida
   Environmental Health and Safety Division
   916 Newell Drive
   P.O. Box 112190
   Gainesville, Florida 32611-2190
   ATTN: Mr. Artiom Chacon
   (352) 294-7120
   achacon@ehs.ufl.edu

Not fewer than 10 days before work commences on the Project. Include copy of notification in submittal package.

A courtesy notice to the Florida Department of Business and Professional Regulations (DBPR) Division of Professions must be submitted not fewer than three days before work commences on any Project involved with floor tile removal:

3. Florida Department of Business and Professional Regulations
   Division of Professions
   Director: Jeff Kelly
   2601 Blair Stone Road
   Tallahassee, FL 32399-0791
   Phone: 850.487.1395

B. All required permits, site location, and arrangements for transport and disposal of asbestos-containing or contaminated materials, supplies, etc. Include copies of notification, permits, etc. with submittal package.

C. Written description and/or sketch of the security procedures plan to be utilized.

D. Names of supervisory personnel and their qualifications and training. Include a copy of initial certification and any subsequent refresher certification documenting that the superintendent has successfully completed a state approved 40-hour project management and supervision course and has at least two years of experience.

E. Documentation that Contractor is a licensed asbestos abatement contractor in Florida.

F. Individually signed forms for each and every worker to be utilized on the Project by the Contractor or subcontractor documenting that each is actively involved in a company employee medical surveillance program. Include a copy of physician's medical opinion concerning employee use of respirators.

G. Individually signed forms for each and every worker to be utilized on the Project by the Contractor or subcontractor documenting that each is actively involved in a company employee respiratory protection program and has had appropriate training in respiratory protection, including documentation of proper fit testing.

H. Individually signed and notarized Worker's Release forms for each and every worker to be utilized on the project by the Contractor or subcontractor (Special Form #1).

I. Individually signed and notarized Worker Acknowledgment forms for each and every worker to be utilized on the project by the Contractor or subcontractor (Special Form #2).

J. All special equipment, techniques, etc. to be used on the Project.

1.4 INTERIM SUBMITTALS

A. Submit all workers training, doctor release, respirator and worker release forms for all new employees arriving on the project site following start of project.

B. Documentation must be submitted and approved by Consultant prior to worker entering any work area.

1.5 POST-JOB SUBMITTALS

A. All submittals required by the General Conditions.

B. Alphabetized list of all employees utilized on project (including Birth Date) and date which each arrived on project.

C. Receipts from landfill operator which acknowledge the Contractor's delivery(s) of waste material. Include date, quantity of material delivered, and signature of authorized representative of landfill on all receipts.

D. A copy of daily logs showing the following: date, entering and leaving time, company or agency represented, and reason for entry for all persons entering the work area.

E. Copies of employee air monitoring results relative to OSHA respiratory protection level compliance.

1.6 WORKER/SITE SAFETY

A. The successful vendor (contractor) shall insure that all activities carried out on behalf of the University or on University property are in compliance with all applicable federal, state and local regulations (OSHA, EPA, FDEP) pertaining to worker and site safety.

B. The successful vendor shall have a written health and safety program that outlines safe work practices and procedures expected to be followed by workers and shall have it available for review by the University's project manager or by representatives of the Environmental Health and Safety division upon request.

C. Project managers and superintendents/supervisors shall have obtained an OSHA 30-hour Construction Safety Outreach Training card within 5 years of the date of the applicable project.

D. The contractor is solely responsible for insuring that all workers have received any required safety related training. Training documentation shall be available for review upon request.

E. The successful vendor shall have a competent person or persons as defined by OSHA 29CFR1926.32(f) on the job site to monitor hazardous work operations such as but not limited to crane operations, electrical safety, excavations, fall protection and scaffolds.

F. The successful vendor shall have an up to date Safety Data Sheet (SDS) for all chemical products used on the job site. The SDSs shall be readily accessible to all project workers and to University staff, on request. If the use of any chemical product has the potential for exposure to University of Florida staff, students or visitors, the Environmental Health and Safety office shall be notified and exposure controls will be discussed prior to the use of the chemical product.

1.7 SUBMITTAL SCHEDULE

A. An electronic copy of Post-job submittals must be received by the Consultant no later than 10 working days after completion of the work. Inserts provided in at the end of this Section shall be used when submitting all final documents. If the contractor is not in receipt of waste disposal shipment records within 30 days of the date of transportation from the site, the contractor will contact the disposal site facility to determine the status of the waste shipment, and inform the Consultant in writing the cause of the delay. The EPA Regional office and the Consultant will be notified by the contractor if the documentation is not received within 45 days.

B. **An electronic copy of Post-job submittals must be received by the University of Florida Environmental Health and Safety Division no later than three weeks after completion of the work**

1.8 ASBESTOS CONSULTANT'S ACTION

A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Asbestos Consultant will review each submittal, mark to indicate action taken, and return promptly to the Contractor.

B. Compliance with specified characteristics is the Contractor's responsibility.

C. Action Stamp: The Asbestos Consultant will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:

1. Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

2. Final-But-Restricted Release: When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

3. Returned for Resubmittal: When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other

activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

4. Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.

5. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

SPECIAL FORM # 1
CERTIFICATE OF WORKER'S RELEASE

DATE:
TO:
RE:
(Insert Project Name & Address)

1. In consideration of my employment by

(Contractor)

in connection with the removal and disposal of asbestos-contaminated work areas, and in consideration of the sum of ONE AND NO/100 ($1.00) DOLLAR and other good and valuable consideration in hand paid, at and before the sealing and delivery of these presents, the receipt, sufficiency, and adequacy of which are hereby acknowledged, the undersigned does hereby acknowledge, warrant, represent, covenant, and agree as follows:

(a) I acknowledge and understand that I have been or will be employed in connection with the removal of, disposal of, or other work in asbestos-contaminated work areas, and I acknowledge that I have been advised of and I understand the dangers inherent in the handling asbestos and breathing asbestos dust, including, but not limited to, THE FACT THAT ASBESTOS CAN CAUSE ASBESTOSIS AND IS A KNOWN CARCINOGEN AND CAN, THEREFORE, CAUSE VARIOUS TYPES OF CANCER.

(b) I acknowledge and understand that ANY CONTACT WITH ASBESTOS, WHETHER IT CAN BE SEEN OR NOT, MAY CAUSE ASBESTOSIS AND VARIOUS FORMS OF CANCER, WHICH MAY NOT SHOW UP FOR MANY YEARS, and I covenant and agree faithfully to take all precautions required of me.

(c) I knowingly assume all risks in connection with potential exposure to asbestos and I do hereby covenant not to sue, and to release and forever discharge to the Owner, Consultant, Testing Laboratory and all of their directors, officers, employees, nominees, personal representatives, affiliates, successors, and assigns for, from and against any all liability whatsoever, and common law or otherwise except any rights which the undersigned may have under the provision of the applicable workmen's compensation laws. Except as specifically set forth herein I hereby waive and relinquish any and all claims of every nature which I now have or may have or claim to have which are in any way, directly or indirectly, related to exposure to asbestos and asbestos-containing materials.

(d) I hereby warrant and represent that I have not been disabled, laid-off, or compensated in damages or otherwise, because of the disease of asbestosis.

Signature of Worker
(as acknowledgement of reading this page of this two-page Certificate)

(e) I represent that I can read the English language, or that I have had someone read this instrument to me, and that I understand the meaning of all the provisions contained herein.

Signature _____

Social Security Number _____

Signed in presence of _____

Notary _____
(Signature)

( )
(Seal)
( )

SPECIAL FORM #2

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME

DATE

PROJECT ADDRESS

CONTRACTOR

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PERSON.

Your employer's contract with the Owner for the above project requires that: You will be supplied with the proper respirator and be trained in its use. You will be trained in safe work practices and in the use of the equipment found on the job. You will receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type of respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have completed an asbestos training course of not less than three days. I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

Physical characteristics of asbestos
Health hazards associated with asbestos
Respiratory protection
Use of personal protective equipment
Pressure Differential Systems
Work practices including hands-on or on-the-job training
Personal decontamination procedures
Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature_____ Social Security No. _____

Name_____ Witness_____

END OF SECTION

SECTION 01 40 00 – AIR MONITORING TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Air Monitoring: Work Area clearance is described in Section 01 74 23 - "Work Area Clearance".

