

ADDENDUM NUMBER TWO

for

REBID - Taylor House Phase II Renovations

Project No.: U-899-18

State Project Number: H27-Z366

COLUMBIA, SOUTH CAROLINA

PREPARED BY:

The Boudreaux Group 1519 Sumter Street, Columbia, South Carolina 29201

DATE OF ISSUE: May 7, 2019

TO: ALL BIDDERS OF RECORD, CONSULTANTS, OWNER:

The following items shall take precedence over the drawings and specifications for the above named project and shall become a part of the contract documents. Where any item called for in the specifications, or indicated on the drawings, is not supplemented hereby, the original requirements shall remain in effect. Where any original item is amended, voided or superseded hereby, the provisions of such item not specifically amended, voided or superseded shall remain in effect.

CONTRACTOR SHALL ACKNOWLEDGE RECEIPT OF ADDENDUM.

This addendum consists of 1 page and the following attachments: 'Asbestos Abatement Project Design-Taylor House Phase II Renovations;' Abatement Plan drawing AB-1. *(NOTE: UofSC has performed the abatement work listed in the documents prior to bidding, and BOUDREAUX is including these documents for the Bidder's convenience. F&ME has produced these documents directly for UofSC, hired as a consultant to UofSC. F&ME is not a consultant to BOUDREAUX nor has a contractual relationship with BOUDREAUX. As such, BOUDREAUX does not take responsibility for or liability for the work described in these documents.)*

I. GENERAL CLARIFICATIONS:

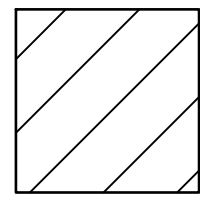
1. Bid Deadline has been extended to 3:00pm on May 22nd. Delivery location and all other details remain unchanged.
2. Final deadline for questions is 5:00pm on May 15th.
3. Final Addendum will be issued no later than 3:00pm on May 17th.
4. A site visit will be held at the Taylor House, located at 1505 Senate St. Columbia, SC 29201, from 1-2:30pm on Wednesday, May 8th. Meet at the front entrance of the House. Questions will be taken and addressed in a formal Addendum.

END OF ADDENDUM

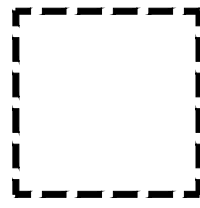
REBID - Taylor House Phase II Renovations

Addendum Number Two

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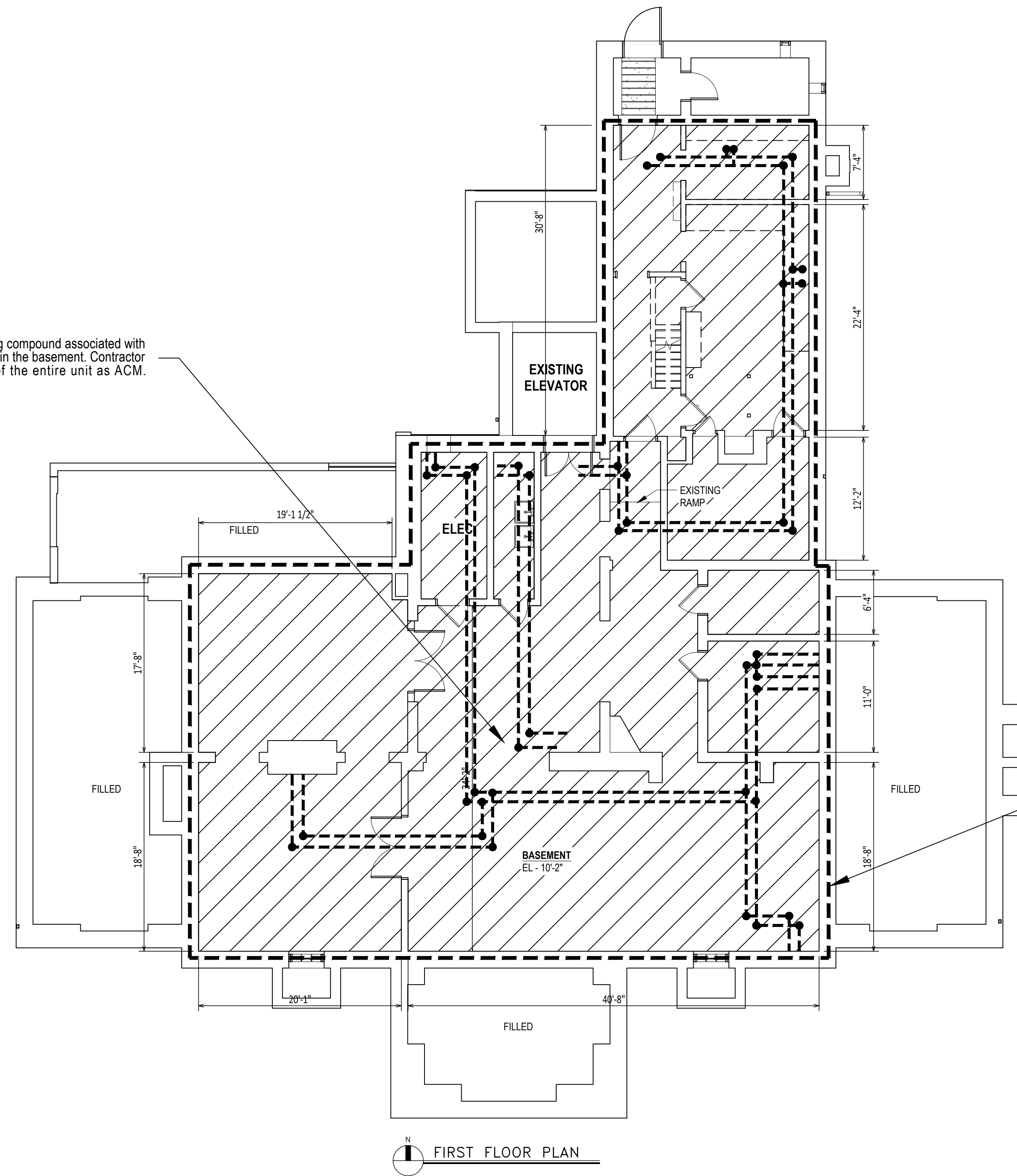


Contractor shall clean all vertical and horizontal surfaces throughout basement areas included in limits of abatement.



Contractor to remove all TSI pipe insulation and mudded fittings associated with mechanical lines throughout the limits of abatement.

Contractor shall abate the ACM mudding compound associated with the interior of the existing boiler located in the basement. Contractor shall have the option of disposing of the entire unit as ACM.



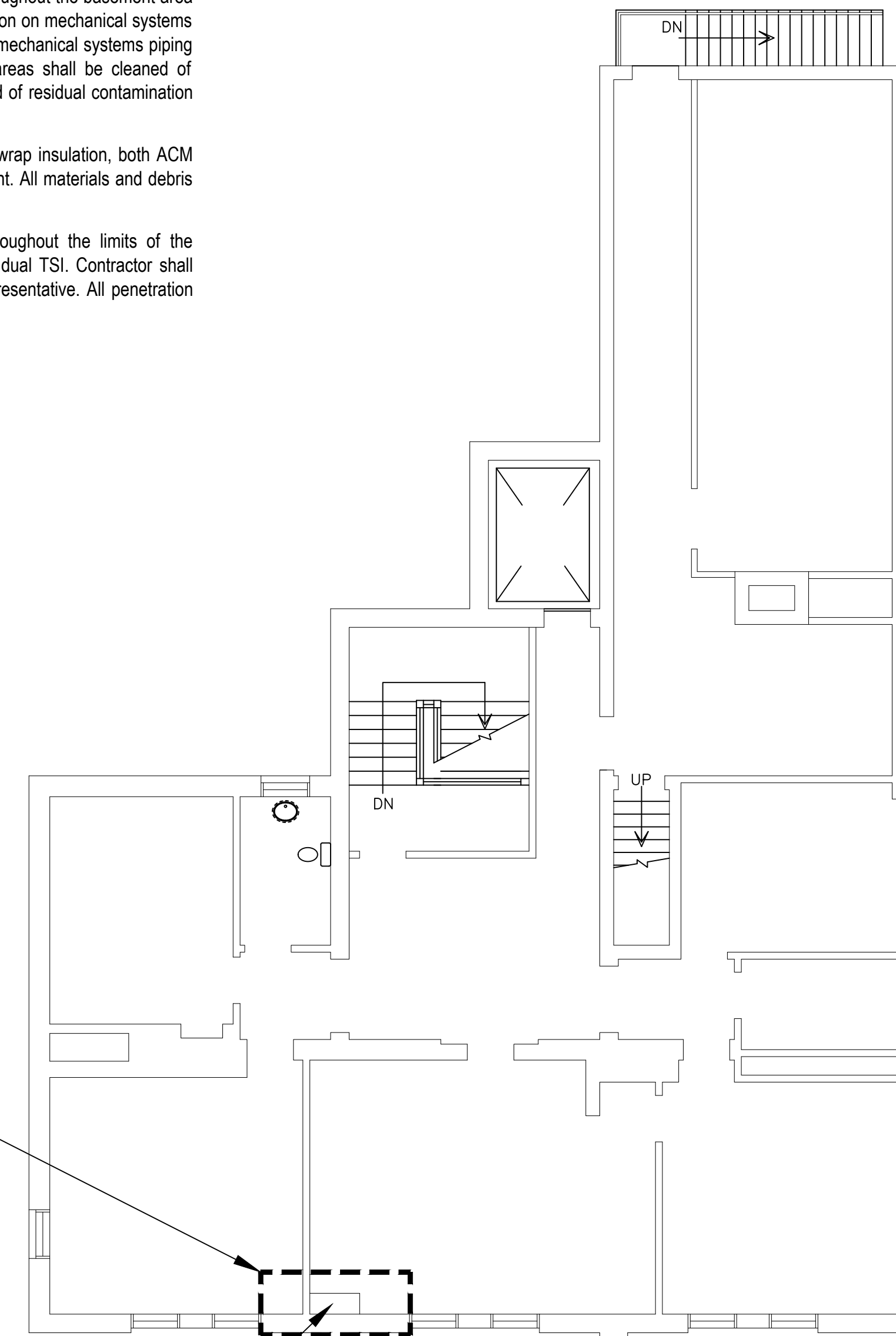
FIRST FLOOR PLAN

ABATEMENT GENERAL NOTES

1. Contractor shall thoroughly read all specifications and plans and thoroughly review all abatement documents prior to commencement of abatement activities.
2. The Contractor shall be responsible for verification of all site conditions and quantities associated with the abatement prior to the bid.
3. Contractor is to ensure that all governing EPA, the SCDHEC and OSHA regulations are followed during the abatement of the facility.
4. Containment shall be established and in place prior to the start of friable abatement activities.
5. Negative pressure shall be established prior to start of gross removal during friable abatement activities.
6. Contractor is to be aware that all areas within the limits of abatement throughout the basement area have been deemed contaminated from damaged thermal systems insulation on mechanical systems piping and fittings. All surfaces, to include walls, floors, ceilings, existing mechanical systems piping and ductwork, as well as materials stored throughout the basement areas shall be cleaned of residual contamination. Materials stored in these spaces shall be cleaned of residual contamination or removed, handled and disposed of as ACM.
7. Contractor shall abate all TSI pipe insulation, mudded fittings and duct wrap insulation, both ACM and non-ACM pipe insulation found throughout the limits of the abatement. All materials and debris generated shall be disposed of as ACM.
8. All through wall penetrations associated with mechanical systems throughout the limits of the abatement shall be inspected during friable abatement activities for residual TSI. Contractor shall remove all TSI from penetrations to the satisfaction of the Owners Representative. All penetration shall be filled with non-combustible spray foam prior to clearance testing.

