

TECHNICAL SPECIFICATIONS –

ASBESTOS-CONTAINING MATERIALS REMOVAL AND DISPOSAL

UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

For

**UNIVERSITY OF MISSOURI
PROJECT [Enter the project number,
Project Name/Facility Name]**

Prepared for

**UNIVERSITY OF MISSOURI
Campus Facilities
[Columbia], Missouri [65211]**

Prepared by

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PART 1 – GENERAL

Provisions of the General Conditions and Special Conditions are part of this Division.

The Contractor shall inform him/herself of the conditions for the project and is responsible for verifying the quantities and locations of all work to be performed as outlined in this technical specification. Failure to do so shall not relieve the Contractor of his obligation to furnish all materials and labor necessary to carry out the provisions of the Contract.

Contractor shall assume full responsibility and liability for compliance with all codes, ordinances, rules, regulations, orders and other legal requirements of Federal, State, and Local public authorities including, but not limited to, the U.S. Environmental Protection Agency (EPA), Occupational Health and Safety Administration (OSHA), and the Missouri Department of Natural Resources (MDNR), which bear on performance work. Where conflicts occur between these specifications and/or the above-mentioned regulatory agencies, the more stringent shall govern. The Contractor shall hold the Owner and Owner's air monitoring firm harmless for failure to comply with any applicable work, hauling, safety, health, or other regulations on the part of the Contractor, Contractor's employees, or Contractor's subcontractors.

Contractor affirms and shall be solely responsible for ensuring all personnel involved in asbestos abatement and/or universal waste/hazardous building material removal operations are adequately trained, appropriately certified, and qualified for the duties and responsibilities they are conducting. Further, any personnel required to don a respirator shall be medically cleared by a physician to wear such respirator, must be participating in a medical monitoring program, and have a current, acceptable respirator fit test. Contractor further affirms that all certifications, training, qualifications, fit testing results, physician's clearance statement, etc., shall be provided upon demand to the Owner's Abatement Representative.

If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be accomplished by appropriate modification. It is not the Contractor's responsibility to make certain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, rules or regulations. If the Contractor performs any work knowing it to be contrary to such laws, statutes, ordinances, building codes, rules or regulations, and without such notice to the Owner, he shall assume full responsibility therefore and shall bear all costs attributable thereto.

The use of the best available technology, procedures, and methods for preparation, execution, cleanup, disposal, and safety are absolutely required. This compliance is the sole responsibility of the Contractor.

Contractor will confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed.

Contractor shall assume full responsibility for protection and safekeeping of products stored on premises.

Contractor shall move any stored products which interfere with operations of Owner or other contractors.

Contractor shall utilize only those areas designated by the Owner for the storage of equipment

and the placement of dumpsters/transport containers.

Contractor shall take all precautions necessary to ensure there is no asbestos containing materials or universal waste/hazardous building material contamination to those areas not included in work area. Should areas outside the work area become contaminated with hazardous wastes, the Contractor shall immediately clean them utilizing the wet cleaning and HEPA vacuum methods specified herein. The Contractor is responsible for the proper cleanup of all items in the work areas to maintain a clean and safe environment.

Owner reserves the right to unrestricted access of the work area by qualified and trained individuals, as designated by the Owner, for the purposes of monitoring, evaluating, or otherwise inspecting the condition of the work area and/or progress of work being performed by Contractor. No access shall be granted to untrained personnel and the Contractor shall ensure site security to prevent unauthorized access by untrained personnel.

1.1 SCOPE OF WORK COVERED BY CONTRACT DOCUMENTS

1.1.1 ASBESTOS-CONTAINING MATERIALS REMOVAL AND DISPOSAL

The work specified herein shall be the abatement of asbestos containing materials (ACM) by certified and registered persons who are knowledgeable, qualified and trained in the abatement, handling, and disposal of ACM, and subsequent cleaning of the affected environment.

The Contractor shall furnish all labor, material, equipment, testing, services, permits, insurance, notifications, necessary or required to perform the work for the abatement of ACM and for other work as specified in this section or as indicated in associated drawings, sketches, or reports of the work.

All fees required for notification requirements, renotifications, and/or inspections by the regulatory agencies shall be paid by the Contractor. Bulk sample analysis information required by the Missouri Department of Natural Resources (MDNR), U.S. Environmental Protection Agency (EPA), or local authority having jurisdiction in conjunction with the notification shall also be provided by the Contractor unless provided within this section.

Based upon a survey conducted by **[specify either EHS or a contracted service working on Owner's behalf]**, the work shall include the removal and legal disposal of **[specify Friable and/or Non-friable ACM, as applicable, or enter "Not Applicable"]**:

Friable asbestos:

The Contractor shall remove and legally dispose of:

[Enter the volume of material to be abated or enter "Not Applicable". Volumes should be rounded up, where appropriate, to accommodate minor errors/discrepancies.]

Non-friable asbestos:

The Contractor shall remove and legally dispose of:

[Enter the volume of material to be abated or enter "Not Applicable". Volumes should be rounded up, where appropriate, to accommodate minor errors/discrepancies.]

1.1.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

The Contractor shall be responsible for the coordination of the universal waste/hazardous building materials removal for this project with the Owner's Abatement Representative. The Contractor shall coordinate with the Owner's Abatement Representative, all other on-site contractors, and all subcontractors working under separate contracts so as to facilitate the general progress of the work. Each trade shall afford all trades every reasonable opportunity for the installation/completion of their work.

For all universal waste/hazardous building materials designated for removal, the default process will be that the Owner shall provide appropriate containers, the Contractor shall remove and place materials in their respective containers, and the Owner shall arrange for proper disposal of all containerized universal waste/hazardous building materials. Any deviations from this process need to be identified and agreed upon between the Owner and Contractor prior to implementation.