1.2 DESCRIPTION OF THE WORK

A. This Section describes work being performed by the Owner and establishes criteria to be maintained by the Contractor.

B. Employee air monitoring required by OSHA is the Contractor's responsibility and is not covered in this section.

C. This section describes air monitoring carried out by the Asbestos Consultant to verify that the area outside the Regulated Work Area remains uncontaminated. This section also sets forth airborne fiber levels both inside and outside the Work Area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

D. The Asbestos Consultant will provide the Testing Laboratory services. Costs for these services are not included in the Contract Sum.

1. The Asbestos Consultant will employ the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Owner's responsibility.

E. The Asbestos Consultant will be employed under separate University of Florida contract as a third party entity, regardless of the project size.

1.3 CONTRACTOR RESPONSIBILITIES

A. Cooperate with Testing Laboratory in all aspects of the testing in order to expedite testing and results.

B. Provide Testing Laboratory representative’s access to the Work at all times and in all locations requested as necessary to perform testing.

C. Perform personal air monitoring daily, in compliance with FL Statute 469.005, on the project necessary to meet OSHA regulations. Analyze samples and post results on site within 24-hours after sampling.

1.4 PAYMENT FOR TESTING

A. Initial Services: Owner will pay the Asbestos Consultant for initial testing services.

B. Retesting: When initial tests indicate noncompliance with the Contract Documents, subsequent retesting occasioned by the noncompliance will be performed by the same testing agency. Owner will deduct testing costs from the abatement cost.

END OF SECTION

SECTION 01 42 13 - CODES AND REGULATIONS - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This Section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of the Work.

B. Requirements include adherence to Work practices and procedures set forth in applicable codes, regulations and standards.

1.2 CODES AND REGULATIONS

A. General Applicability of Codes, and Regulations: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes, and regulations, 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 herewith.

B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to Work practices, licensing, permitting, certifications, record keeping, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Consultant harmless for failure to comply with any applicable Work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

C. Federal Requirements: Which govern asbestos abatement Work or hauling and disposal of asbestos waste materials include but are not limited to the following:

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

2. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules
Title 29, Part 1926.1101 of the Code of Federal Regulations

3. Respiratory Protection
Title 29, Part 1910.134 of the
Code of Federal Regulations

4. Access to Employee Exposure and Medical Records
Sub part C Title 29, CFR-1910.20

5. Hazard Communication
Title 29, CFR 1926.59

6. Specifications for Accident Prevention Signs and Tags
Title 29, CFR 1926.200

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

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

D. State Requirements: Which govern asbestos abatement Work or hauling and disposal of asbestos waste materials include, but are not limited to, the following:

1. Chapter 469 of the Florida Statutes (Licensure of Asbestos Consultants and Contractors).

2. Florida Department of Business and Professional Regulations
Division of Professions
Director: Jeff Kelly
2601 Blair Stone Road
Tallahassee, FL 32399-0791
Phone: 850.487.1395

3. Notification: The contractor is responsible for submitting all abatement activity notification requirements to State, Local, and federal agencies. All notification for abatement must be sent to DEP, UF EH&S and EPA at least 10 days prior to beginning work. Notification must be submitted on a form similar to that required by the February 2, 1999 revised NESHAP regulation. If abatement is to start after the date of the original notification. Re-notification must be made stating the new start date, by telephone, and in writing as soon as possible but, before the original start date.

4. If work is commenced prior to the original start date, notification in writing must be made of the new start date at least ten days prior to the commencement of abatement.

5. Send a copy of the DEP notification to:

   Air Compliance
   Florida Department of Environmental Protection
   8800 Baymeadows Way West, Suite 100
   Jacksonville, Florida 32256-7590
   ATTN: Mr. Mark Lovallo
   (904) 256-1566
   Marc.Lovallo@dep.state.fl.us

   EPA
   Any additional Local or County notifications as mandated by regulation.

1.3 STANDARDS

A. Standards: All standards that are applicable to equipment and processes, governed by construction and asbestos abatement activities have the same force and effect (and are made part of the contract documents by reference) as if copied directly into the contract documents.

1.4 EPA GUIDANCE DOCUMENTS

A. EPA Guidance Documents: Which discuss asbestos abatement Work or hauling and disposal of asbestos waste materials are listed below for the Contractor's information only. These documents do not describe the Contract Work and are not a part of the Work of this Contract. EPA maintains an information number (800)334-8571; publications may be ordered from (800)424-9065.

Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book). EPA 560/5-85-024.

Friable Asbestos-Containing Materials in Schools: Identification and Notification Rule (40 CFR Part 763).

Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule. EPA 560/5-84-005.

Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials. EPA 560/5-84-006.

Asbestos in Buildings: Guidance for Service and Maintenance Personnel. EPA 560/5-85-018.

Asbestos Waste Management Guidance. EPA 530-SW-85-007.

Asbestos Fact Book. EPA Office of Public Affairs.

Asbestos in Buildings. Simplified Sampling Scheme for Friable Surfacing Materials.

A Guide to Respiratory Protection for the Asbestos Abatement Industry. EPA-560-OPTS-86-001.

1.5 LICENSES

A. Licenses: Maintain current licenses as required by applicable State or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the Work of this Contract.

B. Posting and Filing of Regulations: Maintain two copies of applicable federal, state and local regulations above. Maintain one copy of each at the job site. Keep one copy of each in the Contractor's main office.

1.6 SUBMITTALS

A. Before Start of Work: Submit those items as outlined in Section 01 32 19 to the Consultant for review. No Work shall begin until these submittals are returned with Consultant action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

B. Notices: Submit notices required by Federal, State and local regulations together with proof of timely transmittal to agency requiring the notice. Include in pre-job submittal package.

C. Permits: Submit copies of current valid permits required by State and local regulations with pre-job submittal package.

D. Licenses: Submit copies of all State and local licenses and permits necessary to carry out the Work of this Contract.

END OF SECTION

SECTION 01 42 19 - DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.1 GENERAL DEFINITIONS

A. General: Except as specifically stated otherwise, the following definitions supplement definitions of the Contract, General Conditions, Supplementary Conditions and other general contract documents, and apply generally to the work.

B. General Requirements: Provisions of Division 1 section of these specifications.

C. Indicated: Shown on drawings by notes, graphics or schedules, or written into other portions of contract documents. Terms such as "shown", "noted", "scheduled", and "specified" have same meaning as "indicated", and are used to assist the reader in locating particular information.

D. Directed, Requested, Approved, Accepted, etc.: These terms imply "by the Asbestos Consultant", unless otherwise indicated.

E. Approved by Asbestos Consultant: In no case releases Contractor from responsibility to fulfill requirements of contract documents.

F. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.

G. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing anchoring, applying, work into dimension, finishing, curing, protecting, cleaning, and similar requirements.

H. Provide: Furnish and install, complete and ready for intended use.

I. Installer: Entity (firm or person) engaged to install work, by Contractor, subcontractor or subcontractor. Installers are required to be skilled in work they are engaged to install.

J. Abbreviations, Plural Words: Abbreviations, where not defined in contract documents, will be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules, by the Asbestos Consultant. Plural words will be interpreted as singular and singular words will be interpreted as plural where applicable for context of contract documents.

K. Testing Laboratory: An independent entity engaged for the project to provide inspections, tests, interpretations, reports and similar services. The Consultant will provide a testing laboratory to perform material evaluation tests. Test (or retests) which pass the criteria established by the Contract Documents will be paid for by the Owner, those tests (or retests) that do not, will be paid for by the Contractor. The Contractor will be responsible for paying the minimum service charge for any retests less the cost of an actual original test. Any cost or charges submitted to the Owner by the testing service for delay or waiting time shall be fully paid for by the Contractor.

L. Overlapping/Conflicting Requirements: Most stringent (generally most costly) applies and will be enforced, unless more detailed language written directly into Contract Documents clearly indicates that a less stringent requirement is applicable. Refer uncertainties to the Asbestos Consultant for decision before proceeding.

M. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed within reasonable limits. Refer uncertainties to the Asbestos Consultant.