Limits of Abatement

Contractor shall abate ACM duct wrap/tape on the metal HVAC duct within the interior of wood bench. Existing metal duct to remain. Contractor to coordinate the limits of the removal so that the demo contractor will not come in contact with ACM to during removal of existing hardwood floor



SECOND FLOOR PLAN

GENERAL ABATEMENT NOTE:
Mechanical systems piping shown on plans are a schematic representation of the general layout of lines. Not all piping and associated mechanical equipment are shown on plan. Contractor is responsible for all quantities for the abatement.

DRWN BY: MSM	ORIGINAL: May 17, 2018
CHKD BY: MSM	REVISIONS:
APPR BY: GME	1
NOTES:	2
	3
	SCALE 1/8" = 1'

F&ME CONSULTANTS
GEOTECHNICAL - ENVIRONMENTAL - MATERIALS
3112 Devine Street
COLUMBIA, SC 29205

ASBESTOS CONTAINING MATERIALS ABATEMENT
Taylor House - Basement
1505 Senate Street Columbia, SC
ASBESTOS ABATEMENT PLAN
Prepared for:
Facilities Planning and Construction
1300 Pickens Street
Columbia, SC 29201

F&ME CONSULTANTS
PROJECT NUMBER:
E5700.250

FIGURE NUMBER:
AB-1

**ASBESTOS ABATEMENT PROJECT DESIGN
TAYLOR HOUSE PHASE II RENOVATIONS**

**1501 Senate Street
Columbia, South Carolina 29201**

Prepared For:



**UNIVERSITY OF
SOUTH CAROLINA**

The University of South Carolina

**1300 Pickens Street
Columbia, South Carolina 29208**

Prepared By:

**F&ME Consultants
1825 Blanding St.
Columbia, South Carolina 29205
(803) 254-4540**

Asbestos Project Designer

A handwritten signature in blue ink, appearing to read "Glynn M. Ellen".

**Glynn M. Ellen
Consultant Project Design SCDHEC License No: PD-00098
Expiration Date 06/09/18**

F&ME Project No: E5700.25

SECTION 02080 - ASBESTOS ABATEMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, the Asbestos Containing Materials (ACM) Investigation report prepared by F&ME Consultants dated July 19, 2013, ACM Investigation Letter Report Update, subsequent analytical data, and abatement design drawings AB1 through AB3. (see appendix).

1.2 ASBESTOS ABATEMENT CONTRACTOR QUALIFICATIONS

A. Asbestos Abatement Contractor's Qualifications

- 1. A qualified firm that has not less than five (5) years experience in the removal and proper disposal of asbestos-containing materials (ACM).
- 2. A qualified firm that has successfully completed the asbestos abatement on a minimum of three (3) projects over a period of five (5) years and where the scope of asbestos abatement work was over \$75,000.00.

1.3 SCOPE OF WORK – SUMMARY

- A. The overall project scope includes a complete friable clean-up of ACM contamination throughout the basement areas of the building and will include abatement of all ACM associated with mechanical systems in the basement.
- B. The scope of work for the asbestos abatement generally includes the acceptable removal and proper disposal of ACM and ACM contaminated items stored in the basement and clean-up of ACM contamination from the surface of various building components within the basement of the structure as indicated on the provided drawings and referenced herein. The abatement work (Work) will include removal of ACM listed herein.
- C. Prior to commencement of abatement activities, Contractor shall submit required documents as outlined herein.
- D. Contractor shall remove ACM utilizing work practices outlined by the USOSHA's, USEPA's and the SCDHEC's regulations.
- E. In the event of a fiber release (airborne or amended water), Contractor will follow procedures as outlined herein.
- F. Quantities referred to in the ACM Investigation report prepared by F&ME Consultants (see appendix) is for informational purposes only and not for bidding estimates. The Contractor shall be responsible for verification of all site conditions and quantities associated with the abatement prior to the bid.

- G. Contractor shall base abatement bid on the following ACM quantities. Bid shall include all materials and labor necessary to remove, handle, transport and dispose of ACM associated with the subject structure and complete the abatement operations and selective demolition necessary to access ACM to be removed from the basement areas. Materials and quantities to be abated shall include the following:

3. ACM Quantities

- a. Friable clean-up of various surfaces and building components throughout the basement.
 - i. 13,500 SF
- b. TSI Pipe insulation on mechanical systems piping.
 - i. 850 LF
- c. TSI Mudded Fittings associated with mechanical systems piping.
 - i. 140 Fittings
- d. ACM Contaminated HVAC Duct work
 - i. 275 LF
- e. TSI Tank Jacketing
 - i. 10 SF
- f. Boiler and associated mudding compound
 - i. 180 SF
- g. HVAC Duct wrap/tape
 - i. 15 SF

- H. All materials and procedures described herein shall be implemented by the Contractor unless specifically noted otherwise.

1.4 SCOPE OF WORK – ABATEMENT ACTIVITIES

- A. The following is a summary of the scope of abatement activities required during the abatement operations. More detailed information regarding materials, execution, etc. are provided in other sections herein and as shown on abatement drawings AB-1 through AB-7.

BASEMENT ABATEMENT ACTIVITIES

1. Friable Clean-up of Various Surfaces

During the investigation of the building, the basement area was deemed contaminated from residual and damaged ACM thermal systems insulation (TSI) on various mechanical lines in the space. All areas noted within the limits of the abatement in the basement will require a full friable clean-up. All vertical and horizontal surfaces, to include mechanical systems equipment, associated piping and ductwork, as well as materials stored in the basement are to be cleaned of ACM contamination. All TSI on mechanical systems piping and fittings, both ACM and Non-ACM, throughout the basement are to be removed, handled and disposed of as ACM or as ACM contaminated materials. All materials, equipment and debris generated during the friable

abatement activities in the basement shall be removed, handled and disposed of properly as ACM.

2. Thermal Systems Insulation on Mechanical Systems Piping

All TSI on mechanical systems piping, both ACM and Non-ACM found throughout the basement area is to be removed handled and disposed of as ACM. Contractor shall be allowed to remove and dispose of existing mechanical lines along with the ACM pipe insulation. All piping left in place for removal after the abatement is complete shall be inspected and cleaned of residual ACM to the satisfaction of the Owners Representative.

3. TSI - Mudded Fitting on Elbows and Joints on Mechanical Systems Piping

All mudded fittings through the basement on mechanical systems piping, both ACM and Non-ACM, found throughout the basement area is to be removed handled and disposed of as ACM. Contractor shall be allowed to remove and dispose of existing piping along with the ACM mudded elbows and joints. If piping left in place for removal after the abatement is complete Contractor shall inspect and clean all fittings of residual ACM to the satisfaction of the Owners Representative.

4. TSI Jacketing on Pressure Tank

All TSI jacketing on mechanical systems, both ACM and Non-ACM, found throughout the basement area is to be removed handled and disposed of as ACM. Contractor shall be allowed to remove and dispose of existing mechanical components along with the ACM. All equipment left in place for removal after the abatement is complete shall be inspected and cleaned of residual ACM to the satisfaction of the Owners Representative.

5. Mudding Compound associated with Boiler

A mudding compound was found throughout the interior of the abandoned boiler unit found in the basement. Contractor is to remove, handle and dispose of the entire boiler unit as ACM. Contractor shall have the option of dismantling the unit to gain access to the mudding compound and dispose of the boiler unit as non-ACM so long as all ACM mudding compound is removed to the satisfaction of the Owners Representative.

6. HVAC Duct wrap/tape

ACM Duct wrap and associated ACM tape were found in a wood bench found on the second floor of the building. Contractor shall remove duct wrap insulation and tape from existing metal duct and leave the metal duct work intact for reuse. Contractor shall coordinate the limits of the removal with the Owner and/ or the Owner's Representative to accommodate the planned removal of existing hardwood floors in this area. Contractor shall remove duct wrap and associated tape so that workers will not encounter ACM during flooring removal activities. Contractor is to remove, handle and dispose of all debris generated as ACM. If any ACM is to remain Contractor may need to build an enclosure over the area or openings seal off ACM to remain.

1.5 CONTRACTOR'S DUTIES – SUMMARY

A. The Contractor is to provide and pay for the following, except as specifically noted:

1. Labor, material, tools, required equipment (i.e. scaffolding, etc.) and machinery to perform Work.
 2. Other facilities and services necessary for proper execution and completion of Work.
 3. Pay legally required sales, consumer and use taxes.
- B. Contractor will absorb costs for the following:
1. Permits
 2. Government fees
 3. Licenses
- C. Contractor shall provide notifications to appropriate entities based on applicable regulations.
- D. Contractor shall comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of Work.
- E. Contractor shall enforce strict discipline and good order among employees. Do not employ on Work, on Project or Work Site:
1. Unfit persons.
 2. Persons not skilled in assigned task.