Based upon a survey conducted by [**specify either EHS or a contracted service working on Owner's behalf**], the work shall include the removal of the following types and quantities of universal waste/hazardous building materials:

Hazardous Building Materials

- **Polychlorinated Biphenyls (PCBs)**

[Enter the quantity and types of devices to be removed or enter "Not Applicable". Round up, where appropriate, or qualify the quantity as "Approximately" to accommodate for minor errors/discrepancies. Examples include "Door Closers", "Light Ballasts"]

- **Radioactive Sources**

[Enter the quantity and types of devices to be removed or enter "Not Applicable". Round up, where appropriate, or qualify the quantity as "Approximately" to accommodate for minor errors/discrepancies. Examples include "Smoke Detectors", "Non-Powered Exit Signs"]

Universal Waste

- **Mercury-Containing Equipment**

[Enter the quantity and types of devices to be removed or enter "Not Applicable". Round up, where appropriate, or qualify the quantity as "Approximately" to accommodate for minor errors/discrepancies. Examples include "Mercury Thermostats", "Mercury Switches"]

- **Mercury-Containing Lamps**

[Enter the quantity and types of devices to be removed or enter "Not Applicable". Round up, where appropriate, or qualify the quantity as "Approximately" to accommodate for minor errors/discrepancies. Examples include "Fluorescent Lamps (length)", "Compact Fluorescent Lamps"]

- **Batteries (non-alkaline)**

[Enter the quantity and types of devices to be removed or enter "Not Applicable". Round up, where appropriate, or qualify the quantity as "Approximately" to accommodate for minor errors/discrepancies.]

Reclaimable/Recyclable Materials

[Enter the quantity and types of devices to be removed or enter “Not Applicable”. Round up, where appropriate, or qualify the quantity as “Approximately” to accommodate for minor errors/discrepancies. Examples include “Drinking Fountain”, “Window Air Conditioner”. If refrigerants must be recovered, you must include “CFC/HCFC refrigerants shall be reclaimed by a licensed contractor certified to perform those operations.” Older drinking fountains may have lead reservoirs, which, if so, must be removed and secured for separate disposal by EHS.]

Building Materials Painted with Regulated Heavy Metals

[Enter the quantity and type(s) of materials painted with intact regulated paint (not chipping/flaking). Round up, where appropriate, or qualify the quantity as “Approximately” to accommodate for minor volume errors/discrepancies.]

These materials shall be disposed with Construction/Demolition debris in an approved waste disposal site authorized by the appropriate designated regulatory agency for the state in which the site is located.

CONTRACTOR OPERATIONS

The Contractor is responsible for contacting EHS at least three (3) business days prior to beginning the project for training procedures related to universal waste/hazardous building materials removal, handling, and collection of these materials. Any light fixtures, housings, etc., containing Universal Wastes/Hazardous Building Materials shall also be included in collection efforts for disposal by EHS. This does not include refrigerant or CFC/HCFC-containing equipment, which are being recovered by the Contractor.

- **Materials With RCRA-Metals Paint (Intact)**

It is anticipated that demolition debris with regulated paint that is intact (not peeling/chipping/flaking) will be removed as part of the demolition process and will be hauled away and disposed by the Contractor at an approved waste disposal site authorized by the appropriate designated regulatory agency for the state in which the site is located to accept construction and demolition waste.

- **Fluorescent Light Tubes**

Fluorescent light tubes may contain small amounts of mercury. This can potentially be harmful to human health and the environment. If fluorescent light tubes are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2. Care shall be taken by the Contractor to minimize breakage during removal and placement into containers.

- **Polychlorinated Biphenyls (PCBs)**

PCBs are a known carcinogenic material. Their use was discontinued January 1, 1979. It shall be assumed that light ballasts contain PCBs unless they are labeled as “PCB-free” by the manufacturer. If light ballasts are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2. The Contractor shall segregate and containerize PCB ballasts separate from non-PCB ballasts. PCB and non-PCB ballasts shall be properly disposed by EHS.

- **Smoke Detectors**

Ionization-type smoke detectors may contain a small amount of radioactive material. If smoke detectors are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2 and will be properly disposed by EHS.

- **Fire Alarm Strobe Lights**

Fire alarm strobe lights are typically not considered a universal or hazardous waste. If fire alarm strobe lights are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2. EHS will dispose of the strobe lights as E-waste.

- **Exit Signs and Emergency Lights**

These items typically have backup batteries that may contain small amounts of heavy metals. Certain exit signs are powered by a small amount of radioactive material. If exit signs and/or emergency lights are part of the scope of this project, they shall be managed by the default process set out in Section 1.1.2. The Contractor shall remove and containerize non-alkaline batteries for EHS to properly manage. The Contractor shall assume any non-powered exit signs to contain radioactive material and will containerize for University EHS to properly dispose.

- **Drinking Fountains**

Some drinking fountains have reservoirs that may contain lead and a CFC/HCFC refrigerant that must be recovered. If drinking fountains are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2. Any lead reservoirs shall be removed and containerized by the Contractor for recycling by EHS. The CFC/HCFC refrigerant must be recovered by a contractor licensed and trained in this type of work and documented. The final disposition of reclaimed refrigerants will be determined between Owner and Contractor for each project. The remainder of the unit shall be managed as scrap by the Contractor.

- **Door Closers**

Some older door closer units have oil reservoirs for lubrication. These oils may contain small amounts of PCBs. If door closers are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2.

- **Thermostats**

Thermostats may contain elemental mercury, which can potentially be harmful to human health and the environment. If elemental mercury-containing thermostats are part of the scope of the project, they shall be managed by the default process set out in Section 1.1.2.

- **Window Air-Conditioning Units**

Where possible, these window units should be removed and offered to the Owner for use elsewhere. If directed by the Owner, they shall be discarded. These units may contain CFC/HCFC refrigerants that must be recovered. CFC/HCFC refrigerants are suspected to damage the atmosphere. The CFC/HCFC refrigerant must be recovered by a contractor licensed and trained in this type of work and documented. The final disposition of reclaimed refrigerants will be determined between Owner and Contractor for each project. The remainder of the unit shall be discarded by the Contractor.