N. Legal Holidays: Holidays which are observed by the State of Florida consisting of those days when Students, Faculty and Staff are not required to report to classes/work.

O. First Class Condition: Building and site surfaces that are unbroken, non-cracked, non-rusting, without chips, without splinters, of texture matching its surrounding, with new appearing finishes, and operating as originally designed or intended to operate.

P. Disruptive Work Procedures: Work procedures or activities that are noisy, create odoriferous fumes, or produce a condition that will be disruptive to students, faculty and staff.

Q. Underground Services: Campus infrastructure including, but not limited to, water supply, sanitary sewer, storm sewer, natural and LP gas lines, electrical power, reclaimed water supply, irrigation lines, T.V. cables, fiber optic cables, telephone cables, fire alarm system cables, security wiring, control wiring and site underground mechanical systems including insulation.

1.2 ASBESTOS ABATEMENT DEFINITIONS

A. Air Monitoring: The process of measuring the fiber concentration of a specific volume of air.

B. Amended Water: Water to which a surfactant has been added to decrease the surface tension to 35 or less dynes.

C. Asbestos: Includes the minerals chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. For purposes of these Specifications both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.

D. Asbestos-Containing Material (ACM): Any material containing more than one percent asbestos of any type or mixture of types.

E. Asbestos-Containing Waste Material: Any material which is or is suspected of being contaminated with an asbestos-containing material which is to be removed from a Work Area for disposal.

F. Asbestos Debris: Pieces of ACM that can be identified by color, texture, or composition; or dust, if the dust is determined by an accredited inspector to be ACM.

G. Authorized Visitor: The Owner, the Owner's Representative, testing lab personnel, the Architect/Engineer or a representative of any federal, state and local regulatory or other agency having authority over the project.

H. Barrier: Any surface that seals off the Work Area to inhibit the movement of fibers.

I. Breathing Zone: A hemisphere forward of the shoulders of a person with a radius of approximately three feet space.

J. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

K. Certified Industrial Hygienist (CIH): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

L. Critical barrier: An asbestos-impermeable partition erected so as to constitute a work area enclosure; the outer perimeter of an asbestos work area, erected to complete a containment.

M. Disposal Bag: 6-mil thick minimum, leak-tight plastic bag used for asbestos packaging.

N. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent release of fibers.

1. Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

2. Penetrating encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

3. Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather that for in situ encapsulation.

O. Encapsulation: Treatment of asbestos-containing materials with an encapsulant.

P. Filter: A media component used in respirators to remove solid or liquid particles from the worker's breathing air.

Q. Friable Asbestos Material: Material that contains more than one percent asbestos and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

R. Glovebag: A single use control device that is disposed of upon completion of use. Glove bags are (approximately 40 - inch wide by 64 - inch - long bags) fitted with arm inserts through which the work can be performed. When properly installed they isolate workers from the asbestos materials being removed.

S. HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.

T. HEPA Filter Vacuum Collection Equipment (or HEPA vacuum cleaner): High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be of 99.97% efficiency at retaining fibers of 0.3 microns or larger.

U. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

V. Powered Air Purifying Respirator (PAPR): Either a full face-piece, helmet, or hooded respirator that has the breathing air supplied to the wearer, after it has been purified through a filter, via a battery driven fan.

W. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of a worker.

X. Pressure Differential and Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a pressure differential with the inside of the Work Area at a lower pressure than any adjacent area, and which cleans recirculated air or generates a constant air flow from adjacent areas into the Work Area.

Y. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Z. Renovation: Altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or taken out are excluded.

AA. Repair: Returning damaged ACM to an undamaged condition or to an intact state so as to prevent fiber release.

BB. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

CC. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation.

DD. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

EE. Visible Emissions: Any emissions containing asbestos that are visually detectable without the aid of instruments.

FF. Wet Cleaning: The process of reducing asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have

been dampened with amended water or diluted removal encapsulant and after use are thoroughly decontaminated or disposed of as asbestos-contaminated waste.

GG. Wetting Agent: A substance added to water to improve penetration.

HH. Work Area: The area where asbestos related Work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. The work area is a Regulated Area as defined by 29 CFR 1926.1101.

II. Specialty Items: Those items not found in any line item on the bid list. The specialty items must not be greater than 30% of the total project cost.

JJ. User: Requestor of work. Individual and/or individuals that request the work order.

KK. Negative Exposure Assessment (NEA): For any specific asbestos job that trained employees perform, employers may show that exposures will be below the PELs (i.e., negative exposure assessment) through the following:

- Objective data demonstrating that ACM, or activities involving it, cannot release airborne fibers in excess of the 8-hour TWA PEL or STEL;
- Exposure data obtained within the past 12 months from prior monitoring of work operations closely resembling the employer's current work operations (the work operations that were previously monitored must have been conducted by employees whose training and experience were no more extensive than that of current employees, and the data must show a high degree of certainty that employee exposures will not exceed the 8-hour TWA PEL or STEL under current conditions); or
- Current initial exposure monitoring that used breathing zone air samples representing the 8-hour TWA and 30-minute short-term exposures for each employee in those operations most likely to result in exposures over the 8-hour TWA PEL for the entire asbestos job.

END OF SECTION

SECTION 01 57 19 - RESPIRATORY PROTECTION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Instruct and train each worker involved in asbestos abatement or maintenance and repair of asbestos-containing materials in proper respiratory 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 concentration encountered in the Work Area or as required for other toxic or oxygen-deficient situations encountered.

1.2 STANDARDS

A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following 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 were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

B. OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910.134, and, 29 CFR 1926.1101.

C. CGA - Compressed Gas Association, Inc., New York Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air".

D. ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2-1980.

E. NIOSH - National Institute for Occupational Safety and Health.

1.3 SUBMITTAL

A. Before Start of Work: Submit the following to the Asbestos Consultant for review. Do not begin Work until these submittals are returned with the Asbestos Consultant's action stamp indicating that the submittal is returned for unrestricted use.

B. Product Data: Submit manufacturer's product information for each component used, including the NIOSH approval label for each component in an assembly and/or for entire assembly.

C. System Diagram: When a Type C supplied air respiratory system is required by the Work, submit a drawing showing assembly of components into a complete supplied air respiratory system. Include a diagram showing the location of the compressor, filter banks, backup air supply tanks, hose line connections in the Work Area(s), and the routing of air lines to the Work Area(s) from the compressor.

D. Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole including the Carbon Monoxide (CO) monitor operation and calibration procedures.

E. Respiratory Protection Program: Submit Contractor's written respiratory protection program manual as required by OSHA 29 CFR 1910.134.

F. Respirator Fitting Documentation: Submit documentation indicating successful fit check testing of respirator for the individuals working on this project in accordance with 29 CFR 1910.134 and 29 CFR 1926.1101.

1.4 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS

A. Provide air used for breathing in Type C supplied air respiratory systems that meet or exceeds standards set for CGA type 1 (Gaseous Air) Grade D:

1.5 ALLOWABLE CONTAMINANTS

A. The following table sets forth the quantity of any given contaminant allowed according to the referenced standard:

CONTAMINANT	Grade D
Carbon Monoxide, PPM/v	10
Carbon Dioxide, PPM/v	1000
Condensed Hydrocarbons, mg./cu. meter	5
Objectionable Odors	None

1.6 DELIVERY

A. Deliver replacement parts, etc., not otherwise labeled by NIOSH to job site in manufacturer's containers.

PART 2 - EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

A. Respirator Bodies: Provide half-face or full-face type respirators. Full-face respirators shall be equipped with a nose cup or other anti-fogging device.

B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH approval for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.2. In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH approval.

C. Non-permitted respirators: Do not use single use, disposable or quarter-face respirators.

2.2 SUPPLIED-AIR RESPIRATOR SYSTEMS

A. Provide equipment capable of producing air of the quality and volume required by the above reference standards as applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.

B. Facepiece and Hose: Provide respirator facepiece and air delivery hose provided by the same manufacturer that has been approved by NIOSH as an approved Type C respirator assembly operating in Pressure Demand mode with a positive-pressure facepiece.