1.6 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

Pub #4545 (1994) OSHA Analytical Methods Manual

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2 (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems

ANSI Z87.1 (1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection

ANSI Z88.2 (1992) Respiratory Protection

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E 1368 (1990) Visual Inspection of Asbestos Abatement Projects

CODE OF FEDERAL REGULATIONS (CFR)

CFR 29 Part 1910 Occupational Safety and Health Standards

CFR 29 Part 1926 Safety and Health Regulations for Construction

CFR 40 Part 61 National Emission Standards for Hazardous Air Pollutants

CFR 40 Part 763 Asbestos

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

R 61-86.1 (2011) Standards of Performance for Asbestos Projects

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90-018 (1990) Asbestos/NESHAP Regulated Asbestos Containing Materials
Guidance

EPA 340/1-90-019 (1990) Asbestos/NESHAP Adequately Wet Guidance

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 84-100 (1984; Supple 1985, 1987, 1988 & 1990)

NIOSH Manual of Analytical Methods

UNDERWRITERS LABORATORIES (UL)

UL 586 (1990) High-Efficiency, Particulate, Air Filter Units

1.7 DEFINITIONS

A. Adequately Wet

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-019 that means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

B. Aggressive Method

1. Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact ACM.

C. Amended Water

1. Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.

D. Asbestos

1. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

E. Asbestos-Containing Construction Material (OSHA)

1. Any manufactured construction material that contains more than one tenth of one percent asbestos by weight.

F. Asbestos-Containing Material (ACM)

1. Any material containing more than one percent asbestos

G. Asbestos Regulated Work Area

An asbestos regulated work area is an area established by the Contractor to demarcate areas where Class I, II and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

H. Authorized Person

1. Any person certified and authorized by the Contractor, Owners Representative and/or Owner and required by work duties to be present in regulated areas.

I. Category I Non-friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy.

J. Category II Non-friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material, excluding Category I Non-friable ACM, containing more than 1 percent asbestos as determined using the methods specified in Appendix A, Subpart F, CFR 40 Part 763, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

K. Class I Asbestos Work

1. Activities that involve the removal of thermal system insulation (TSI) and surfacing ACM.

L. Class II Asbestos Work

1. Abatement activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.

M. Competent Person

1. In addition to the definition in CFR 29 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate them.

N. Critical Barrier

1. One or more layers of 6-mil plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

O. Disturbance

1. Contact, which releases fibers from ACM or debris containing ACM. This term includes activities that disrupt the matrix of ACM, render ACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

P. Friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Q. Intact

1. ACM which has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.

R. Negative Initial Exposure Assessment

1. A demonstration by the Contractor that employee exposure during an operation is expected to be consistently below the PELs (TWA and Excursion Limit).

S. Non-friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

T. Time-Weighted Average (TWA)

1. The TWA is an 8-hour time weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air which represents the employee's 8-hour workday as determined by Appendix A of CFR 29 Part 1926, Section 1926.58.

1.8 DESCRIPTION OF WORK

- A. The work covered by this section includes the requirements for the removal, transportation, disposal, storage, containment of, and housekeeping activities involving asbestos containing materials and asbestos contaminated materials located within the building identified within these specifications associated with the Former Pine Tree Elementary School located in Camden, South Carolina. CFR 40 Part 763 and R 61-86.1 govern this abatement work.

1.9 SECURITY

- A. Security shall be provided for each asbestos regulated work area. A logbook shall be kept documenting entry into and out of the asbestos regulated work area. Entry into asbestos regulated work areas shall only be by personnel authorized by the Abatement Contractor, Owners Representative and Owner. Personnel authorized to enter asbestos regulated work areas shall be trained, medically evaluated and wear the personal protective equipment, as required by this specification, for the specific asbestos regulated work area to be entered.

1.10 MEDICAL REQUIREMENTS

- A. Medical requirements shall conform to CFR 29 Part 1926, Section 1926.58.

1. Medical Examinations

- a. The Contractor shall provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour time weighted average. In the absence of specific airborne fiber data provide medical examination for all workers who will enter the work area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926.1101(m) and, in addition, provide an evaluation of the individuals' ability to work in environments capable of producing heat stress in the worker.

2. Medical and Exposure Records

- a. The Contractor shall maintain complete and accurate records of employees' medical examinations for a period of 30 years after termination of employment as required by 29 CFR 1926.1101(n) and make records of the required medical examinations available for inspection and copying to: The Assistant Secretary for Occupational Safety and Health, The Director of The National Institute for Occupational Safety and Health (NIOSH), authorized representatives of either of them, and an employee's physician upon the request of the employee or former employee.

1.11 TRAINING

- A. All Contractor personnel involved with asbestos work must be trained and tested prior to any work, and shall be thoroughly familiar with the Contractor's standard operating procedure for the abatement work. All personnel shall undergo the specific medical examinations required by OSHA. The superintendent and the foreman shall be thoroughly familiar with all applicable regulations and practices for asbestos work and shall have participated in at least two abatement projects of similar size and scope within the past two years. All personnel shall be in possession of valid respirator fit test Paperwork.

1.12 RESPIRATORY PROTECTION PROGRAM

- A. The Contractor shall establish in writing, and implement a respiratory protection program in accordance with CFR 29 Part 1926, Section 1926.58, CFR 29 Part 1910, Section 1910.134, ANSI Z88.2, CGA G-7 and CGA G-7.1. The Contractor shall establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations encountered during the performance of the asbestos abatement work. The Contractor's respiratory protection program shall include, but not be limited to, the following elements:

1. The company policy, used for the assignment of individual responsibility, accountability, and implementation of the respiratory protection program.
2. The standard operating procedures covering the selection and use of respirators. Respiratory selection shall be determined by the hazard to which the worker is exposed.
3. Medical evaluation of each user to verify that the worker may be assigned to an activity where respiratory protection is required.
4. Training in the proper use and limitations of respirators.
5. Respirator fit testing (i.e., quantitative, qualitative and individual functional fit checks).
6. Regular cleaning and disinfection of respirators.
7. Routine inspection of respirators during cleaning and after each use when designated for emergency use.
8. Storage of respirators in convenient, clean, and sanitary locations.
9. Surveillance of work area conditions and degree of employee exposure (e.g., through air monitoring).
10. Regular evaluation of the continued effectiveness of the respiratory protection program.
11. Recognition and procedures for the resolution of special problems as they affect respirator use (e.g., no facial hair that comes between the respirator face piece and face or interferes with valve function; prescription eyewear usage; prohibition of wearing contact lenses; etc.).
12. Proper training in putting on and removing respirators.

1.13 HAZARD COMMUNICATION PROGRAM

- A. A hazard communication program shall be established and implemented in accordance with CFR 29 Part 1926, Section 1926.59.

1.14 SAFETY AND HEALTH COMPLIANCE

- A. In addition to detailed requirements of this specification, the work shall comply with applicable laws, ordinances, criteria, rules, and regulations of Federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials and with the applicable requirements of CFR 29 Part 1910, CFR 29 Part 1926, CFR 40 Part 61, Subpart A, and CFR 40 Part 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 101. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Owner shall apply.

1.15 COMPETENT PERSON

- A. When the contractor has employees engaged in Class I or II asbestos work, he shall have a Competent Person performing or supervising the following duties, as applicable:
1. Set up the regulated area, enclosure, or other containment;
 2. Ensure (by on-site inspection) the integrity of the enclosure or containment;
 3. Set up procedures to control entry to and exit from the enclosure and/or area;
 4. Supervise all employee exposure monitoring and ensure that it is conducted as required;
 5. Ensure that employees working within the enclosure and/or using glove bags wear protective clothing and respirators as required.
 6. Ensure through on-site supervision that employees set up and remove engineering controls, use work practices and personal protective equipment in compliance within all requirements;
 7. Ensure that employees use the hygiene facilities and observe the decontamination procedures specified;
 8. Ensure through on-site inspections that engineering controls are functioning properly and employees are using proper work practices; and,
 9. Ensure notification of other employees on site.

1.16 PERMITS, LICENSES AND NOTIFICATIONS

- A. The Contractor shall obtain all necessary permits and licenses in conjunction with the project asbestos abatement, transportation and disposal actions and timely notification furnished of such actions required by Federal, state, regional, and local authorities and as otherwise specified herein.
- B. The Contractor shall notify the SCDHEC and the Owner in writing at least 10 days prior to the commencement of work in accordance with CFR 40 Part 61, Subpart M, state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents. Notification shall be by Certified Mail - Return Receipt Requested. The Contractor shall furnish copies of the receipts to the Owner prior to the commencement of work.
- C. The Contractor shall notify the Owner if any of the following occur:
1. If the Contractor or any of its subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this Contract.
 2. Proceedings are commenced which could lead to revocation of related permits or licenses.
 3. Permits, licenses or other Owner authorizations relating to this Contract are revoked.
 4. Litigation is commenced which would affect this Contract.

5. If the Contractor or any of its Subcontractors become aware that its equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.17 SUBMITTALS

A. The following shall be submitted to the Owner and/or the Owner's Representative **at least 10 days prior to the start of abatement operations:**

1. Manufacturer's catalog data
 - a. Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information.
2. Asbestos Abatement Work Plan
 - a. A written Asbestos Abatement Work Plan outlining the project sequencing, methods, etc. must be accepted in writing by the Owners' Representative prior to start of any site work.
3. Employee Training and Certification of Worker Acknowledgement
 - a. Contractor shall submit the following training documentation for each employee to be engaged in the abatement work
 - i. Copy of certification of accreditation for completion of "workers" course (for workers) or "Contractor/Supervisor" Course (for Contractors and onsite supervisory staff) meeting the requirements of EPA's CFR 40 Part 763 or more stringent state criteria, and all subsequent annual refresher training certificates meeting same requirements.
 - ii. A copy of a Contractor generated form entitled Certificate of Workers Acknowledgment shall be completed for each employee.
4. Notifications
 - a. The Owner shall be notified in writing 10 days prior to the start of asbestos work. A copy of the written notification shall be provided to any rental company concerning the intended use of rental equipment and the possibility of asbestos contamination, the decontamination procedures that will be used prior to the return of the equipment. A copy of the rental company's written acknowledgment and agreement shall be included in the submittal.
5. Certificates
 - a. Vacuum, Filtration and Ventilation Equipment
 - b. Manufacturer's certifications showing compliance with ANSI Z9.2 for:
 - i. Vacuums
 - ii. Water filtration equipment
 - iii. Ventilation equipment
 - iv. Other equipment required for containing airborne asbestos fibers.

B. The following shall be submitted to the Owner and/or the Owner’s Representative during or following abatement operations:

1. Initial Exposure Assessment

- a. The Contractor shall ensure that a “competent person” conducts an initial exposure assessment immediately before or at the initiation of all operations to determine expected exposures. The assessment must be based on the competent person’s review of all aspects of the Contractor’s performance doing similar jobs. Only if similar controls are used and the work supervised by the same or similarly trained personnel, may past data be relied on. The assessment shall include consideration of all observations, information or calculations that indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor that indicate the levels of airborne asbestos likely to be encountered on the job. However, the assessment may conclude that exposures are likely to be consistently below the PELs only as a conclusion of a “negative exposure assessment”. The Contractor shall monitor employees at the beginning of the project. The exposure assessment shall be updated to reflect actual conditions based on the results of exposure monitoring.