1.2 DEFINITIONS

1.2.1 ASBESTOS ABATEMENT

1. **Abatement** – Procedures to decrease or eliminate the source of fiber release from asbestos containing building materials. Includes encapsulation, enclosure, and removal.
2. **Adequately Wet** – To sufficiently mix or penetrate with liquid to prevent the release of particulate.

3. **Aggressive Air Sampling** – Sweeping of floors, ceilings and walls and other surfaces with the exhaust of a minimum of one (1) horsepower leaf blower or equivalent immediately prior to air monitoring.
4. **Approved Waste Disposal Site** – A solid waste disposal area that is authorized to receive asbestos containing solid wastes by the appropriate designated regulatory agency for the state in which the site is located. (For Missouri, the agency is the Missouri Department of Natural Resources.)
5. **Asbestos** – Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered. (Additionally, it has been shown that vermiculite insulation is often contaminated with tremolite and may be managed as asbestos out of an abundance of caution.)
6. **Asbestos Abatement Supervisor** – An individual who directs, controls, or supervises others in asbestos abatement projects.
7. **Asbestos Containing Building Material (ACBM)** – Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.
8. **Asbestos Containing Material (ACM)** – Any material containing more than one percent (1%) asbestos by weight.
9. **Barrier** – Any surface that seals off the work area to inhibit the movement of asbestos fibers during abatement. Barrier may also refer to an engineering control to restrict unauthorized access to the work area.
10. **Category I Nonfriable ACM** – Asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than one percent (1%) asbestos as determined using the method specified in 40 CFR part 763, subpart F, Appendix A, section 1, Polarized Light Microscopy.
11. **Category II Nonfriable ACM** – Any material, excluding Category I Nonfriable ACM, containing more than one percent (1%) asbestos as determined using the methods specified in 40 CFR part 763, subpart F, Appendix A, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
12. **Competent Person** – one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f). In addition, for Class I, II, III, and IV work, one who is specially trained in training courses, which meet the criteria of EPA's Model Accreditation Plan (40 CFR Part 763) for project designer or supervisor, or its equivalent.
13. **Containment** – Area where asbestos abatement project is conducted. Area must be enclosed either by a glove bag or plastic sheeting barrier. The process of sealing off and containing asbestos-contaminated areas to prevent the spread of asbestos fibers. This can

include using enclosures, plastic sheeting, and decontamination systems.

14. **Contractor's Competent Person (Qualified Person)** – One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32 (f). In addition, for Class I, II, III, and IV work, one who is specially trained in training courses which meet the criteria of EPA's Model Accreditation Plan (40 CFR Part 763) for project designer or supervisor, or its equivalent.
15. **Decontamination Area** – Enclosed area adjacent and connected to the regulated area which is used for decontamination of workers, materials, and equipment that are contaminated with asbestos. (See also Remote Decontamination Area)
16. **Demolition** – The wrecking or taking out of all material not being reused including any load bearing structural member of a facility together with any related handling operations.
17. **Disposal Bag** – A properly labeled six (6) mil thick leak-tight plastic bag used for transporting asbestos waste from work area to disposal site.
18. **Environmental Health & Safety (EHS)** – The University's contact for container(s) to collect universal wastes, hazardous building materials, and reclaimed/recycled materials. Select EHS staff who are properly trained and certified are also authorized to serve as Owner's Abatement Representatives to oversee abatement operations and enforcement of the specifications.
19. **Encapsulant (Sealant)** – A liquid material which can be applied to asbestos-containing material and which prevents the release of asbestos fibers from the material either by creating a membrane over the surface or by penetrating the material and binding its components together.
20. **Encapsulation** – Treatment of asbestos containing materials with an encapsulant.
21. **Enclosure** – The construction of an airtight, impermeable, permanent barrier around asbestos containing material to control the release of asbestos fibers into the air.
22. **Friable Asbestos Material** – Any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763 Section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
23. **Glove Bag** – A manufactured or fabricated device, typically constructed of six (6) mil transparent polyethylene or polyvinyl chloride plastic. This device consists of two (2) inward projecting long sleeves, an internal tool pouch and an attached, labeled receptacle for asbestos waste.
24. **HEPA Vacuum Equipment** – High efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining hazardous particulates. Filters should be of 99.97% efficiency for retaining particulates greater than 0.3 microns.
25. **Homogeneous Work Site** – Continuous areas with the same type of ACM and in which one type of abatement process is performed.

26. **Negative Initial Exposure Assessment** – An assessment by a "Competent Person" in which it is concluded that employee exposures during the job are likely to be consistently below the Permissible Exposure Levels; that non-friable asbestos will be removed and maintained in a non-friable condition.
27. **Outside Air** – Air outside of the containment.
28. **Owner's Air Monitoring Firm** – An entity who is not under the direct control of the asbestos abatement contractor and who has been selected by the Owner to conduct air monitoring. This may be a representative of University EHS or a contracted service provider working directly on behalf of the Owner.
29. **Owner's Air Sampling Professional** – An individual who holds a valid Air Sampling Professional certification from the State of Missouri (643.225 RSMo) and who is not under the direct control of the asbestos abatement contractor. The individual shall conduct, oversee, or be responsible for air monitoring of asbestos abatement projects before, during, and after the project has been completed. This may be a representative of MU EHS or a representative of a contracted service provider working directly on behalf of the Owner.
30. **Owner's Air Sampling Technician** – An individual who has been trained by, and is under the direct supervision of, the certified Owner's Air Sampling Professional and who has met requirements of training found in OSHA's 29 CFR 1926.1101 (643.225 RSMo) to do air monitoring before, during, and after the asbestos abatement project on behalf of the Owner's Air Monitoring Firm.
31. **Owner's Abatement Representative** – the University's representative responsible for air monitoring and enforcement of the technical specifications. The Owner's Abatement Representative may be either the University's Project Manager or a member of EHS who are adequately trained and hold a Missouri Asbestos Occupation Competent Person certification or are a Certified Industrial Hygienist.
32. **Personal Monitoring** – Sampling of the asbestos fiber concentrations within the breathing zone in a manner consistent with abatement operation regulations, i.e., sample 25% of each job description of the work force plus one peak (excursion) sample per shift.
33. **Regulated Asbestos Containing Material (RACM)** – Friable asbestos material; Category I nonfriable ACM that has become friable; Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; Category II nonfriable ACM that has a high probability of becoming, or has become, crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
34. **Remote Decontamination Area** – Enclosed or controlled area which is used for decontamination of workers performing Class I, II, or IV asbestos abatement activities. A designated space, often a mobile unit, located away from the immediate work area where workers can decontaminate themselves and their equipment after exposure to asbestos, typically when it's not feasible to have a decontamination area directly adjacent to the regulated abatement zone due to location or accessibility constraints; essentially a shower and change area situated at a distance from the asbestos removal site.