C. Auxiliary backup system: In atmospheres which contain sufficient oxygen (greater than or equal to 19.5% oxygen) provide a Pressure Demand full facepiece supplied-air respirator equipped with an emergency back up HEPA filter.

D. Escape air supply: In atmospheres which are oxygen deficient (less than 19.5% oxygen) provide a Pressure Demand full facepiece supplied-air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which

automatically maintains an uninterrupted air supply in Pressure-Demand mode with a positive-pressure facepiece.

E. Backup air supply: Provide a reservoir of compressed Grade D Breathing Air located outside the Work Area which will automatically supply a continuous, uninterruptable source of air to each connected facepiece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average sized adult male engaged in moderately strenuous activity.

F. Warning Device: Provide a warning device. Locate so that the alarm is clearly audible above the noise level produced by equipment and Work procedures in use in all parts of the Work Area and at the compressor. Connect alarm to warn of:

1. Compressor shut down or other fault requiring use of backup air supply,

2. Carbon Monoxide (CO) concentrations in excess of 5 PPM/v.

G. Carbon Monoxide (CO) Monitor: Place the CO monitor in the air line between the compressor and back-up air supply and between the backup air supply and workers. Connect the monitors so that they also sound an alarm as specified under "Warning Devices".

H. Compressor Shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:

1. Carbon Monoxide (CO) concentrations exceed 5 PPM/v in the air line between the filter bank and backup air supply,

2. Compressor temperature exceeds normal operating range.

I. Compressor Location: Locate the compressor in a location that will not impede access to the building and that will not cause a nuisance by virtue of noise or fumes to occupied portions of the building.

J. Air Intake: Locate air intake remotely from any source of vehicle exhaust or any exhaust from motors or buildings.

K. After Cooler: Provide an after-cooler at the entry to filter system which is capable of reducing temperatures to outside ambient air temperatures.

PART 3 - EXECUTION

3.1 GENERAL

A. Respiratory Protection Program: Comply with OSHA 29 CFR 1910.134 and 29 CFR 1926.1101.

B. Require that Respiratory Protection: Respirators equipped with suitable filters must be used at any time there is the potential for airborne hazards or contamination. Respirators must be used whenever the potential exists for the disturbance of asbestos containing materials whether intended or accidental.

C. Require that a respirator be worn by anyone in the Work Area at all times, regardless of activity, during a period that starts with any operation which could disturb asbestos-containing material the area has been cleared for reoccupancy in accordance with Section 01 74 23.

D. Regardless of airborne fiber concentrations: but within the limits of respiratory protection requirements found elsewhere in these specifications. The minimum level of respiratory protection to be supplied and used will be half mask air purifying respirators equipped with high efficiency particulate air (HEPA) filters.

3.2 FIT TESTING

A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection training course set up and administered by a qualified person. Fit check negative-pressure respirators in accordance with 29 CFR 1926.1101. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which he has been trained and successfully fitted as indicated in the submitted respirator fitting documentation.

B. Additional Fit Testing: Meeting the requirements of established fit test protocol's contractors will be required to re-examine the fit of each employee's respirator at least once during the course of the project. The results of these tests will be entered into the hard bound project log book accompanied by the signature of each tested employee.

C. Upon Each Wearing: Require that each time an air-purifying respirator is put on, it be checked for fit with a positive and negative pressure fit check in accordance with the manufacturer's instructions and OSHA 29 CFR 1926.1101.

D. Facial Hair: Qualitative fit testing respirators will not be acceptable for any individual that has facial hair or apparel that interferes with the seal of the respirator to the face. The Consultant reserves the right to restrict the entry of any individual into the regulated area if there is any hair growth between the skin and the facepiece sealing surface (unshaven workers).

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED

A. Fibers: For purposes of this Section fibers are defined as all fibers regardless of composition as counted using the OSHA Reference Method (ORM) or NIOSH 7400 procedures, or asbestos fibers of any size as counted using a transmission electron microscope.

B. Provide Respiratory Protection as allowed by these specifications. The level of respiratory protection which supplies an airborne fiber concentration **inside the respirator** below 0.01 fibers per cubic centimeters (f/cc) is the minimum level of protection allowed. Determine the proper level of protection by dividing the expected or actual airborne fiber concentration in the Work Area by the "Protection Factors" given below:

3.4 RESPIRATORY PROTECTION FACTOR

Respirator Type	Protection Factor	
Air purifying: Negative-pressure respirator, High efficiency filter, Half-facepiece	10	
Air purifying: Negative-pressure respirator, High efficiency filter, Full-Facepiece	50	For full face negative pressure respirators a quantitative fit test is required where protection protection factors of 50 are required. If qualitative fit testing is the method of testing protection factors of 10 will be allowed.

Powered air purifying respirator (PAPR)- Positive pressure respirator High efficiency filter Hood or Helmet.	25/1,000
Powered air purifying (PAPR): Positive-pressure respirator, High efficiency filter, Half- or full-facepiece	50 – Half-facepiece 1,000 – Full facepiece
Type C supplied air: Positive-pressure respirator, pressure-demand, Full-facepiece	1000
Type C supplied air: Positive-pressure respirator, pressure-demand, Full-facepiece, Equipped with an auxiliary positive-pressure Self-contained breathing apparatus (SCBA)	over 1000

3.5 AIR PURIFYING RESPIRATORS

A. Negative pressure - half or full face mask: Supply a sufficient quantity of respirator filters approved for asbestos, so that workers can change filters during the work day.

B. Powered air purifying (PAPR) - half- or full-facepiece mask: Supply a sufficient quantity of high efficiency (HEPA) respirator filters approved for asbestos so that workers can change filters at any time that flow through the facepiece decreases to the level at which the manufacturer recommends filter replacement. Provide an appropriate flow verification device in the clean room of the Decontamination unit at all times. Require that the HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be decontaminated each time a worker leaves the Work Area.

3.6 TYPE C RESPIRATOR SYSTEM

A. Air Systems Monitor: Continuously monitor the air system operation including the compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual trained in the use of the supplied air system, to monitor the system at all times it is in use. Assign no other duties to this individual which will take him away from monitoring the system.

END OF SECTION

SECTION 01 74 23.1 - WORK AREA CLEARANCE - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Visual Observations: Required as a prerequisite of air testing, is set forth in Section 02 82 00 - "Asbestos Abatement".

B. Air Monitoring: Performed by the Asbestos Consultant during abatement work, is described in Section 01 40 00 - “Testing Laboratory Services".

1.2 SUMMARY

A. Not in Unit Price: This section describes Work being preformed by the Owner. Except for circumstances outlined in Section 01 40 00, this Work is not in the Unit Price.

B. This section sets forth-required post-abatement airborne asbestos concentrations in the Work Area and describes testing procedures the Owner will use to measure these concentrations.

1.3 CONTRACTOR RELEASE CRITERIA

A. The Work is Complete when the Work Area is visually clean and airborne fiber concentrations have been reduced to the level specified.

1.4 VISUAL OBSERVATIONS

A. Work of this Section will not begin until the Visual Observations described in Section 02 82 00 - "Asbestos Abatement" are complete and have been authorized by the Asbestos Consultant.

1.5 AIR MONITORING

A. To determine if the elevated airborne fiber concentrations encountered during abatement operations have been reduced to the specified level, the Owner's Representative will collect air samples and have them analyzed according to the procedures specified below.

B. Fibers Counted: "Fibers" referred to in this section shall be either all fibers regardless of composition as counted using the NIOSH 7400 method, or asbestos

structures of any size as counted using the AHERA analytical protocol for TEM analyses.

1.6 AGGRESSIVE SAMPLING

A. Aggressive sampling will be used when directed by the Consultant or required by law. The following aggressive sampling techniques will be used:

1. Before the sampling pumps are started the exhaust from forced air equipment (electric leaf blower) will be directed against all walls, ceilings, floors, ledger and other surfaces in the room. This procedure will be continued for five minutes per 10,000 cubic feet of room volume.

2. The Contractor shall provide one 20-inch diameter fan per 10,000 cubic feet of room volume, mounted in a central location in the Work Area at approximately two meters above floor, directly toward ceiling and operated at low speed for the entire period of sample collection.

3. Air samples will be collected in areas subject to normal circulation away from room corners, obstructed locations, and sites near windows, doors and vents.