2. Encapsulant

- a. A certificate stating that encapsulant meets the applicable specified performance requirements.

3. Negative Exposure Assessment

- a. Using a Negative Exposure Assessment, the Contractor may demonstrate that employee exposures will be below the PELs by data, which conform to the following criteria:
 - i. Objective data demonstrating that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the TWA and excursion limit under those work conditions having the greatest potential for releasing asbestos; or
 - ii. Where the Contractor has monitored prior asbestos jobs for the PEL and the excursion limit within 12 months of the current or projected job, the monitoring and analysis were performed in compliance with CFR 29 Part 1926.1101; and the data were obtained during work operations conducted under workplace conditions “closely resembling” the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor’s current operations, the operations were conducted by employees whose training and experience were no more extensive than that of employees performing the current job, and these data show that under the conditions prevailing and which will prevail in the current workplace there is a high degree of certainty that employee exposures will not exceed the TWA and excursion limit; or
 - iii. The results of initial exposure monitoring of the current job made from breathing zone samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee covering the operations that are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

4. Field Tests

- a. Air sampling reports.
- b. Pressure differential recording local exhaust system.
- c. Asbestos disposal waste disposal record report.

5. Air Sampling Results
 - a. Area Air Sampling (supplied by the Owner) and Personnel Air Sampling (provided by the Contractor)
 - i. Air sample fiber counting shall be completed and results provided within 24 hours after completion of a sampling period. The Owner shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The air sampling results shall be documented on a daily air-monitoring log.
6. Pressure Differential Recordings
 - a. Pressure differential recordings shall be provided daily on the same day collected. The Contractor's competent person shall review the readings prior to being submitted. The Owner shall be notified immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.005 fiber per cubic centimeter (f/cc) or background, whichever is higher.
7. Records
 - a. Asbestos Waste Shipment
 - i. Final completed copies of the Waste Shipment Record for all shipments of waste material as specified in CFR 40 Part 61, Subpart M and other required state waste manifest shipment records as specified herein. Detailed information of all asbestos waste disposals on the "MANDATORY WASTE SHIPMENT RECORD" form in accordance with revised CFR 40 Part 61, Subpart M. Such completed forms signed and dated by the agent of the landfill shall be submitted within 3 days after date of delivery of ACM to the landfill.

1.18 PERSONAL PROTECTIVE EQUIPMENT

A. Respirators

1. Respiratory protection shall be worn by all individuals inside the work area from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring:

B. Respirator Selection

1. Where respirators are used, the Contractor shall select and provide, at no cost to the employee, the appropriate respirator, and shall ensure that the employee uses the respirator provided.
2. The Contractor shall select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR 11.
3. The Contractor shall provide a tight fitting powered, air-purifying respirator in lieu of any negative-pressure respirator specified whenever:
 - a. An employee chooses to use this type of respirator, and
 - b. This respirator will provide adequate protection to the employee.

C. Respirator Program

1. Where respiratory protection is used, the Contractor shall institute a respirator program in accordance with CFR 29 Part 1910.134. The Contractor shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.
2. Employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator face pieces whenever necessary to prevent skin irritation associated with respirator use.

D. Respirator Fit Testing:

1. The Contractor shall ensure that the respirator issued to the employee exhibits the least possible face piece leakage and that the respirator is fitted properly. The Contractor shall perform either quantitative or qualitative face fit tests at the time of initial fitting and at least every 6 months thereafter for each employee wearing a negative-pressure respirator. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn or of full-face piece air purifying respirators where they are worn at levels at which half-face piece air purifying respirators are permitted. A qualitative or quantitative fit test conforming to CFR 29 Part 1926, Appendix C shall be conducted by the Contractor for each Contractor worker required to wear a respirator, and for the Owner and authorized visitors who enter an asbestos regulated work area where respirators are required to be worn.

E. Whole Body Protection

1. Personnel exposed to asbestos shall be provided with whole body protection, as specified herein and such protection shall be worn properly. The Contractor and competent person supervisor shall select and approve the whole body protection to be used. The competent person shall examine work suits worn by employees at least once per work shift for rips or tears that may occur during performance of work. When rips or tears are detected while an employee is working, rips and tears shall be immediately mended, or the work suit shall be immediately replaced. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area or be properly laundered in accordance with CFR 29 Part 1926 and as specified in the Contractor's Asbestos Hazard Abatement Plan. A worker shall not remove asbestos abatement whole body protection from the work site to be cleaned.
2. Disposable-impermeable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.
3. Gloves shall be provided to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) an appropriate glove shall be provided and used.
4. An additional coverall similar to that required in paragraph Coveralls shall be provided when the abatement and control method employed does not provide for the exit from the asbestos regulated work area directly into an attached decontamination unit. Cloth work clothes shall be provided for wear under the protective coverall and foot coverings when work is being conducted in low temperature conditions. Cloth work clothes shall be either disposed of as asbestos contaminated

material or properly laundered in accordance with CFR 29 Part 1926 and as specified in the Contractor's Asbestos Hazard Abatement Plan.

5. Cloth socks shall be provided and worn next to the skin. If rubber boots are not used, footwear and disposable foot coverings shall be provided. Rubber boots shall be used in moist or wet areas. Only rubber boots shall be removed from the asbestos regulated work area after being thoroughly decontaminated. All other protective foot covering shall be disposed of as ACM.
6. Hood type disposable head covering shall be provided. In addition, protective headgear (hard hats) shall be provided as required. Hard hats shall only be removed from the asbestos regulated work area after being thoroughly decontaminated.
7. Contact lenses shall not be worn in asbestos regulated work areas. When vision correction is necessary to perform the work task, prescription safety eyewear shall be used. Personnel engaged in asbestos abatement activities in the asbestos regulated work area shall wear fog-proof goggles when the use of a full face-piece respirator is not required. Eye protection provided shall be in accordance with ANSI Z87.1.
8. All other items of whole body protection shall be provided as required and approved by the Contractor.

1.19 DECONTAMINATION AND LOAD OUT UNITS

- A. Decontamination and load out units shall be sized, constructed and located so as to not impede the access to ACM to be abated. If access to ACM above the decontamination and load out units require abatement personnel to utilize them to gain access (i.e. get on top of the units) to the ACM, they shall be constructed meeting all OSHA safety guidelines.
- B. Provide each work area with separate personnel decontamination unit and equipment load out unit. Ensure that the decontamination unit is the only means of ingress and egress for the work area and that all equipment, bagged waste material and other material exit the work area only through the decontamination unit and equipment load out unit.
- C. All persons entering and exiting the work area will follow the entry and exit procedures required by the applicable regulations and these specifications. Process all equipment and material exiting the work area through the decontamination unit and equipment load out unit and decontaminate as required by the specifications.
- D. Construct walls and ceilings of decontamination unit and equipment load out unit airtight with at least 6 mil polyethylene sheeting and attach to existing building components or to a temporary framework. The decontamination unit and equipment load out unit may be combined if the size of the work area will not permit both.
- E. Use a minimum of two layers of 6-mil opaque polyethylene to cover floor under decontamination unit. Construct doors from overlapping polyethylene sheets so that they overlap adjacent surfaces. Weight sheets at bottom so that they quickly close after release. Put arrows on sheets showing direction of overlap and travel.
- F. Provide temporary water service connection to the decontamination unit and equipment load out unit. Provide backflow protection at the point of connection to the Owner's system.

- G. Water supply must be properly pressured and temperature balanced at shower discharge.
- H. Provide adequate temporary electric power with ground fault protection and overhead wiring throughout the decontamination unit and equipment load out unit. Provide a sub-panel for all temporary power in changing room.
- I. Provide a decontamination unit consisting of serial arrangement of clean room, showers room and equipment room. Provide adequately sized decontamination unit to accommodate the number of employees scheduled for the project. The center chamber of the three chamber decontamination unit will be fitted with as many portable walk through shower stalls as necessary so that all employees will be able to go through the entire decontamination procedure within 15 minutes. Construct decontamination unit of opaque or colored polyethylene for privacy. Construct decontamination unit so that it will not allow for parallel routes of exit without showering

1.20 WARNING SIGNS AND TAPE

- A. Contractor shall ensure that all personnel understand the warning signs. Warning signs and tape printed in English and Spanish shall be provided at the regulated boundaries and entrances to asbestos regulated work areas. Signs shall be located at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Warning signs shall be in vertical format conforming to CFR 29 Part 1910, and CFR 29 Part 1926

1.21 WARNING LABELS

- A. Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements specified herein are acceptable. Warning labels shall conform to CFR 29 Part 1926 and shall be of sufficient size to be clearly legible displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE
HAZARD

1.22 LOCAL EXHAUST SYSTEM

- A. A local exhaust system shall be provided in the asbestos regulated work area in accordance with ANSI Z9.2 and CFR 29 Part 1926. The system will provide at least 4 air changes per hour inside of the containment. The local exhaust system shall be operated 24 hours per day, until the asbestos regulated containment area is removed and shall be leak proof to the filter and equipped with HEPA filters. Local exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.51 mm (0.02 inch) 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential shall be monitored continuously, 24 hours per day, with an automatic recording instrument. In no case shall the building ventilation system be used as the local exhaust system for the asbestos regulated work area. Filters on local exhaust system

equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled. The local exhaust system shall terminate out of doors. All filters used shall be new at the beginning of the project and shall be periodically changed as necessary and disposed of as ACM waste.

- B. Prior to the start of the abatement the Contractor shall inspect all negative air machines and insure that all gaskets are in place, that all HEPA filters in the units are properly seated and mechanical brackets that secure the HEPA filters are intact. This inspection will be conducted in conjunction with the Owners Representative prior to the start of abatement activities. All deficiencies associated with the negative air machines shall be repaired prior to the start of the abatement. All defective units shall be removed and replaced.

1.23 TOOLS

- A. Vacuums shall be leak proof to the filter, equipped with HEPA filters, be of sufficient capacity and provide the necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system or has otherwise been approved for use by the Owner. All residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from asbestos regulated work areas.

1.24 RENTAL EQUIPMENT

- A. If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.25 PERSONNEL AIR MONITORING EQUIPMENT (CONTRACTOR PROVIDED)

- A. The Contractor is responsible for all personnel sampling as outlined in Section 3.12 herein, and shall select and approve the air monitoring equipment to be provided and used by the Contractor for evaluation of personnel exposure levels to airborne asbestos fiber concentrations within the work area.