35. **Remove** – To take out RACM or facility components that contain or are covered with RACM from any facility.
36. **Renovation** – Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component.
37. **Repair** – The restoration of asbestos material that has been damaged. Repair consists of the application of rewettable glass cloth, canvas, cement or other suitable material. It may also involve filling damaged areas with non-asbestos substitutes and re-encapsulating or painting previously encapsulated materials.
38. **Strip** – To take off RACM from any part of a facility or facility components.
39. **Waste Shipment Record** – The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos containing waste material.
40. **Wet Cleaning/Wiping** – The process of eliminating contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by, afterwards, properly disposing of these cleaning tools as necessary.
41. **Work Area** – A specific isolated area, other than the space enclosed within a glove bag, in which asbestos-containing materials is required to be handled. The area is designated as a work area from the time that the area is secured and access restrictions are in place. The area remains designated as a work area until the time that it has been cleaned in accordance with any requirements applicable to the operations conducted.

1.2.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

1. **Approved Waste Disposal Site** – A solid waste disposal area that is authorized to receive construction and demolition (C/D) wastes by the appropriate designated regulatory agency for the state in which the site is located. (For Missouri, the agency is the Missouri Department of Natural Resources.)
2. **Authorized Visitor** – The Owner, the Owner's Representative, or a representative of any regulatory or other agency having jurisdiction over the project and properly trained.
3. **Building Owner** – A designated representative of the University of Missouri.
4. **Disposal Container** – A properly labeled container for universal waste, hazardous building materials, reclaimed/recycled materials, or, potentially, any regulated paint debris. Disposal containers will be provided by EHS as part of the hazard remediation contractor's pre-work.
5. **Environmental Health & Safety (EHS)** – The University's contact for container(s) to collect universal wastes, hazardous building materials, and reclaimed/recycled materials. Select EHS staff who are appropriately trained and certified are also authorized to serve as Owner's Abatement Representatives to oversee abatement operations and enforcement of the specifications.

6. **Hazardous Building Material** – Materials such as PCB-containing waste or radioactive sources (smoke detectors, etc.), that are not considered Universal Waste, but that the Owner will rely upon a Hazardous Waste Shipment Record for documentation to support proper disposal.
7. **Hazardous Waste Shipment Record/Disposal Receipt** – The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of universal waste, hazardous wastes, and specific hazardous building materials.
8. **HEPA Vacuum Equipment** – High efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining hazardous particulates. Filters should be of 99.97% efficiency for retaining particulates greater than 0.3 microns.
9. **Owner's Abatement Representative** – The University's representative responsible for monitoring and enforcement of the technical specifications. The Owner's Abatement Representative may be either the University's Project Manager or a member of EHS who are adequately trained and certified to serve as a technical expert regarding management of Universal Waste/Hazardous Building Materials.
10. **Universal Waste** – EPA's universal waste regulations streamline the hazardous waste management standards for certain categories of hazardous waste that are commonly generated by a wide variety of establishments. The streamlined regulations:
 - promote the collection and recycling of universal waste,
 - ease the regulatory burden on retail stores and other generators that wish to collect these wastes and transporters of these wastes, and
 - encourage the development of municipal and commercial programs to reduce the quantity of these wastes going to municipal solid waste landfills or combustors.
11. **Work Area** – A specific isolated area in which universal waste/hazardous building materials are required to be handled. The area is designated as a work area from the time that the area is secured and access restrictions are in place. The area remains designated as a work area until the time that it has been cleaned in accordance with any requirements applicable to the operations conducted.

1.3 CODES AND REGULATIONS

1.3.1 ASBESTOS ABATEMENT

General Applicability of Codes, Regulations and Standards - All applicable codes, regulations, standards, statutes, laws, and rules 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. Where conflicts arise, the most stringent specification shall apply.

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, hauling/disposal of regulated materials, 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 harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulations on the part of the Contractor, Contractor's employees, or Contractor's subcontractors.

SECTION 02 8000 ASBESTOS-CONTAINING MATERIALS REMOVAL AND DISPOSAL &
UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

Federal and State requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials include, but are not limited to, the following:

1. U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) including but not limited to:
 - 29 CFR 1910.1001 and 29 CFR 1926.1101.
 - Respiratory Protection, 29 CFR 1910.134.
 - Construction Industry, 29 CFR 1926.1101
 - Access to Employee Exposure and Medical Records, 29 CFR 1910.2.
 - Hazard Communication, 29 CFR 1910.1200.
 - Specifications for Accident Prevention Signs and Tags, 29 CFR 1910.145.
2. U.S. Environmental Protection Agency (EPA) including but not limited to:
 - National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR, Part 61, Subpart M.
3. U.S. Department of Transportation (DOT) including but not limited to:
 - 49 CFR, Part 172, Section 101.
4. State of Missouri including but not limited to:
 - Missouri Air Conservation Law Chapter 643. (643.225-643.250 RSMo)
 - Missouri Department of Natural Resources, Division 10, Chapter 6 of the Code of State Regulations as follows:
 - (1) 10 CSR 10-6.020, Definitions
 - (2) 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants
 - (3) 10 CSR 10-6.230, Administrative Penalties
 - (4) 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements

1.3.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

All applicable codes, regulations, standards, statutes, laws, and rules 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. Where conflicts arise, the most stringent specification shall apply.