1.7 PRELIMINARY FINAL CLEARANCE

A. In all work areas unless specifically excluded in other sections, preliminary final clearance air testing will be performed. All samples will be analyzed using PCM. The specified preliminary final clearance level will be <0.01 f/cc.

1.8 SCHEDULE OF AIR SAMPLES

A. Final Clearance: The number of air samples taken and analytical methods used will be accordance with the following schedule.

Size of Project	Number of Samples		Clearance
	PCM	TEM	
Final Clearance for small projects will be at the discretion of EH&S			
≥ 12 sf/lf	3-5	None	<0.01f/cc
<160 sf or < 260 lf	≥5	None	<0.01f/cc
>160 sf or >260 lf	AHERA Requirements		<0.01s/cc
sf: square feet	f/cc: fibers per cubic centimeter		
lf: linear feet	s/cc: asbestos structures per cubic centimeter		

1.9 PHASE CONTRAST MICROSCOPY (PCM)

A. In each Work Area after completion of all cleaning, samples will be taken and analyzed as follows:

1. Collection: Cellulose ester filters will be used. Filter media will have a 0.8 micron pore size. Flow rate will be 2-10 liters per minute (1pm). Minimum sample volumes will be 1200 liters. Detection limit will be less than 0.01 fibers per cubic centimeter (f/cc).

2. Analysis: Fiber concentration on all filters will be measured using the NIOSH 7400 method.

B. Release Criteria: Decontamination of the Work Area is complete when every Work Area sample is below 0.01 fibers per cubic centimeter (f/cc). If any sample is above this level then the decontamination is incomplete and re-cleaning shall be at the Contractor's expense. Final air sample results will be available 24 hours after completion of the sampling.

1.10 TRANSMISSION ELECTRON MICROSCOPY (TEM)

A. In each Work Area after completion of all cleaning, samples will be taken and analyzed as follows:

1. Collection: Cellulose ester filters will be used. Filter media will have a .45 micron pore size with a diffuser pad. Flow rate will be approximately 10 liters per minute (lpm). Minimum sample volume will be 1200 liters (when using a 25 mm cassette). Detection limit will be no greater than 0.01 structures per cubic centimeter (s/cc).

2. Analysis: Asbestos fibers on each filter will be measured using the AHERA analytical protocol for TEM analysis.

B. Release Criteria: Decontamination of the Work Area is complete when every Work Area sample is below 0.01 structures/cc. Samples will be analyzed using the AHERA protocol. If the samples do not meet this level then the decontamination is incomplete and re-cleaning is required. Costs of re-cleaning and re-sampling shall be at the Contractor's expense. Final air sample results will be available 48 hours after completion of the sampling.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

A. The Contractor shall notify the EH&S at least 48 hours in advance of the collection of the Work Area Clearance Samples.

B. The Contractor shall notify EH&S of the test results prior to dismantling critical barriers and releasing the work area for re-occupancy.

C. Re-clean all areas which do not meet specified clearance levels.

D. Pay for all additional cleaning and air testing required by Contractor's failing tests.

END OF SECTION

SECTION 02 82 00 - ASBESTOS REMOVAL

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies the requirements for asbestos abatement. It includes: preparation of the work areas including construction of decontamination units, asbestos removal, cleanup and decontamination, final clearance and disposal of asbestos-containing materials.

1.2 QUALITY CRITERIA

A. Maintain on site a full-time superintendent who is experienced in administration and supervision of asbestos abatement projects. This person is the Competent Person as required by OSHA regulations. Submit superintendent qualifications to Consultant for review and approval. A project superintendent cannot be changed without prior approval of the Consultant.

B. Provide one experienced job foreman to remain inside each work area at all times asbestos removal workers are working in the area.

C. Only trained and experienced asbestos removal workers will be permitted to perform the work.

D. Maintain a minimum of one complete copy of master specifications and work plan on site at all times.

1.3 WORKSITE CONDITIONS

A. Worker and Visitor Procedures: The Contractor is hereby advised that asbestos has been determined by the U.S. Government to be a CANCER - CAUSING AGENT and Contractor shall provide workers and visitors with protective clothing which as a minimum shall meet the requirements of OSHA 29 CFR 1926.1101.

B. Visitors entering the regulated area shall comply with all the protective equipment, respirator, and decontamination requirements of this specification. The contractor will be required to supply the proper respiratory protection equipment. Respirators used by visitors must be of a type suitable for the conditions present in the regulated area.

Visitors who enter the regulated area will be required to submit to the Consultant a current fit test certificate, a respirator-training certificate, and a physician's evaluation for respirator use.

C. Federal and State inspectors are exempt from meeting visitor requirements, but are required to sign-in-sign-out in the hardbound project logbook.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Plastic Sheeting: Utilize fire retardant true thickness materials in all applications. Size materials to minimize the frequency of joints. Utilize reinforced plastic sheeting where specified.

B. Tape: Provide duct tape capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials under both dry and wet conditions.

C. Spray Adhesive: Provide spray adhesive capable of sealing plastic to plastic or plastic sheet to finished or unfinished surfaces of dissimilar materials under both dry and wet conditions.

D. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos - containing material and retardation of fiber release during material disturbance. Follow manufacturer recommendations for surfactant/water concentration.

E. Other Materials: Provide other materials, such as lumber, plywood, drywall, studs, nails and hardware as necessary or specified to construct decontamination areas or enclosure systems.

F. Disposal Bags: Provide 6 mil thick leak tight clear polyethylene bags labeled in accordance with OSHA 29 CFR 1926.1101.

G. Caulking: Caulking to be used around seams or other openings must be 100% silicone rubber; non-shrinking; flexible; and fast curing.

2.2 EQUIPMENT

A. Airless Sprayer: Provide motor driven airless sprayer capable of applying both amended water and sealant. Size nozzle to provide a mist application of solution without excessively disturbing existing materials.

B. Negative Air Machines: Provide negative air pressure HEPA filtration units which comply with ANSI Z 9.2-2012 or most recent version.

C. Water Filters: Unless all waste water is to be disposed of as asbestos-containing, provide filter units on all drain lines & any other water source carrying water from the work area. Provide progressive filter system with the final filter passing particles one-micron or less.

D. Manometer: Provide continuous strip chart manometer to continuously monitor air pressure differential in all work areas.

E. Garden Sprayer: Provide a hand pump type pressure - can garden sprayer equipped with a wand at the end of a hose that can deliver a stream or spray of liquid.

F. HEPA Filtered Vacuum cleaners: Provide vacuums equipped with high efficiency particulate air filters manufactured, tested and approved for use specifically on asbestos contaminated environments.

G. Scaffolding: Provide scaffolds as required to accomplish the specified work and which meets all applicable safety regulations. All scaffold erection must be signed off by a competent person.

H. Communication Equipment: Suitable for intercom communications inside of the work areas.

I. Mastic Remover: Organic based solvent manufactured, tested and approved for use in removing asbestos containing glues or mastics. Submit SDS to UF-EH&S and Consultant prior to use. The use of “low odor” or “no odor” mastic removal is required.

PART 3 - EXECUTION

3.1 CONVENTIONAL REMOVAL

A. Preparation

1. Isolate from work area all air handling systems.

2. Shut down and lock out all air handling systems supplying air to, from or through work area.

3. Decontaminate all moveable items, using HEPA vacuums and wet methods, and remove from work area.

4. Seal with fire retardant plastic sheeting and tape all penetrations to work area, including, but not limited to, corridors, doorways, windows, ducts, grills, diffusers, etc.

5. Seal wall mounted electrical panels with a minimum of two layers of six-mil fire retardant plastic sheeting prior to placing wall plastic.

6. Pre-clean entire work area including all immovable objects using HEPA vacuums and wet methods. Seal all immovable objects with a minimum of two layers of six-mil fire retardant plastic sheeting. When covering and sealing machinery or other immovable items that may be damaged by being covered with plastic sheeting, humidity, or other adverse conditions, the contractor must take whatever action is necessary to preserve their original condition.

7. Construct critical barriers to demarcate the regulated area. Critical barriers must be constructed in manner that will permit them to retain their integrity throughout the project, and to prevent the migration of asbestos dust from the regulated area.