1.26 MATERIAL SAFETY DATA SHEETS

- A. Material safety data sheets (MSDS) shall be provided for all hazardous materials brought onto the work-site. One copy shall be provided to the Owner's onsite Representative and one copy shall be included in the Contractor's Hazard Communication Program.

1.27 OTHER ITEMS

- A. A sufficient quantity of other items shall be provided that may include, but not be limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of asbestos regulated containment work areas, UL approved temporary electrical equipment, material and chords, ground fault

circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc.

PART 2 - PRODUCTS

2.1 ENCAPSULANTS

- A. Encapsulant shall conform to USEPA requirements, shall contain no toxic or hazardous substances.

PART 3 - EXECUTION

3.1 GENERAL

- A. Asbestos abatement work shown on plans and drawings shall be performed as specified herein. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos regulated work area. All hot work (burning, cutting, welding, etc.) shall be conducted under strictly controlled conditions in conformance with CFR 29 Part 1926. Personnel of other trades not engaged in asbestos abatement activities shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions as required by the Contractors Asbestos Abatement Plan are complied with. The building heating, ventilating, and air conditioning system shall be shut down, all openings to the system capped leading into the abatement work area.
- B. Electrical service shall be disconnected where necessary to facilitate wet removal. Temporary electrical service shall be provided by the Contractor as needed. Temporary power provided by the Contractor shall be adequate to power for the Owners' Representatives' air monitoring equipment.
- C. If an asbestos spill occurs outside of the asbestos regulated work area, work shall be stopped and the Owners' Representative and Owner shall be notified. The condition shall be corrected to the satisfaction of the Owners' Representative and Owner including air sampling, prior to resumption of work.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

- A. Asbestos abatement work shall be performed without damage or contamination of adjacent work or areas. Where such work or area is damaged or contaminated as verified by the Owners Representative using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Owner as deemed appropriate by the Owners Representative. This includes inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, work shall stop in all affected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated by the Contractor and the Owners Representative, work may proceed.

3.3 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

- A. Any building ventilating system supplying air into or returning air out of an asbestos regulated work area shall be shut down and isolated by lockable switch or other positive means in accordance with CFR 29 Part 1910, Section 1910.147, to prevent accidental start-up and isolated by airtight seals to prevent contaminant spread through the system. Air-tight critical barriers shall be installed on all building ventilating openings that supply, or return air from the building ventilation system or serves to exhaust air from the building, that are located inside the asbestos regulated work area. The critical barriers shall consist of air-tight rigid covers for building ventilation supply and exhaust grills where the ventilation system is required to remain in service during abatement. Edges to wall, ceiling and floor surfaces shall be sealed with industrial grade duct tape.

3.4 PRECLEANING

- A. Surfaces shall be cleaned by HEPA vacuum and adequately wet wiped prior to establishment of containment.

3.5 ASBESTOS CONTROL AREA REQUIREMENTS

- A. Regulated containment areas shall be established and maintained for each abatement work task. Viewing inspection window shall be installed on the wall of the containment enclosure, as specified herein. The following procedures shall be performed sequentially and each activity shall be completed before proceeding to the next. Various steps may be omitted for an individual containment area when that work is not specified on the drawings.
 1. Furnishings in the asbestos regulated work area shall be cleaned, protected in place removed as specified herein.
 2. Tools, scaffolding, staging, and incidentals necessary for the work shall be placed in the area to be isolated prior to erection of work area enclosed containment.
 3. Building ventilating systems serving the work area shall be shutdown or isolated.
 4. Power to the asbestos regulated work area shall be locked-out by switching off all breakers serving power or lighting to this area in accordance with CFR 29 Part 1910.
 5. Surfaces shall be pre-cleaned as required herein.
 6. Personnel Decontamination Unit shall be installed as specified. Load-Out unit shall be installed as specified herein.
 7. Critical barriers shall be installed as required for building ventilation system and in the plenum space as required herein.
 8. Local exhaust ventilation system shall be installed as specified.
 9. Containment area shall be installed as required for each abatement task as specified.

3.6 CLEAN-UP

- A. The Contractor shall maintain a clean work area by performing on a daily basis the following housekeeping functions at the end of each shift:
 - 1. Loose ACM shall be prepared for disposal by packaging the waste and removing it from the work area to the load-out area.
 - 2. Work area shall be HEPA vacuumed.
 - 3. Polyethylene in work and high traffic areas shall be inspected and repaired.
 - 4. Containment area shall be wet wiped if air sample results exceed prescribed level.

3.7 ASBESTOS HANDLING PROCEDURES

- A. The Contractor shall employ proper handling procedures in accordance with CFR 29 Part 1926 and CFR 40 Part 61, Subpart M and the specification requirements herein. The specific abatement techniques and items identified shall be detailed in the Contractor's Asbestos Hazard Abatement Plan including but not limited to details of construction materials, equipment, and handling procedures. The following task descriptions detail the required abatement handling technique.
 - 1. Removal of ACM From Interior Architectural System
 - a. After completion of all asbestos removal work, surfaces from which asbestos-containing materials have been removed shall be wet wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue. After the gross amounts of asbestos have been removed from every surface, all remaining visible accumulations of asbestos on floors shall be collected using plastic shovels, rubber squeegees, rubber dustpans and HEPA vacuum cleaners as appropriate to maintain the integrity of the containment barrier. When all ACM has been removed, workers shall use HEPA vacuum cleaners to vacuum every surface. Particular attention shall be paid to those surfaces or locations that could harbor accumulations or residual asbestos dust.
 - 2. Sealing Contaminated Items Designated for Disposal
 - a. Contaminated architectural, mechanical, and electrical appurtenances and other contaminated items designated for removal shall be coated with an asbestos lockdown encapsulant at the demolition site before being removed from the asbestos control area. These items need to be vacuumed prior to application of the lock-down encapsulant.
 - b. The asbestos lockdown encapsulant shall be tinted a contrasting color. It shall be spray applied by airless method. Thoroughness of sealing operation shall be visually gauged by the extent of colored coating on exposed surfaces.

3.8 FINAL CLEANING AND PRE-VISUAL INSPECTION

- A. The asbestos regulated work area shall be cleaned at the completion of the abatement by collecting, packing, and storing all gross contamination. A final cleaning shall include HEPA vacuum and wet cleaning of all exposed surfaces and equipment in the asbestos regulated work area. Upon completion of the cleaning, the Contractor's competent person shall conduct a pre-visual inspection of the cleaned area in

preparation for the final inspection to be conducted with the Owners Representative. The Contractor shall re-clean, as necessary. Upon completion of the final cleaning, the Contractor and the Owners Representative shall conduct a final visual inspection of the cleaned work area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection. If the Owners Representative rejects the abatement area as not meeting final cleaning requirements, the Contractor shall re-clean as necessary and have a follow-up inspection with the Owners Representative. Re-cleaning and follow-up re-inspections by the Owners Representative shall be at the Contractor's expense.

3.9 LOCKDOWN

- A. Prior to removal of plastic barriers and after clean up of gross contamination and final visual inspection, a post removal (lockdown) encapsulant shall then be spray applied to foundation walls, underside of floors, and all vertical and horizontal surfaces within the work area. The abatement area shall include but not be limited to constructed enclosures, barriers, polyethylene sheeting that covers any furnishings, and equipment articles to be discarded, critical barriers, air locks, load out units for bag removal, and onsite constructed decontamination unit.

3.10 AIR MONITORING

A. Air Monitoring by the Contractor

1. The Contractor shall provide daily 8-hour TWA PEL and daily 30-minute Excursion Limit personal breathing zone air monitoring in accordance with and in addition to 29 CFR 1926.1101(f), including all amendments, and Appendix A of the OSHA standard within the work sites throughout all asbestos work site enclosure, material stripping, removal, cleaning encapsulation operations, or any other activities which might disturb asbestos-containing materials to insure that the workers are adequately protected at all times.
2. Samples shall be collected by calibrated pumps whose flow rates can be determined to an accuracy of plus or minus 5 percent. Calibrate pumps both prior to and after each use with a representative filter in line.
3. Analysis of samples shall be done in accordance with 29 CFR 1926.1101(f) and Appendix A of the OSHA standard. The results of all samples shall be posted outside the containment area within 48 hours of sampling and maintained there until the project has been concluded. This data shall include both the results of individual samples and the results of 8 hour TWA and 30-minute Excursion Limit determinations. Posted results shall include a synopsis of work activities for which the results are representative. Records shall be made of each employee's personal monitoring results and the employee shall be notified of these results within 15 days either individually or by posting them in a central location in accordance with 29 CFR 1926.1101(f).
4. All analytical results from the Contractor's air monitoring shall be posted at the work site entrance as soon as they become available and not more than 48 hours from the time in which the samples were taken.

B. Air Monitoring by the Owner

1. The Owner shall provide the services of an independent testing laboratory with qualified analysts and appropriate equipment to conduct sample analyses of area air samples using the methods prescribed in CFR 29 Part 1926 Section 1926.58 to include NIOSH Pub No. 84-100 Method 7400. Sampling performed in accordance with CFR 29 Part 1926 Section 1926.58 shall be performed by the Owner's Representative. The Owner's Representative shall perform final clearance air sampling utilizing Phase Contract Microscopy (PCM) analysis. For environmental quality control and final air clearance NIOSH Pub No. 84-100 Method 7400 (PCM) with optional confirmation of results by NIOSH Pub No. 84-100 Method 7402 Transmission Electron Microscopy (TEM) the mandatory EPA TEM Method specified at CFR 40 Part 763 shall be used. For environmental and final clearance samples, sampling will be conducted at a sufficient velocity and time to collect a sample volume necessary to establish the limit of detection of the method used at 0.01 f/cc. Asbestos fiber concentration confirmation of the total fiber concentration results of environmental, quality assurance and final air clearance samples, collected and analyzed by NIOSH Pub No. 84-100 Method 7400, may be conducted.
 - a. Sampling Prior to Asbestos Work
 - i. The baseline air sampling shall be established one day prior to the masking and sealing operations for each abatement area site. The background shall be established by performing area sampling in similar but uncontaminated sites in the building. Pre-abatement (NIOSH Pub No. 84-100 Method 7400, PCM, and EPA TEM Method specified at CFR 40 Part 763) air samples shall be collected at a minimum of three locations. These locations are: outside the building, inside the building, but outside the abatement area perimeter and inside each abatement area. One sample shall be collected for every 185 square meters 2000 square feet of floor space. At least two sample locations shall be collected outside the building. The PCM samples shall be analyzed immediately; and if any result in fiber concentration greater than 0.01 f/cc, asbestos fiber concentration shall be confirmed using NIOSH Pub No. 84-100 Method 7402 (TEM) at Owner expense.
 - b. Sampling During Asbestos Abatement Work
 - i. The Owner shall provide area air sampling as indicated in CFR 29 Part 1926 Section 1926.58, and meet state and local requirements. Area air sampling shall be conducted at least once every shift, close to the work in the containment area, outside the clean room entrance to the containment area, (outside air lock for mini and modified containment areas), inside the clean room (inside the air lock for mini and modified containment areas), outside the load-out unit exit, if used, and at the exhaust discharge point of the local exhaust system.
 - c. Sampling After Final Clean-Up (Clearance Sampling)
 - i. Prior to conducting final air clearance sampling, the Contractor and the Owner's Representative shall conduct a final visual inspection of the Contractor's final cleanup of the abated asbestos regulated work area as specified. Final clearance air monitoring shall not begin until acceptance of this final cleaning by the Owner's Representative. The Owner's Representative will provide area sampling of airborne fibers using air sampling techniques as defined in the EPA 560/5-85-024 or as otherwise required by Federal or state requirements.
 - d. Air Clearance Failure
 - i. Should clearance-sampling results fail to meet the final clean-up requirements, the Contractor shall pay all costs associated with all required re-cleaning, re-sampling and analysis until final clean-up requirements are met.