SECTION 02 8000 ASBESTOS-CONTAINING MATERIALS REMOVAL AND DISPOSAL &
UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

Federal and State requirements which govern universal waste and hazardous waste removal work or hauling and disposal of such waste materials include, but are not limited to, the following:

1. U.S. Department of Labor, Occupational Health and Safety Administration (OSHA), 29 CFR 1910 and 29 CFR 1926.
 - Construction Industry - 29 CFR 1926.1101
 - Respiratory Protection – 29 CFR 1910.134
 - Hazard Communication – 29 CFR 1910.1200
 - Accident Prevention Signs – 29 CFR 1910.145
2. U.S. Environmental Protection Agency (EPA)
 - Resource Conservation and Recovery Act (RCRA), 40 CFR Parts 239-282 [Hazardous Waste includes Universal Waste]
 - Toxic Substances Control Act (TSCA), 40 CFR Parts 700-761
3. Missouri Department of Natural Resources
 - Hazardous Waste Management Law, Chapter 260, Sections 350-433, RSMo
 - 10 CSR 25, includes MO Universal Waste Rule (Pub 2058), Ch 16

1.4 NOTIFICATIONS (ASBESTOS ABATEMENT ONLY)

Notifications meeting the requirements of Missouri's Air Conservation Law shall be completed and sent by the Contractor not less than ten (10) days before the intended starting date of the project. Contractors with annual abatement notifications must provide at least twenty-four (24) hours notification before the intended starting date of the project. Send notification to:

MDNR/Air Pollution Control Program (Asbestos Unit)
P.O. Box 176
Jefferson City, Missouri 65102
573-751-4817 / 800-361-4827

Completed and signed notifications may be sent electronically to
asbestosnotifications@dnr.mo.gov

Provide a copy to the Owner's Abatement Representative. Five (5) day notification to the Owner's Abatement Representative is required on jobs less than the reportable quantity ("Courtesy Notifications").

If the project is also within the jurisdiction of the Kansas City Health Department's Air Quality Program, St. Louis County Health Department's Asbestos Program, St. Louis City's Division of Air Pollution Control, or the City of Springfield, send additional required notification directly to the appropriate local agency.

Kansas City Health Department, Air Quality Program
2400 Troost Ave., Suite 3000
Kansas City, MO 64108
816-513-6314

St. Louis County Health Department, Asbestos Program
6121 N Hanley Road
Berkeley, MO 63114
314-615-8924

St. Louis City, Division of Air Pollution Control
1520 Market St., Room 4051
St. Louis, MO 63103
314-657-1479

City of Springfield
290 E. Central Street
Springfield, MO 65802
417-864-2031

1.5 SUBMITTALS

1.5.1 ASBESTOS ABATEMENT

General Requirements The following will be submitted by Contractor, in electronic format or paper copy, a minimum of 10 days prior to commencement of work for approval by the Owner's Abatement Representative (EHS or Project Manager). Owner's Abatement Representative may provide comments that must be addressed before concurrence and, otherwise, will provide concurrence that documents received are acceptable:

- 1 One copy of Safety Data Sheets (SDS) for products to be used by the Contractor in the performance of his work. Contractor will also maintain copies of SDS's on site per OSHA.
- 2 One copy of the notifications to, or any correspondence with, the regulatory agencies.
- 3 Documentation that the regulatory authority has approved of the planned abatement.
- 4 Submit a listing of all prior regulatory violations.

1.5.1.1 Friable ACM Abatement Operations

In addition to the **General Requirements**, submit the following:

- 1 A summary of project personnel, job titles, and contact phone numbers.

- 2 Name, address, and contact person's name of testing laboratory or laboratories to be utilized analyzing samples for bulk analysis or air samples. The laboratory(ies) must be certified through the National Voluntary Laboratory Accreditation Program (NVLAP).
- 3 A detailed plan of the procedures proposed for use in complying with requirements of this specification, the Missouri Air Conservation Law, and 29 CFR 1926.1101. Include in the plan the layout and location of barriers, decontamination units, routes of ingress and egress for work area, methods used to assure safety of building occupants and visitors, methods used to isolate or closing out of HVAC system, personal air monitoring strategy, method of removal of material, and engineering controls utilized to prevent emissions from the work area.
- 4 A disposal plan to detail type of disposal container, method of transportation to disposal site, waste hauler, and disposal site.
- 5 Copy of the Emergency Protection Plan that includes notifications.

1.5.1.2 Non-Friable ACM Abatement Operations

In addition to the **General Requirements**, submit the following:

- 1 A summary of project personnel, job titles, and contact phone numbers.
- 2 A detailed plan of the procedures proposed to minimize emissions and to prevent the material from becoming friable during removal.
- 3 Copy of the Emergency Protection Plan that includes notifications (to be used if the nonfriable material should become friable during removal).
- 4 One copy of the Negative Initial Exposure Assessment.

1.5.1.3 Post-Abatement

Upon completion of the abatement work, the Contractor shall provide the following information to the Owner's Abatement Representative within 10 working days.

- Waste disposal receipts and waste shipment records on all asbestos waste removed from the project.

Upon completion of the abatement work, the Owner shall provide the following information to the Contractor.

- Air sampling test results of final clearance air samples taken under the supervision of Owner's Air Sampling Professional will be provided to both the Contractor and the Project Manager by EHS. Results must be in written report form. Electronic transmittal is acceptable.
- Written certification from the Project Manager that abatement is complete. Electronic transmittal is acceptable.