8. Warning signs must be displayed at all entrances and approaches to the regulated area. Warning signs must comply with the requirements of OSHA 29 CFR 1926.1101 (k)(7)(i)-(iii).The contractor is responsible for ensuring that all building occupants and non-English speaking employees are able to comprehend the warning signs. When necessary the contractor will display signs in foreign languages, pictographs, and graphics. Signs such as these will be in addition to warning signs in English.

9. Construct worker and equipment/disposal decontamination units in accordance with EPA and OSHA guidelines and regulations. Separate decontamination areas are required for personnel and equipment. Provide both hot and cold water for personnel shower. Trap and filter all wastewater using a progressive stage filter system.

10. Cover floor in work areas with two layers of six-mil fire retardant plastic sheeting, turning up the walls a minimum of 16 inches. Cover walls with two layers of six-mil fire retardant plastic sheeting overlapping floor plastic a minimum of 12 inches. Maintain a minimum of three feet overlap between seams. Glue and tape all seams to prohibit air movement between joints. Repair all damaged barriers immediately upon discovering.

11. Place work area under negative air pressure utilizing HEPA filtration systems. Maintain negative air pressure in the regulated area continuously from the start of asbestos removal until successful completion of final clearance air testing. Maintain a negative pressure of at least 0.02 inches of water column, and four complete air changes in the regulated area per hour based on the total volume of the area. When determining the number of negative air units, assume that the actual efficiency of the machine is 80% of the rated capacity. The exhaust of all negative air machines must be discharged to the outside of the building.

12. In addition to the above requirements, one spare HEPA filtration air movement machine will be kept at each project location: One inside the regulated area for use in the event of equipment failure, filter changes, and other maintenance.

13. Provide temporary power, lighting, and heating/cooling (when necessary) to work area. Install ground fault interrupters on all temporary circuits.

14. Prior to the start of any asbestos abatement activity a contractor's project logbook will be established. This logbook will serve as a vehicle for maintaining all the records associated with the project. The logbook will be used to record accidents, unusual events or occurrences (such as failure of the negative air system or containment barriers) personnel and area air sampling results, notes concerning any deviation from standard work practices, daily sign-in/sign-out of employees and authorized visitors, and a day-by-day account of the work progress. Record the name, employer, date, time-in time-out, and the purpose of entry into the regulated area. The logbook will also record emergency telephone numbers inside the front cover. The logbook will be hard bound and shall be signed each day by the Consultant and the project supervisor.

15. Notify Consultant for observation and approval of work area prior to beginning removal.

B. Asbestos Removal

1. Remove and dispose of all asbestos-containing materials (ACM) in accordance with OSHA regulations.

2. Spray ACM until saturated with amended water using an airless sprayer. Apply water throughout removal process to maintain wet condition.

3. Do not permit ACM to fall more than 12 feet. Utilize inclined chutes or scaffolds for greater heights.

4. When abatement work is performed 50 feet or above floor level, asbestos materials must be transported to the ground via dust chutes or containers.

5. Continuously bag all ACM debris. Do not allow ACM to accumulate on floor or to dry out. All asbestos materials must be adequately wet before being placed into bags.

C. Clean-up and Clearance Testing

1. Wet clean and HEPA vacuum all surfaces until work area is free of all visible debris.
2. Clean and remove from work area all equipment (if not required for further use), materials, impermeable containers, etc.

3. Notify Consultant for first visual observation and approval to determine completeness.

4. Perform no activity in work area for a minimum of eight hours.

5. Perform second phase cleaning of all surfaces in work area utilizing wet cleaning and HEPA vacuums.

6. Notify Consultant for second visual observation and approval to determine completeness.

7. As determined necessary by the consultant, perform no activity in work area for a minimum of six to eight hours.

8. Perform third phase cleaning of all surfaces in work area utilizing wet cleaning and HEPA vacuum.

9. Notify EH&S and Consultant for third visual observation and approval to determine for completeness.

10. Notify Testing Laboratory to perform Preliminary Final Air Testing.

11. After successful completion of preliminary final air testing, spray all surfaces in work area with sealant. Perform no activity in work area until sealant dries.

12. Remove plastic sheeting from walls and floor. Do not remove plastic from doors, windows, vents, penetrations, etc.

13. Notify EH&S, Consultant and Testing Laboratory to perform Final Clearance Observation and Air Testing.

14. Re-clean at Contractor's expense work areas that do not comply with standard of cleaning for final clearance.

15. Re-clean at Contractor's expense, work areas which do not meet specified final clearance air level.

16. Notify EH&S of clearance air sample results.

17. Upon successful final air clearance, as determined by the Consultant, dismantle and remove remaining plastic sheeting, decontamination chamber, and any other materials not previously removed. Thoroughly wet clean work area.

18. Remove all traces of tape adhesive, and staples. Repair or make good any damaged caused through abatement operations.

19. Notify Consultant for work area observation and approval to determine completeness.

3.2 FLOOR TILE REMOVAL

A. Preparation

1. Isolate from work area all air handling systems.

2. Shut down and lock out all air handling systems supplying air to, from or through work area.

3. Decontaminate all moveable items, using HEPA vacuums and wet methods, and remove from work area.

4. Seal with fire retardant plastic sheeting, adhesive and tape all penetrations to work area, including, but not limited to, corridors, doorways, windows, ducts, grills, diffusers, etc.

5. Seal wall mounted electrical panels with a minimum of two layers of fire retardant plastic sheeting prior to placing wall plastic.

6. Pre-clean entire work area including all immovable objects using HEPA vacuums and wet methods. Seal all immovable objects with a minimum of two layers of fire retardant plastic sheeting.

7. When covering and sealing machinery or other immovable items that may be damaged by being covered with fire retardant plastic sheeting, humidity, or other adverse conditions, the contractor must take whatever action is necessary to preserve their original condition.

8. Warning signs must be displayed at all entrances and approaches to the regulated area. Warning signs must comply with the requirements of OSHA 29 CFR 1926.1101 (k)(7)(i)-(iii).The contractor is responsible for ensuring that all building occupants and non-English speaking employees are able to comprehend the warning signs. When necessary the contractor will display signs in foreign languages, pictographs, and graphics. Signs such as these will be in addition to warning signs in English.

9. Construct worker and equipment/disposal decontamination units in accordance with EPA and OSHA guidelines and regulations. Separate decontamination areas are required for personnel and equipment. Provide both hot and cold water for personnel shower. Trap and filter all wastewater using a progressive stage filter system.

10. Cover walls in work areas with one layer of six-mil fire retardant plastic sheeting. Glue and tape all seams.

11. Place work area under negative air pressure utilizing HEPA filtration systems. Maintain negative air pressure in the regulation area continuously from the start of asbestos removal until successful completion of final clearance air testing. Maintain a negative pressure of at least 0.02 inches of water column, and four complete air changes in the regulated area per hour based on the total volume of the area. When determining the number of negative air units, assume that the actual efficiency of the machine is 80% of the rated capacity. The exhaust of all negative air machines must be discharged to the outside of the building.

12. Provide temporary power and lighting to work area. Install ground fault interrupters on all temporary circuits.

13. Maintain a hard bound project log book at the entrance to the regulated area. Record the name, social security number, employer, date, time-in/time-out, and the purpose of entry into the regulated area. Emergency telephone numbers must be recorded inside the front cover.

14. Notify Consultant for observation of work area prior to beginning removal.

B. Asbestos Removal

1. Remove and dispose of all asbestos-containing materials (ACM) in accordance with OSHA regulations.

2. Spray ACM with amended water using an airless sprayer. Apply water throughout removal process to maintain wet condition.

3. Remove tiles in as whole sections as possible. If floor tile removal within defined work space does not extend to a seam between tiles, the contractor shall remove the tile to the seam immediately outside the defined area unless directed otherwise by the Owner or Asbestos Consultant.

4. On completion of the tile removal the substrate must be cleaned of any mastic or adhesive used to bind the tile to its surface. If adhesive removers are used, workers must be equipped with suitable respiratory protection to avoid the inhalation of vapors from these solutions. Adhesive removers

having a flash point of less than 60°C (140°F) will not be permitted. Waste material generated from the use of adhesive removers will be considered a hazardous waste unless proved otherwise by a Toxicity Characteristic Leaching Procedure (TCLP). Hazardous wastes must be disposed of in compliance with the Resource Conservation and Recovery Act (RCRA).