3.11 SITE INSPECTION

- A. While performing asbestos removal work, the Contractor shall be subject to onsite inspection by the Owner's Representative. If the work is found to be in violation of this specification, the Owner or his representative will issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

3.12 CLEAN-UP AND DISPOSAL

- A. Housekeeping
 - 1. Surfaces of the regulated work area shall be kept free of accumulation of asbestos-containing debris. Meticulous attention shall be given to restricting the spread of dust and debris during the abatement activities. HEPA filtered vacuum cleaners shall be used. The space shall not be blown down with compressed air.
- B. Title to Materials
 - 1. Material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and Federal regulations and herein.
- C. Collection and Disposal of Asbestos
 - 1. Asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in sealed leak-tight, containers (e.g. double 6-mil plastic bags), sealed 6-mil double wrapped polyethylene sheet, sealed fiberboard boxes or other approved containers. Waste within the containers must be wetted in case the container is breached. A warning and Department of Transportation (DOT) label shall be affixed or preprinted on each bag. Waste asbestos material shall be disposed of at an EPA, state and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in asbestos waste load-out unit or in a storage/transportation conveyance (i.e.; dumpster, roll-off waste boxes, etc.) in a manner as accepted by and in an area as assigned by the Owner. Procedure for hauling and disposal shall comply with CFR 40 Part 61, Subpart M, and state, regional, and local standards.
- D. Asbestos Waste Shipment Record
 - 1. The Contractor shall complete and provide final completed copies of the Waste Shipment Record for all shipments of waste material as specified in CFR 40 Part 61, Subpart M and other required state waste manifest shipment records within 3 days of delivery to the landfill.

APPENDICES

Appendix A - ACM Investigation Report Update Letter (Dated May 17, 2018)

Appendix B – Follow-up Analytical Data

Appendix C – ACM Investigation Report (Dated July 9, 2013)

APPENDIX A

Asbestos Containing Materials (ACM) Investigation Report Update

Prepared by F&ME Consultants

Dated: May 17, 2017

May 17, 2018

Mr. Pete Fisher
Project Manager
University of South Carolina
1300 Pickens Street
Columbia, South Carolina 29201

Re: ACM Investigation – 2013 Report Update
USC - Taylor House
1505 Senate Street
Columbia, South Carolina 29201
F&ME Project No: E5700.250

Dear Mr. Fisher:

As requested, F&ME has prepared this update to the previous Asbestos Containing Materials (ACM) investigation report dated July 9, 2013, prepared by F&ME for the above referenced structure. F&ME's scope of work included reviewing the previous investigation report, conducting a site visit to the building to identify any changes that may have occurred since the previous investigation, the collection follow-up samples as needed, and to provide an update letter of findings in anticipation of planned renovations to the building. No renovations are anticipated in connection with the buildings roofing system or the exterior of the building. F&ME conducted the field component of the investigation on April 30th and May 7th, 2018.

Upon review of the 2013 investigation report, and review of the proposed renovation plans, the only ACM's that were found during the 2013 investigation that remain in the structure that will be impacted by the planned renovations are the following materials:

- TSI pipe insulation on mechanical systems piping
- TSI mudded fittings associated with mechanical systems piping
- Black mastic on fiberglass pipe insulation

All other materials identified during the previous investigation were abated during the demolition and abatement activities that were a component of the construction of the new Law School which included the demolition of the former east and west wings of the building, the installation of a new roofing system and restoration of the exterior windows. Other than these activities, no other work has occurred to the interior areas of the building since the 2013 investigation.

During the follow-up visits to the site, seven (7) additional suspect materials that were not previously identified during the 2013 investigation were identified. These materials that will be impacted by the current project are listed as follows:

- Linoleum flooring (2nd floor)
- Two (2) different wood flooring underfelts (Floors 1 through 3)
- Fiberboard (Kitchen)

- Wood flooring paper (3rd floor)
- Duct tape wrap (2nd floor)
- Mudding compound within the interior of the abandoned boiler

A total of twenty-one (21) additional samples were collected. A “*first positive stop*” protocol was implemented for this sampling. This protocol establishes that if the first sample of a material tested positive for asbestos content, subsequent samples were not to be analyzed, and would be considered positive as well. Therefore, due to multiple layers of some materials sampled, and the implementation of a “*first positive stop*” protocol, forty-three (21) samples were analyzed by PLM and seven (3) were TEM-confirmed. Laboratory analysis determined that **duct tape wrap (80% Chrysotile) and the mudding compound (3% Chrysotile) associated with the basement boiler are positive for asbestos.**

Therefore, this update confirms two (2) additional ACM materials within the interior of the building that will be impacted by the planned renovations. It should be noted that some materials may be found hidden in closed wall cavities in the building. Should any suspect materials be uncovered that are suspect the contractor should stop work and contact the Owner immediately.

Attached is a copy of the previous ACM Investigation report dated July 19, 2013 along with follow-up analytical data from samples collected during this investigation.

If you have any questions or need additional information, please do not hesitate to contact me directly at (803) 254-4540. We appreciate the opportunity to assist you on this project.

Sincerely,
F&ME CONSULTANTS



Glynn M. Ellen
Environmental Department Manager

Attachments:
PLM and TEM Analytical Reports
Chain of Custody
2013 Taylor House ACM Investigation Report

APPENDIX B

Follow-up Analytical Data



EMSL Analytical, Inc.

706 Gralin Street Kernersville, NC 27284

Tel/Fax: (336) 992-1025 / (336) 992-4175

<http://www.EMSL.com> / greensborolab@emsl.com

EMSL Order: 021803038

Customer ID: FMEC62

Customer PO: E5700.25

Project ID:

Attention: Glynn M. Ellen
F & ME Consultants
1825 Blanding Street
Columbia, SC 29201

Phone: (803) 254-4540

Fax: (803) 254-4542

Received Date: 05/01/2018 9:30 AM

Analysis Date: 05/02/2018

Collected Date: 04/30/2018

Project: Taylor House Renovations

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
TH-1-1-Flooring <small>021803038-0001</small>	Linoleum Flooring 2nd Floor	Tan/Green Fibrous Homogeneous	45% Cellulose	55% Non-fibrous (Other)	None Detected
TH-1-1-Mastic <small>021803038-0001A</small>	Linoleum Flooring 2nd Floor	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
TH-1-1-Felt <small>021803038-0001B</small>	Linoleum Flooring 2nd Floor	Brown/Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
TH-1-2-Flooring <small>021803038-0002</small>	Linoleum Flooring 2nd Floor	Tan/Green Fibrous Homogeneous	45% Cellulose	55% Non-fibrous (Other)	None Detected
TH-1-2-Mastic <small>021803038-0002A</small>	Linoleum Flooring 2nd Floor	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
TH-1-2-Felt <small>021803038-0002B</small>	Linoleum Flooring 2nd Floor	Brown Fibrous Homogeneous	65% Cellulose 3% Synthetic	32% Non-fibrous (Other)	None Detected
TH-2-1 <small>021803038-0003</small>	Wood Floor Underfelt 3rd Floor	Brown/Gray/Tan Fibrous Homogeneous	70% Cellulose 5% Synthetic 1% Glass	24% Non-fibrous (Other)	None Detected
TH-2-2 <small>021803038-0004</small>	Wood Floor Underfelt 2nd Floor	Brown/Gray/Tan Fibrous Homogeneous	70% Cellulose 5% Synthetic 1% Glass	24% Non-fibrous (Other)	None Detected
TH-2-3 <small>021803038-0005</small>	Wood Floor Underfelt	Brown Fibrous Homogeneous	65% Cellulose 3% Synthetic	32% Non-fibrous (Other)	None Detected
TH-3-1 <small>021803038-0006</small>	Wood Floor Felt 1st Floor	Brown/Black Fibrous Homogeneous	60% Cellulose 5% Synthetic	35% Non-fibrous (Other)	None Detected
TH-3-2 <small>021803038-0007</small>	Wood Floor Felt 1st Floor	Brown Fibrous Homogeneous	65% Cellulose 3% Synthetic	32% Non-fibrous (Other)	None Detected
TH-4-1 <small>021803038-0008</small>	Fiberboard Ceiling Kitchen	Brown/Various Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
TH-4-2 <small>021803038-0009</small>	Fiberboard Ceiling Kitchen	Brown/Various Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
TH-4-3 <small>021803038-0010</small>	Fiberboard Ceiling Kitchen	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
TH-5-1 <small>021803038-0011</small>	Wood Floor Paper	Brown Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
TH-5-2 <small>021803038-0012</small>	Wood Floor Paper	Brown Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected

Report amended: 05/02/2018 10:36:03 Replaces initial report from: 05/02/2018 09:17:57 Reason Code: Data Entry-Change to Location



EMSL Analytical, Inc.