1.5.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

1.5.2.1 Pre-Removal

General Requirements The following will be submitted by Contractor 10 days prior to commencement of work for approval by the Owner's Abatement Representative (EHS or Project Manager). Owner's Abatement Representative may provide comments that must be addressed before concurrence or, otherwise, will provide concurrence that documents received are acceptable:

1. One copy of any Safety Data Sheets (SDS) for products to be used by the Contractor in the performance of his work. Contractor will also maintain copies of SDS's on site per OSHA.
2. A list of project personnel and contact phone numbers.
3. A detailed plan of the procedures proposed for use in complying with requirements of this specification. Include in the plan the layout and location of work areas, routes of ingress and egress for the work areas, methods to be used to assure safety of building occupants and visitors, method(s) of removal of material, and disposal container requirements for the wastes anticipated to be removed for disposal lead based paint waste to be disposed.
4. Proposed disposal site for any materials that EHS will not be directly managing disposal for, including a disposal plan to detail type of disposal container, method of transportation to disposal site, and waste hauler.
5. Any other submittals as required by Owner.

1.5.2.2 Post-Removal

Upon completion of universal waste/hazardous building materials removal operations, the Contractor shall submit to the Owner's Abatement Representative, copies of all shipping records, disposal receipts, recycling documentation, etc., for all materials removed from the project site by Contractor for disposal.

Upon completion of the universal waste/hazardous building materials removal operations, the Owner's Representative will provide written certification to the Contractor that all applicable universal waste/hazardous building materials wastes have been removed from the facility. Electronic transmittal is acceptable.

PART 2 – PRODUCTS

2.1 MATERIALS

All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

Contractor shall store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

Damaged or deteriorating materials shall not be used and shall be removed from the premises.

Contractor shall provide suitable materials for asbestos abatement and universal waste/hazardous building materials removal operations including, but not limited to:

Plastic Sheeting: A minimum 6-mil (or as specified).

Tape: Capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water, duct tape, poly prep tapes or approved equal.

Adhesives: Capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water. Adhesives will not be used on any property without prior written approval from the Owner's Abatement Representative (EHS or Project Manager)

Impermeable Containers: Suitable to receive and retain any universal waste/hazardous building materials until disposal by the Owner's Abatement Representative (EHS). The containers shall be labeled as required by Owner. Containers must be resistant to damage and rupture.

Warning Labels and Signage: As required by law and/or Owner.

Other Materials: Provide all other materials, such as, but not limited to, lumber, plywood, nails, and hardware, which may be required to properly prepare and complete this project.

2.2 TOOLS AND EQUIPMENT

Provide suitable tools for asbestos abatement and universal waste/hazardous building material removal operations including, but not limited to:

Water Sprayer: Airless or a low pressure sprayer for amended water application as applicable.

Air-Purifying Equipment: High Efficiency Particulate Air Filtration Systems (HEPA) shall comply with ANSI Z9.2-91. No air movement system or air equipment should discharge particulates outside the work area. Thus, the negative air unit shall be equipped with a three filter bank with the last being the HEPA filter capable of removing 99.97% of fibers/particulates >0.3 microns.

Scaffolding: As required to accomplish the specified work and meet all applicable safety regulations.

Vacuums: Use HEPA type from a known manufacturer.

Other tools and equipment as necessary.

PART 3 – EXECUTION

3.1 SUPERVISION

3.1.1 ASBESTOS ABATEMENT

The Contractor shall designate a competent Supervisor subject to the approval of the Owner's Abatement Representative. The Supervisor shall be the Contractor's representative on the project, shall meet the requirements of all applicable laws and regulations, and meet/perform the following tasks, at a minimum:

1. Be certified by the State of Missouri as an Asbestos Abatement Supervisor, have a minimum of one year prior full time experience in asbestos abatement work, a minimum of two years' experience as a supervisor, and be qualified as a Competent Person in accordance with OSHA regulation 1926.1101.
2. Be on-site and supervise all abatement work in accordance with all applicable laws and regulations.
3. Conduct all OSHA-required personal exposure air monitoring during abatement operations.
4. Maintain a daily log on the project documenting events, visitations, problems, equipment failures, accidents, and inspections.
5. Be responsible for implementation of first aid, safety training, respiratory protection, and ensuring all workers are trained in emergency procedures.
6. Be responsible for conducting a visual inspection of the work area prior to a visual inspection by the Owner's Abatement Representative. Inspection shall be documented.

3.1.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

The Contractor shall designate a competent Supervisor subject to the approval of the Owner's Abatement Representative. The Supervisor shall be the Contractor's representative on the project, shall meet the requirements of all applicable laws and regulations, and meet/perform the following tasks, at a minimum:

1. Be knowledgeable in all aspects of removal, cleanup, and proper handling of universal waste/hazardous building materials as listed in the Scope of Work.
2. Be on-site and supervise all removal, cleanup and handling of universal waste/hazardous building materials as listed in the Scope of Work.
3. Maintain a daily log on the project documenting events, violations, problems, equipment failures, accidents, and inspections.
4. Be responsible for implementation of first aid, safety training, respiratory protection, and ensuring all workers are trained in emergency procedures.
5. Be responsible for conducting a visual inspection of the work area prior to a visual inspection by the Owner's Abatement Representative. Inspection shall be documented.

3.2 NEGATIVE INITIAL EXPOSURE ASSESSMENT (ASBESTOS ABATEMENT ONLY)

When not starting removal with Type C protection, the Contractor must conduct a Negative Initial Exposure Assessment (non-friable asbestos) prior to removal of the asbestos material. The Negative Initial Exposure Assessment shall be performed by a "Competent Person" to determine whether the material may be removed and maintained in a non-friable condition. If the material cannot be removed without becoming friable then the Contractor shall comply with all legal and regulatory requirements for managing friable asbestos at no additional cost to the Owner.

The method of removal is the Contractor's option. However, in the event of any of the following:

1. Visible emissions are observed
2. Sanding, grinding, cutting, or abrading of the material
3. Air samples exceed 0.1 f/cc (fibers per cubic centimeter)

The Contractor shall immediately stop work, implement corrective work practices, make any necessary notifications to all regulatory agencies of the changes in work practices and material conditions, and comply with the requirements as set forth in this specification.