5. Continuously bag all ACM debris. Do not allow ACM to accumulate on floor.

C. Cleanup and Clearance Testing

1. Wet clean and HEPA vacuum all surfaces until work area is free of all visible debris.

2. Clean and remove from work area all equipment (if not required for further use), materials, impermeable containers, etc.

3. Notify Consultant for visual observation and approval to determine completeness.

4. Notify Testing Laboratory to perform Preliminary Final Air Testing.

5. After successful completion of preliminary final air testing, spray all surfaces in work area with sealant. Perform no activity in work area until sealant dries.

6. Remove plastic sheeting from walls. Do not remove plastic from doors, windows, vents, penetrations, etc.

7. Notify EH&S and Consultant for visual observation and approval to determine for completeness.

8. Notify EH&S, Consultant and Testing Laboratory to perform Final Clearance Air Testing.

9. Re-clean at Contractor's expense, work areas which do not meet specified final clearance air level.

10. Notify EH&S of clearance air sample results.

11. Upon successful final air clearance, as determined by the Consultant, dismantle and remove remaining plastic sheeting, decontamination chamber, and any other materials not previously removed. Thoroughly wet clean work area.

12. Remove all traces of tape adhesive, and staples. Repair or make good any damaged caused through abatement operations.

13. Notify Consultant for work area observation and approval to determine completeness.

D. Alternative Floor Tile Removal Method

1. Follow the January 2018 or most recent version of the Resilient Flooring Covering Institute (RFCI) recommended work practices for the removal of resilient floor coverings. The January 2018 or most recent version of the RFCI Guidelines are issued by:

Resilient Floor Covering Institute
115 Broad Street
LaGrange, GA 30240
(706) 882-3833.

2. University of Florida EH&S reserves the right to conduct air sampling during removal as to insure the safety of the faculty, staff, and students.

3. The Work Area shall be exhausted to the exterior of the facility when solvent removal of the floor tile mastic is conducted.

4. The Work Area must be restricted with the required OSHA Danger sign posted.

5. The use of alternative methods of abatement is at the sole discretion of EH&S on a project by project basis.

3.3 GLOVE BAG REMOVAL

A. Preparation

1. Install critical barriers and demarcate a regulated area. Critical barriers may be established around the abatement area in the form of a mini enclosure.

2. Place asbestos warning signs at all approaches to the regulated area.

3. Shut down and lock out all air handling systems supplying air to, from or through the regulated area.

4. Isolate from the regulated area all air handling equipment.

5. Decontaminate, using HEPA filtered vacuums and wet methods, and remove from the regulated area all moveable items.

6. Pre-clean entire regulated area including all immovable objects using HEPA filtered vacuums and wet methods.

7. Seal with fire retardant plastic sheeting and tape all penetrations to the regulated area, including, but not limited to, corridors, doorways, windows, ducts, grills, diffusers, etc. When covering and sealing machinery or other immovable items that may be damaged by being covered with fire retardant plastic sheeting, humidity, or other adverse conditions, the contractor must take whatever action is necessary to preserve their original condition.

8. Place one layer of six-mil thick fire retardant plastic sheeting on the floor of the work area.

9. Where walls do not exist, construct walls using a minimum of two layers, six-mil fire retardant plastic sheeting. 2’ x 4’ framework shall support fire retardant plastic sheeting.

10. Install a changing cubical adjacent to the regulated area and a dedicated HEPA filtered vacuum cleaner for worker decontamination.

11. Place work area under negative air pressure utilizing HEPA filtration systems. Maintain negative air pressure in the regulated area continuously from the start of asbestos removal until successful completion of final clearance air testing. Maintain and record on a strip chart recorder a negative pressure of at least 0.02 inches of water column, and four complete air changes in the regulated area per hour based on the total volume of the area. When determining the number of negative air units, assume that the actual efficiency of the machine is 80% of the rated capacity. The exhausts of all negative air machines must be discharged to the outside of the building.

12. Limit access to the regulated area to authorized persons only.

13. Workers entering the regulated area must be provided with and wear protective equipment and negative pressure respirators (as a minimum), before commencing any abatement activities.

14. Maintain a hard bound project log book at the entrance to the regulated area. Record the name, social security number, employer, date, time-in/time-out, and the purpose of entry into the regulated area. Emergency telephone numbers must be recorded inside the front cover.

15. The above procedures are for small scale short duration activities only. Any other use of glove bags will only be permitted if the regulated area meets all the requirements of convention removal practices outlined elsewhere in this specification. The Consultant reserves the right to amend these procedures to meet specific project requirements or locations.

B. Asbestos Removal

1. Perform glove bag procedure in accordance with manufacturers written instructions.

2. Install glove bag onto piping. Completely seal all penetrations and seams with adhesive and tape.

3. Smoke test each glove bag prior to performing removal. Reseal any leaks indicated by the testing.

4. Utilize one glove bag per removal location. Do not move or slide glove bag once installed.

5. Spray ACM until saturated with amended water using an airless sprayer. Apply water throughout removal process to maintain wet condition.

6. Remove and dispose of all asbestos-containing materials (ACM) in accordance with OSHA regulations.

C. Clean-up and Clearance Testing

1. Wet clean and HEPA vacuum all surfaces until pipe is free of all visible debris.

2. Notify Consultant for visual observation and approval to determine completeness.

3. Spray all surfaces inside glove bag with sealant.

4. Any asbestos-containing insulation edges that have been exposed as a result of the removal or maintenance activity must be encapsulated with a bridging encapsulant and enclosed using a rewettable glass-fiber cloth. The glove bag operator must ensure that exposed edges are completely sealed so as not to release asbestos fibers to the atmosphere after the glove bag has been removed.

5. Notify EH&S and Consultant for visual observation and approval to determine for completeness.

6. Collapse glove bag using HEPA vacuum. Seal bag with tape and remove from pipe. Place glove bag in a six mil disposable plastic bag.
7. Notify EH&S, Consultant and Testing Laboratory to perform Final Clearance Air Testing.

8. Re-clean at Contractor's expense, work areas which do not meet specified final clearance air level.

9. Notify EH&S of clearance air sample results.

10. Upon successful final air clearance, as determined by the Consultant, dismantle and remove remaining plastic sheeting, and any other materials not previously removed. Thoroughly wet clean work area.

11. Remove all traces of tape adhesive, and staples. Repair or make good any damaged caused through abatement operations.

12. Notify Consultant for work area observation and approval to determine completeness.

3.4 REMOVAL OF ASBESTOS CEMENT PANELS

A. Preparation

1. Establish a regulated area by placing warning notices and barricades a minimum of ten feet around the cement panels to be removed. Place a warning notice at all entrances to the asbestos abatement work area.

2. Clean all movable items within the regulated area by HEPA vacuum and wet cleaning methods, and store them outside the area.

3. Pre-clean area immediately adjacent to asbestos cement panels.

4. Cover the complete floor of the regulated area with one layer of six-mil thick fire retardant plastic sheeting.

5. Protect with fire retardant plastic any areas that may be damaged or affected by the use of amended water.

6. Spray all sides of cement panels with amended water.

B. Asbestos Removal

1. The surface of the cement panel must be kept wet at all times during removal.

2. Remove carefully any mounting brackets or screws. Immediately wet any dry areas that become exposed as brackets or other retaining mounts are removed.

3. Every effort must be made to remove the panels in whole sections.

4. Immediately upon removal the panels must be packaged in plastic bags. Larger items may be wrapped in two layers of six-mil thick plastic sheeting. Bags or plastic sheeting must be sealed so as to provide an air tight seal. All bags or items wrapped in plastic sheeting must be sealed so as to provide an air tight seal. All bags or items wrapped in plastic sheeting must be labeled in accordance with OSHA and EPA requirements.