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Tel/Fax: (336) 992-1025 / (336) 992-4175

<http://www.EMSL.com> / greensborolab@emsl.com

EMSL Order: 021803038
Customer ID: FMEC62
Customer PO: E5700.25
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
TH-5-3 <small>021803038-0013</small>	Wood Floor Paper	Brown Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
TH-6-1 <small>021803038-0014</small>	Duct Wrap	Gray Fibrous Homogeneous	5% Cellulose	15% Non-fibrous (Other)	80% Chrysotile

Analyst(s) _____
 Kristie Elliott (7)
 Nicole Shutts (11)



 Stephen Bennett, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%
 Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Report amended: 05/02/2018 10:36:03 Replaces initial report from: 05/02/2018 09:17:57 Reason Code: Data Entry-Change to Location



EMSL Analytical, Inc.

706 Gralin Street Kernersville, NC 27284
Tel/Fax: (336) 992-1025 / (336) 992-4175
<http://www.EMSL.com> / greensborolab@emsl.com

EMSL Order: 021803038
Customer ID: FMEC62
Customer PO: E5700.25
Project ID:

Attention: Glynn M. Ellen
F & ME Consultants
1825 Blanding Street
Columbia, SC 29201
Project: Taylor House Renovations

Phone: (803) 254-4540
Fax: (803) 254-4542
Received Date: 05/01/2018 9:30 AM
Analysis Date: 05/03/2018
Collected Date: 04/30/2018

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
TH-1-3-Flooring 021803038-0015	Linoleum Flooring 2nd Floor	Brown/Green Fibrous Heterogeneous	100	None	No Asbestos Detected
TH-1-3-Mastic 021803038-0016	Linoleum Flooring 2nd Floor	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
TH-1-3-Felt 021803038-0017	Linoleum Flooring 2nd Floor	Brown Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)

Stephen Bennett (3)

Stephen Bennett, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 05/03/2018 09:45:56



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

3038

EMSL ANALYTICAL, INC.
706 GRALIN ST.
KERNERSVILLE, NC 27284
PHONE: (336) 992-1025
FAX: (336) 992-4175

Company Name : F&ME Consultants		EMSL Customer ID:	
Street: 3112 Devine Street		City: Columbia	State/Province: SC
Zip/Postal Code: 29205	Country: USA	Telephone #: 803-254-4540	Fax #: 803-254-4542
Report To (Name):		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: gellen@fmecon.com, mmincey@fmecon.com		Purchase Order: E5700.25	
Project Name/Number: Taylor House Renovations		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

EMSL-Bill to: Same Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* - Please Check

3 Hour 6 Hour 24 Hour 48 Hour 72 Hour 96 Hour 1 Week 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<p>PCM - Air <input type="checkbox"/> Check if samples are from NY</p> <p><input type="checkbox"/> NIOSH 7400</p> <p><input type="checkbox"/> w/ OSHA 8hr. TWA</p> <p>PLM - Bulk (reporting limit)</p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)</p> <p><input type="checkbox"/> PLM EPA NOB (<1%)</p> <p>Point Count</p> <p><input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p>Point Count w/Gravimetric</p> <p><input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p><input type="checkbox"/> NYS 198.1 (friable in NY)</p> <p><input type="checkbox"/> NYS 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> NYS 198.8 SOF-V</p> <p><input type="checkbox"/> NIOSH 9002 (<1%)</p>	<p>TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only)</p> <p><input type="checkbox"/> AHERA 40 CFR, Part 763</p> <p><input type="checkbox"/> NIOSH 7402</p> <p><input type="checkbox"/> EPA Level II</p> <p><input type="checkbox"/> ISO 10312</p> <p>TEM - Bulk</p> <p><input checked="" type="checkbox"/> TEM EPA NOB</p> <p><input type="checkbox"/> NYS NOB 198.4 (non-friable-NY)</p> <p><input type="checkbox"/> Chatfield SOP</p> <p><input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5</p> <p>TEM - Water: EPA 100.2</p> <p>Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p> <p>All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p>	<p>TEM - Dust</p> <p><input type="checkbox"/> Microvac - ASTM D 5755</p> <p><input type="checkbox"/> Wipe - ASTM D6480</p> <p><input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)</p> <p>Soil/Rock/Vermiculite</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%)</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%)</p> <p><input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%)</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep</p> <p><input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)</p> <p>Other:</p> <p><input type="checkbox"/></p>
---	---	---

Check For Positive Stop - Clearly Identify Homogenous Group Filter Pore Size (Air Samples): 0.8µm 0.45µm

Samplers Name: G. Ellen Samplers Signature:

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
TH-1-1	Linoleum Flooring 2nd Floor		
TH-1-2	Linoleum Flooring 2nd Floor		
*TH-1-3	Linoleum Flooring 2nd Floor		
TH-2-1	Wood Floor Underfelt 3rd Floor		
TH2-2	Wood Floor Underfelt 2nd Floor		

Client Sample # (s): TH-1-1 - TH-6-1 Total # of Samples: 16

Relinquished (Client): Date: 04/30/18 Time: 17:00

Received (Lab): Date: 5/1/18 Time: 9:30

Comments/Special Instructions: TEM NOB 3rd sample for sample group marked with an astericks.

DEFX 804648505770



EMSL ANALYTICAL, INC.
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Asbestos Chain of Custody
EMSL Order Number (Lab Use Only):

3038

EMSL ANALYTICAL, INC.
706 GRALIN ST.
KERNERSVILLE, NC 27284
PHONE: (336) 992-1025
FAX: (336) 992-4175

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
TH-2-3	Wood Floor Underfelt		
TH-3-1	Wood Floor Felt 1st Floor		
TH-3-2	Wood Floor Felt 1st Floor		
*TH-3-3	Wood Floor Felt 1st Floor		
TH-4-1	Fiberboard Ceiling Kitchen		
TH-4-2	Fiberboard Ceiling Kitchen		
TH-4-3	Fiberboard Ceiling Kitchen		
TH-5-1	Wood Floor Paper		
TH-5-2	Wood Floor Paper		
TH-5-3	Wood Floor Paper		
TH-6-1	Duct Wrap		

***Comments/Special Instructions:**



EMSL Analytical, Inc.

706 Gralin Street Kernersville, NC 27284

Tel/Fax: (336) 992-1025 / (336) 992-4175

<http://www.EMSL.com> / greensborolab@emsl.com


EMSL Order: 021803206
Customer ID: FMEC62
Customer PO: E5700.25
Project ID:

Attention: Glynn M. Ellen F & ME Consultants 1825 Blanding Street Columbia, SC 29201	Phone: (803) 254-4540 Fax: (803) 254-4542 Received Date: 05/08/2018 9:30 AM Analysis Date: 05/09/2018 Collected Date: 05/07/2018
Project: Taylor House Renovations	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
TH-7-1 <small>021803206-0001</small>	Mudding Compound (Boiler)	Gray Fibrous Homogeneous		10% Ca Carbonate 87% Non-fibrous (Other)	3% Chrysotile
TH-7-2 <small>021803206-0002</small>	Mudding Compound (Boiler)				Positive Stop (Not Analyzed)
TH-7-3 <small>021803206-0003</small>	Mudding Compound (Boiler)				Positive Stop (Not Analyzed)

Analyst(s) _____
Kristie Elliott (1)



Stephen Bennett, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from: 05/09/2018 14:30:24



EMSL ANALYTICAL, INC.
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Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

3206

EMSL ANALYTICAL, INC.
706 GRALIN ST.
KERNERSVILLE, NC 27284

PHONE: (336) 992-1025
FAX: (336) 992-4175

Company Name : F&ME Consultants		EMSL Customer ID:	
Street: 3112 Devine Street		City: Columbia	State/Province: SC
Zip/Postal Code: 29205	Country: USA	Telephone #: 803-254-4540	Fax #: 803-254-4542
Report To (Name):		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: gellen@fmecon.com, mmincey@fmecon.com		Purchase Order: E5700.25	
Project Name/Number: Taylor House Renovations		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

EMSL-Bill to: Same Different - If Bill to is Different note instructions in Comments**
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3 Hour 6 Hour 24 Hour 48 Hour 72 Hour 96 Hour 1 Week 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<p>PCM - Air <input type="checkbox"/> Check if samples are from NY</p> <p><input type="checkbox"/> NIOSH 7400</p> <p><input type="checkbox"/> w/ OSHA 8hr. TWA</p> <p>PLM - Bulk (reporting limit)</p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)</p> <p><input type="checkbox"/> PLM EPA NOB (<1%)</p> <p>Point Count</p> <p><input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p>Point Count w/Gravimetric</p> <p><input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p><input type="checkbox"/> NYS 198.1 (friable in NY)</p> <p><input type="checkbox"/> NYS 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> NYS 198.8 SOF-V</p> <p><input type="checkbox"/> NIOSH 9002 (<1%)</p>	<p>TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only)</p> <p><input type="checkbox"/> AHERA 40 CFR, Part 763</p> <p><input type="checkbox"/> NIOSH 7402</p> <p><input type="checkbox"/> EPA Level II</p> <p><input type="checkbox"/> ISO 10312</p> <p>TEM - Bulk</p> <p><input type="checkbox"/> TEM EPA NOB</p> <p><input type="checkbox"/> NYS NOB 198.4 (non-friable-NY)</p> <p><input type="checkbox"/> Chatfield SOP</p> <p><input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5</p> <p>TEM - Water: EPA 100.2</p> <p>Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p> <p>All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p>	<p>TEM- Dust</p> <p><input type="checkbox"/> Microvac - ASTM D 5755</p> <p><input type="checkbox"/> Wipe - ASTM D6480</p> <p><input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)</p> <p>Soil/Rock/Vermiculite</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%)</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%)</p> <p><input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%)</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep</p> <p><input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)</p> <p>Other:</p> <p><input type="checkbox"/></p>
---	--	--

Check For Positive Stop - Clearly Identify Homogenous Group Filter Pore Size (Air Samples): 0.8µm 0.45µm

Samplers Name: G. Ellen

Samplers Signature:

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
TH-7-1	Mudding Compound (Boiler)		
TH-7-2	Mudding Compound (Boiler)		
TH-7-3	Mudding Compound (Boiler)		

Client Sample # (s):	TH-7-1 - TH-7-3	Total # of Samples:	3
Relinquished (Client):	Date: 05/07/18	Time:	17:00
Received (Lab):	Date: 5/8/18	Time:	9:30
Comments/Special Instructions:			
① EFX 804648505806			

APPENDIX C

Asbestos Containing Materials (ACM) Investigation Report

Prepared by F&ME Consultants

Dated: July 19, 2013

**ASBESTOS CONTAINING
MATERIALS INVESTIGATION
REPORT**

**FUTURE USC LAW SCHOOL SITE
USC DIVISION OF LAW ENFORCEMENT &
SAFETY**

#028

**1501 SENATE STREET
COLUMBIA, SOUTH CAROLINA**

REPORT PREPARED FOR:



**UNIVERSITY OF
SOUTH CAROLINA**

UNIVERSITY OF SOUTH CAROLINA

**743 Green Street
Columbia, South Carolina 29208**

BY:

**F&ME CONSULTANTS
3112 Devine Street
Columbia, South Carolina 29205
(803) 254-4540**

July 19, 2013

E5300.03

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APPENDIX A

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- General Building Plans (Figures 2-5)
- Sample Location Plans (Figures 6-10)
- Homogeneous Area Plans (Figures 11-15)

APPENDIX B

- Summary of Samples (Table I)
- Summary of Asbestos Containing Materials (Table II)
- Summary of Inspection
- Physical Assessment Data Sheets
- Bulk Asbestos Analytical Reports
- Chain of Custody

APPENDIX C

- Personnel Certifications

APPENDIX D

- SCDHEC Regulation Summary
- SCDHEC Abatement Project Forms

I. EXECUTIVE SUMMARY

As requested, F&ME Consultants has completed the Asbestos Containing Materials (ACM) investigation of the USC Division of Law Enforcement & Safety building (#028) located at 1501 Senate Street in Columbia, South Carolina. This investigation was conducted in accordance with SCDHEC, USEPA, and OSHA regulations.