3.3 WORKER PROTECTION & TRAINING

3.3.1 ASBESTOS ABATEMENT

1. The Contractor shall be responsible for providing their employees with proper respiratory protection, respiratory training, a written respiratory program, medical monitoring program (medical examinations, maintaining medical records), and protective clothing and equipment to comply with OSHA requirements.
2. The Contractor shall be responsible for all testing and costs incurred for complying with requirements of OSHA regulations for Personal Air Sampling.
3. All workers shall be trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and protective measures.
4. All workers shall be certified as accredited Asbestos Abatement Workers as required by 10 CSR 10-6.250.

3.3.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

1. The Contractor shall be responsible for providing their employees with proper respiratory protection, respiratory training, a written respiratory program, medical examinations, maintaining medical records, protective clothing and equipment to comply with OSHA requirements, if applicable and necessary.
2. All workers shall be trained in the dangers inherent in handling universal waste/hazardous building materials, in proper work procedures, and personal protective measures.

3. Prior to commencement of work, the workers shall be instructed and shall be knowledgeable on the hazards of the universal waste/hazardous building materials involved and other environmental exposures, use and fitting of respirators, protective clothing, decontamination procedures, and all aspects of removal work procedures.
4. The Contractor acknowledges that he alone is responsible for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard for each phase of operation.
5. If required or requested of the workers, provide workers with personally issued and marked respiratory equipment approved by NIOSH and accepted by OSHA.
6. Where required or if requested by the workers, provide workers with sufficient sets of disposable protective full-body clothing. Such clothing shall consist of full-body coveralls, footwear, and head gear, one-piece coveralls or equal. Provide eye protection and hard hats as required by applicable safety regulations. Disposable clothing shall not be allowed to accumulate and shall be disposed of as contaminated waste.
7. No visitors shall be allowed in work areas, except as authorized.
8. Provide authorized visitors with suitable protective clothing, headgear, footwear, and gloves as described above whenever they are required to enter the work area.

3.4 INDEPENDENT TESTING LABORATORY (ASBESTOS ABATEMENT ONLY)

Testing laboratories utilized by the Contractor for sample analysis during the project shall meet the following minimum requirements and be approved by the Owner's Abatement Representative. This information shall be submitted to the Owner's Abatement Representative for review.

1. All air monitoring samples shall be analyzed by a testing laboratory accredited by the American Industrial Hygiene Association (AIHA) or by an individual who is currently on the Asbestos Analyst Registry.
2. All bulk samples shall be analyzed by a testing laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

3.4.1 ASBESTOS BULK SAMPLE ANALYTICAL METHODS

3.4.1.1 Friable Materials:

Asbestos Analysis of Bulk Materials via AHERA Method 40 CFR 763, Subpart E, Appendix E supplemented with EPA 600/R-93/116 (Calibrated Visual Estimate, reporting limit to <1%) using Polarized Light Microscopy

3.4.1.2 Non-Friable (caulking):

Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 (Calibrated Visual Estimate, reporting limit to <1%) using Polarized Light Microscopy

3.4.1.3 Non-Friable (mastics, adhesives):

Asbestos Analysis of Non-Friable Organic Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 (Calibrated Visual Estimate, reporting limit to <1%) using Polarized Light Microscopy

3.4.1.4 Non-Friable (vinyl floor tile):

Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1 (target reporting limit 0.5%) with Gravimetric Reduction)

3.4.2 ASBESTOS AIR MONITORING ANALYTICAL METHODS

3.4.2.1 PCM – Air:

Use NIOSH 7400

3.4.2.2 PCM – Air That Fails:

Using NIOSH 7400. Reclean area and retest. If area fails a third time, contact EHS for further instructions. Possible retesting using AHERA (40 CFR Part 763 Appx. A subpart E) or NIOSH 7402

3.5 OWNER'S REMEDIATION PROFESSIONAL

3.5.1 ASBESTOS ABATEMENT

It will be the Owner's responsibility to provide and/or hire an Air Sampling Professional. The Owner's Air Sampling Professional for this project shall be **[specify either provided by EHS staff or a contracted service working on Owner's behalf, if applicable or "Not Applicable"]**. The Owner's Air Sampling Professional will be required to perform the following duties at a minimum:

1. Approval of the Contractor's work plan and methods of ACM abatement to meet regulatory requirements and ensure the health and safety of University faculty, staff, and students.
2. Visual inspection of the work area and final clearance air monitoring.
3. Issue final air clearance to the Contractor and the University Project Manager.

3.5.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

It will be the Owner's responsibility to provide and/or hire a Specialist certified, trained, and knowledgeable in handling and managing universal waste/hazardous building materials. The Specialist for this project shall be **[specify either provided by EHS staff or a contracted service working on Owner's behalf, if applicable or "Not Applicable"]**. The Specialist will be required to perform the following duties as a minimum:

1. Approval of the Contractor's work plan and methods of remediation to meet regulatory requirements and ensure the health and safety of University faculty, staff, and students.
2. Verify that the Contractor is satisfactorily performing the work in accordance with OSHA

regulations.

3. Visual inspection of the work areas.

3.6 SEPARATION OF WORK AREAS FROM NON-WORK AREAS

In addition to other physical barriers/controls required to isolate work areas and prevent unauthorized access/entry, universal waste/hazardous building materials removal operations work areas shall integrate visual separation. Visual separation shall be accomplished at all "see-through" locations using opaque polyethylene. This separation shall not be incorporated within the other seals involved on this project.

3.7 EMERGENCY PROTECTION PLAN

1. The Contractor shall be responsible for developing a written Emergency Protection Plan and shall maintain this plan on site. The plan shall include considerations of asbestos and/or universal waste/hazardous building material releases, fire, explosion, toxic atmospheres, electrical hazards, slips, falls, and heat related injuries. All employees shall be instructed and trained in the procedures.
2. The Emergency Protection Plan shall include written notification procedures for police, fire and medical personnel of the planned abatement activities, work schedule, and layout of work area, particularly barriers that may affect response capabilities.
3. The Contractor shall designate and maintain emergency and fire exits from the work area(s) in accordance with local codes and regulations. All exits shall be clearly marked with fluorescent tape or red paint and shall be clearly visible from any part of the work area.