C. Clean-up and Clearance Testing

1. Wet clean and HEPA vacuum all surfaces within the regulated area.

2. Notify Consultant for visual observation and approval to determine completeness.

3. Spray plastic sheeting and the immediate area from where the cement panel has been removed with a clear sealant.

4. Perform no further work until the sealant has dried.

5. Remove all plastic sheeting.

6. Notify EH&S and Consultant for visual observation and approval to determine completeness.

7. Notify EH&S, Consultant and Testing Laboratory to perform Final Clearance Air Testing.
8. Upon receipt of acceptable air sample results, notify UF-EH&S, and remove warning signs and barricades.

9. Remove all traces of tape adhesive, and staples. Repair or make good any damaged caused through abatement activities.

3.5 ROOFING MATERIAL REMOVAL

A. Preparation

1. Where necessary coordinate removal sequence with General or Roofing Contractor.

2. The complete roof or sections of the roof as decided by the Consultant will be the regulated area. This will be determined by installing a rope barrier at a minimum of 10 feet from the edge of the work area, or around the complete roof. Warning signs will be posted along the perimeter at five foot intervals.

3. Install suitable restraints to protect employees from falling from all unprotected sides and edges of the roof. These restraints should meet the OSHA requirements whenever required.

4. Seal all penetrations or openings to the building faces, 10 feet from the perimeter of the Work Area and on the roof with plastic sheeting and duct tape.

5. Isolate all doorways, windows and vents 10 feet around the perimeter of the Work Area.

6. Pre-clean immovable objects such as exhaust ducts. Completely seal in plastic all immovable items following cleaning or wet-cleaning methods as appropriate. Do not use methods that raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filtration.

7. Maintain emergency and fire exits from the Work Areas, or establish alternative exits satisfactory to fire officials.

8. Provide temporary power and lighting as specified in other sections.

9. Construct worker and equipment disposal decontamination units in accordance with OSHA regulations. Separate decontamination areas are required for personnel and equipment. Provide both hot and cold water for personnel shower. Trap and filter all wastewater using a progressive stage filter system. (See Drawing AB-1 for further details.)

10. Maintain a hard bound sign in/sign out log at work area entrance beginning with preparation of the area.

11. Notify Consultant for observation of Work Area prior to beginning removal.

B. Asbestos Removal

1. Spray ACM with amended water using an airless sprayer. Apply water throughout removal process to maintain wet condition.

2. Cut asbestos-containing roofing materials with hand tools. Do not use power tools unless approved by local Air Pollution Control Authority.

3. Remove all roofing materials.
4. Do not permit asbestos-containing material to fall from roof.

5. Continuously bag all ACM debris. Do not allow ACM to accumulate on the roof or to dry out.

6. Discontinue ACM removal and cleaning operations and immediately secure Work Area, and notify Consultant and Owner should any of the following conditions develop:

   I. Wind velocities or gusts in Work Area exceed 15 miles per hour.

   II. Environmental air monitoring samples collected down wind at perimeter of Work Area indicate airborne fiber concentrations of 0.05 f/cc or greater.

C. Clean-up and Clearance Testing

1. Wet clean and HEPA vacuum all surfaces until Work Area is free of all visible debris.

2. Clean and remove from Work Area all equipment (if not required for further use), materials, impermeable containers, etc.

3. Notify EH&S, Consultant and Testing Laboratory to perform Final Visual Observation.

4. Re-clean at Contractor's expense work areas that do not comply with standard of cleaning for final clearance.

5. Re-clean at Contractor's expense work areas that do not meet specified final clearance air level.

6. Upon successful final air clearance, as determined by the Consultant, dismantle and remove remaining plastic sheeting, decontamination chamber, and any other materials not previously removed. Thoroughly wet clean Work Area.

7. Notify Consultant for work area observation to determine completeness.

3.6 DISPOSAL OF CONTAMINATED WASTE

A. All plastic bags used for disposal of ACM shall be labeled in accordance with OSHA and DOT regulations.

B. Consider all debris waste, plastic sheeting, disposable clothing, etc. as asbestos containing materials.

C. Notify Consultant not less than 24 hours prior to the time of removing and delivery of contaminated waste to the landfill.

D. Seal asbestos waste in impermeable containers labeled in accordance with OSHA regulations. As a minimum, double bag all waste in 6 mil plastic bags.

E. Vehicles used to transport asbestos-containing waste material are to be marked with the sign prescribed by EPA during loading and unloading. The sign must be posted and visible during loading and unloading activities.

F. Place two layers of six-mil plastic sheeting on floors and walls of waste disposal vehicle. Use only lockable, fully enclosed vehicles/dumpster to transport

materials to landfill. The enclosed vehicle/dumpster must be kept closed at all times, except when bags are being placed in it, and must be locked when unattended.

G. Transport double bagged contaminated waste from work area to truck/dumpster in hard wall impermeable containers.

H. Deposit only sealed plastic bags in landfill. Bags that are damaged must be over slipped with a new bag and sealed. Broken or damaged bags must be suitably wetted before being over slipped.

I. Remove all plastic sheeting from disposal vehicle, place in two six mil plastic bags and dispose as contaminated waste.

1. Comply with applicable OSHA regulations and guidance documents issued by the EPA.

2. Provide a personnel decontamination unit consisting of a serial arrangement of connected rooms or spaces, clean room, shower room, and equipment room.

3. Softwall

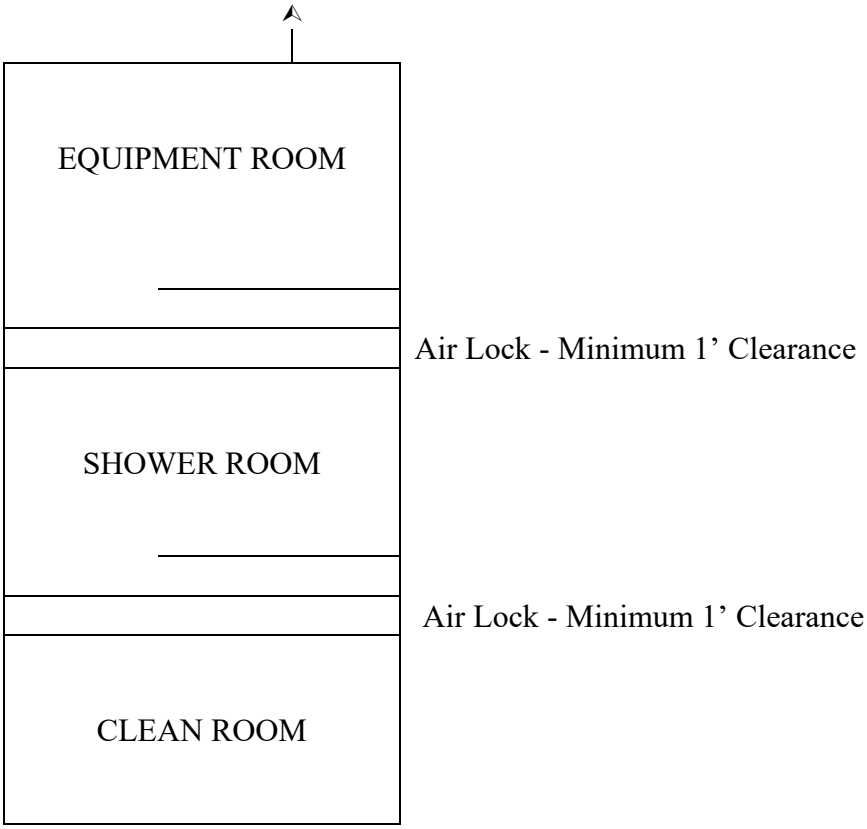
A) Construct walls and ceiling using fire retardant polyethylene sheeting, at least six-mil in thickness. Attach to existing building components or a temporary framework.

4. Hardwall

B) Construct walls and ceiling using fire retardant polyethylene sheeting, at least six-mil in thickness. Attach to existing building components or a temporary framework. Cover surface of decontamination unit with 3/8" CDX plywood.

5. Use two layers (minimum) of six-mil fire retardant polyethylene sheeting to cover floors in the equipment, shower (underneath shower pan), and clean rooms.

6. Provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' x 3' square with a minimum six-feet high sides and back. Structurally support as necessary for stability. Connect drain to a reservoir, pump water from reservoir through filters to drain.



DRAWING AB-1

END OF SECTION