3.8 LOCAL AREA PROTECTION & SITE SECURITY

1. The Contractor shall be responsible for all areas of the building used by them and/or subcontractors in the performance of the work. Contractor shall exert full control over the actions of all its employees and other persons with respect to the use and preservation of the existing building, except such controls as may be specifically reserved to the Owner.
2. Contractor shall secure the work areas to make sure of no inadvertent entry. Any breach to the exterior of the building shall be secured by the Contractor. The Contractor shall be responsible for maintaining security of the remediation area throughout the contract period.
3. Contractor has the right to exclude from the work area all persons who have no purpose related to the work or its inspection and shall require all persons in the work area to observe the same regulations required of Contractor's employees.
4. The Contractor shall have control of site security during abatement operations in order to protect work environment and equipment. Contractor shall have the Owner's assistance in notifying building occupants of impending activity and enforcement of restricted access by Owner's employees.

5. The Contractor shall keep a minimum of two 10 lb., Type-ABC fire extinguishers on-site. One shall be maintained outside the work area and one inside the work area. Contractor's employees shall be trained in the operation of extinguishers.
6. Where remediation areas cannot be isolated by existing walls and doors from University employees, students, or the public, barriers must be constructed of 1/2" plywood sheeting over 2"x4", 16" on-center framing to isolate the area. The barriers must be installed in a manner to prevent damage to existing walls, floors, or ceilings. Barrier(s) may have a lockable door.
7. The Contractor shall maintain the work area free from rubbish, debris, and dirt and keep a clean, safe working area.
8. The Contractor shall provide warning signage around the regulated remediation area as required by OSHA. Owner reserves the authority to require additional signage, if it is deemed appropriate.
9. If applicable, the Contractor shall isolate any and all air supply and returns to the abatement space as required by OSHA. Contractor shall coordinate these efforts with the Owner's Abatement Representative.
10. If applicable, the Contractor shall keep all areas where adhesive stripper is in use (such as mastic removal) under negative pressure and exhausted to the outside ambient air.

3.9 FINAL CLEARANCE REQUIREMENTS (FRIABLE ASBESTOS ABATEMENT ONLY)

1. Upon completion of the abatement work, the Contractor's Asbestos Abatement Supervisor shall perform a visual inspection of the work area. If satisfactory, the Supervisor shall then request the Owner's Abatement Representative and/or Air Sampling Professional to perform a visual inspection. When the Owner's Abatement Representative and/or Air Sampling Professional deems the area is ready based on the results of their visual inspection, the Contractor shall apply a lockdown encapsulant. Following application of lockdown encapsulant, the Owner's Air Sampling Professional shall perform the final clearance sampling for airborne fiber concentrations.
2. The Owner's Air Sampling Professional will perform final clearance testing per the following requirements:
 - Aggressive sampling shall be required for all areas where removal has taken place with the exception of glove bag projects where nonaggressive sampling is permitted.
 - Phase contrast microscopy (PCM) samples analyzed on-site shall be counted by an accredited registered microscopist.
 - For areas specifically designated for clearance by Transmission Electron Microscopy, the method shall be NIOSH 7402.
3. Any work areas failing to meet the clearance requirements of this section shall be recleaned and retested at the Contractor's expense until satisfactory levels are obtained.

4. The Owner's Abatement Representative and/or Air Sampling Professional shall provide a written report of the air monitoring activities to the Contractor within seven (7) days after the final clearance testing. Electronic transmittal is acceptable.

3.10 REESTABLISHMENT OF THE WORK AREA AND SYSTEMS

3.10.1 ASBESTOS ABATEMENT

1. Reestablishment of the work area shall only occur after the Contractor has received final clearance in writing from the Owner's Abatement Representative. Electronic transmission is acceptable.
2. Any damages to finishes, equipment, and/or the area affected by the abatement shall be repaired by the Contractor to equal or better condition as it was prior to the work, at no cost to the Owner.

3.10.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS REMOVAL

1. Reestablishment of the work area shall only occur after the Contractor has received a final visual inspection from the Owner's Abatement Representative documenting that the universal waste/hazardous building materials have been removed from the project site.

3.11 WASTE DISPOSAL

3.11.1 ASBESTOS

1. All asbestos-containing waste and/or asbestos-contaminated debris shall, at a minimum, be adequately wet, double bagged in approved 6-mil polyethylene leakproof disposal bags or containers. Each bag or container shall be tagged to meet requirements of NESHAP with an asbestos caution label and a source identification label.
2. Transportation shall meet the requirements of all regulatory agencies for asbestos containing materials and shall be transported in an enclosed truck.
3. The waste disposal site shall be approved by the designated regulatory agency for the state in which the site is located (Missouri Department of Natural Resources in Missouri) for asbestos disposal. A chain-of-custody letter/waste shipment record and disposal receipts shall be provided to the Owner for all ACM and contaminated debris disposed.

3.11.2 UNIVERSAL WASTE/HAZARDOUS BUILDING MATERIALS

1. University EHS shall assume responsibility for the proper disposal of all universal waste/hazardous building materials being removed on behalf of the Owner as a part of this Scope of Work. As the Generator of the waste, EHS will document and maintain records on the transportation and fate of universal waste/hazardous building materials disposed on behalf of the University.
2. The fate of recyclable materials and recovered refrigerants will be identified prior to work beginning.

3.12 DRAWINGS

1. Drawings, when provided, are not intended to be used for anything but a "reference" to the work area. Information is not specific to quantities or to exact location of ACM and/or universal waste/hazardous building materials unless explicitly noted. Contractor will be required to field verify the conditions and quantities.

3.13 REPORTS

1. Reports, when provided, are intended to be used as a basis for the type and composition of the asbestos and/or universal waste/hazardous building materials present for both bidding purposes and for the information required for the notifications to the governing agencies.