It is our understanding that the future construction of the new USC Law School will require the demolition of multiple buildings, to include portions of the subject structure. Therefore, the scope of this ACM investigation was to identify, sample and assess materials suspected of containing asbestos that are located throughout the interior and exterior of the subject building structure. The field investigation was performed on May 20-23, 2013.

The investigation of the subject building identified numerous suspect materials. Of the materials analyzed, laboratory results indicate that the following seventeen (17) materials are ACM: black mastic on fiberglass duct wrap; Aircell pipe insulation; joint compound; plaster ceilings (east wing); spray-applied ceiling texture; block TSI pipe insulation; mudded elbows and joints; 9" x 9" black floor tiles; black mastic on fiberglass pipe wrap; Kiln #1 TSI and electrical wiring; exterior window glazing; gray exterior caulking; exterior black HVAC mastic; flashing material; black roofing mastic and flashing mastic. Attached is the report of our findings.

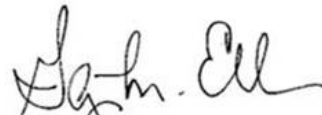
We sincerely appreciate the opportunity to assist you with this project. Should you have any questions or require additional information concerning this limited investigation, please do not hesitate to contact our office at (803) 254-4540.

Sincerely,

F&ME CONSULTANTS



Michael S. Mincey
Environmental Professional
Asbestos Consultant/Management Planner
SCDHEC License No: MP-00161
Expiration Date 02/15/2014



Glynn M. Ellen
Senior Environmental Professional
Asbestos Consultant/Management Planner
SCDHEC License No: ASB-22641
Expiration Date 02/15/2014

MSM/GME/jls

II. INTRODUCTION

As requested, F&ME Consultants has completed the Asbestos Containing Materials (ACM) investigation of the USC Division of Law Enforcement & Safety building (#028) located at 1501 Senate Street in Columbia, South Carolina. This investigation was conducted in accordance with SCDHEC, USEPA, and OSHA regulations.

It is our understanding that the future construction of the new USC Law School will require the demolition of multiple buildings, to include portions of the subject structure. Therefore, the scope of this ACM investigation was to identify, sample and assess materials suspected of containing asbestos that are located throughout the interior and exterior of the subject building structure. The field investigation was performed on May 20-23, 2013.

The results, conclusions and recommendations from this investigation are representative of the conditions observed at the site on the dates of the field inspection. F&ME does not assume responsibility for any changes in conditions or circumstances that occur after the inspection. Use of this document for bidding purposes is not recommended without prior consultation with F&ME.

III. INVESTIGATION RESULTS

The purpose of this investigation was to locate, sample and record the physical characteristics of suspect ACM associated with the interior and exterior portions of the subject building in anticipation of demolition activities. Therefore, the quantities and physical condition of suspect materials were assessed and bulk samples of these materials were submitted for laboratory analysis.

The subject building is composed of various construction applications, with varying dates of construction and with varying levels (i.e. slab-on-grade, partial basement, single-story, two-story, three-story, etc.). The building is currently occupied by the USC Division of Law Enforcement & Safety. It is constructed with masonry block, concrete, a built-up roof, a pitched A-framed roof. The exterior finishes include masonry brick walls, wood trim, a built-up roof and a pitched, A-framed shingled roof. Interior finishes include drywall walls and ceilings, plaster walls and ceilings, masonry block walls, floor tiles, carpeting, hardwood flooring and concrete flooring.

It is our understanding that the original building that was located on the site was an historic residence with a carriage house that was built in the early 1900's. The house was purchased in the 1950's by the Columbia Museum of Art and was converted to a museum. The building has been renovated over the years. These renovations include the addition of two (2) wings which were constructed at different times. The original house and the carriage house were listed on the National Registry of Historical Properties in the 1980's. We understand that the plans for the new law school include the demolition of the east and west wings and the restoration of the exterior of the two (2) historic structures. Based on these varying construction dates and history of renovation activities, the investigation approach was to divide the structure into four (4) investigation areas and sample common suspect materials (i.e. drywall/joint compound, plaster, etc.) independently from each area. The investigation areas were defined as follows: the original house (early 1900's); the carriage house (early 1900's); the east wing (late 1960's); and the west wing, which is the most recent addition.

The subject building structure also contains an extension from the east wing that was used as a planetarium. This area was inaccessible at the time of this investigation. As previously explained, it is our understanding that the entire east wing is to be demolished. For this reason, an investigation of the former planetarium must be performed prior to the commencement of demolition activities to ensure that suspect materials to be impacted are appropriately analyzed for asbestos content.

The investigation also identified a crawlspace area with unfinished dirt floors on the basement level of the west wing. Existing HVAC ducting was observed in this space. No evidence of contamination of the surface soils in this area was noted, and no indication of earlier mechanical systems were noted during this investigation. However, analysis of the soils to determine if asbestos is present may be warranted in the event that ACM was previously located in this area and removed at an unknown date.

Suspect materials identified during this investigation included the following materials:

- Various drywall/joint compounds
- Various floor tiles & associated mastics
- Various 2' x 2' & 2' x 4' ceiling panels
- Duct wrap on fiberglass insulation seams
- Various mastics on fiberglass duct wrap
- Baseboard adhesive
- Various textured ceiling materials
- TSI pipe insulation
- 12" x 12" Textured ceiling panels
- Block TSI pipe insulation
- Pipe wrap on fiberglass insulation
- Kiln electrical wiring
- Various vinyl floor coverings
- Carpet adhesive
- Black moisture sealant
- Various plasters
- Plaster wall panels
- TSI Mudded elbows and joints
- White pipe mastic
- Kiln TSI insulation
- Kiln room ceiling felt
- Gray mastic on metal ducts
- Exterior window glazing
- Various caulking (interior and exterior)
- Built-up roofing materials
- Various flashing materials and associated mastics
- Various black roofing mastics
- Roofing felt
- Roof access door coating
- Exterior black HVAC mastic
- Roofing shingles

Remaining building materials (i.e. concrete, metal, wood, brick, carpet, etc.) were not considered suspect.

Bulk samples of suspect materials were analyzed by Polarized Light Microscopy (PLM) in accordance with EPA 600/R-93/116. Confirmation Transmission Electron Microscopy (TEM) was also performed on any non-friable organically bound materials that tested negative for asbestos content as per SCDHEC regulations effective May 27, 2011. Proper sampling and chain-of-custody protocol were followed to ensure appropriate handling and delivery of samples to the analytical laboratory. See Appendix A for the Sample Location Plans (Figures 6-10).

A total of two hundred twenty-seven (227) samples were collected from the subject building. Due to multiple layering of some materials and the implementation of a "first-positive stop" protocol, two hundred thirty-eight (238) samples were analyzed by PLM and forty (40) were

TEM-confirmed. Of the materials analyzed, the following suspect materials were found to contain asbestos: black mastic on fiberglass duct wrap; Aircell pipe insulation; joint compound; plaster ceilings (east wing); spray-applied ceiling texture; block TSI pipe insulation; mudded elbows and joints; 9" x 9" black floor tiles; black mastic on fiberglass pipe wrap; Kiln #1 TSI and electrical wiring; exterior window glazing; gray exterior caulking; exterior black HVAC mastic; flashing material; black roofing mastic and flashing mastic (also see Table II, Summary of Asbestos Containing Materials). For more information regarding the location of these materials, refer to the Homogeneous Area Plans (Figure 11-15) located in the appendix.

During the investigation, plaster ceilings with spray-applied texture ceiling material were observed above the suspended ceiling system in rooms 135, 137 and 138 of the east wing. Laboratory results determined that the plaster and the texturing are ACM. Since none of the plaster samples collected in the other wings were found to be ACM, the laboratory was contacted to confirm that the plaster was in fact an ACM, as the asbestos-containing texturing may have influenced the analytical results. The laboratory reviewed the first sample and analyzed the remaining four (4) plaster samples at our request. This additional analysis determined that both the spray-applied texture ceiling material and the plaster in the east wing are ACM.

Multiple types of pipe insulation (Aircell, block, and fiberglass) were found in the basement of the original structure, and in various other areas of the building. Laboratory results determined that the block insulation and the Aircell contain asbestos. Due to access limitations and lack of original construction drawings, the exact location of ACM-insulated pipe lines in the wall cavities, above hard ceilings and within pipe chases was not delineated during this investigation. Because there is a potential for asbestos-containing TSI to be uncovered in these inaccessible areas, selective demolition may be warranted during the design phase of the project in order to delineate these lines in areas that will be affected by demolition activities. Please note that fiberglass insulation encountered in the south end of the basement has an asbestos-containing pipe wrap over it. This ACM pipe wrap appeared to be contained in the mechanical room (005) of the basement, while fiberglass insulation with non-ACM pipe wrap was found throughout the basement and other areas of the building. See the Homogeneous Area Plan (Figure 11) for the basement level for the location of the asbestos-containing fiberglass pipe wrap insulation.

Furthermore, mudded elbows and joints were found all three (3) types of pipe insulation in the basement of the original structure and above the ceiling in room 139 of the east wing. Mudded elbows associated with the Aircell, asbestos-containing block and fiberglass insulations were sampled independently of each other. Laboratory results indicate that the mudded elbows associated with the Aircell- and ACM block-insulated lines are ACM, while the elbows associated with the fiberglass-insulated pipe lines were found to be non-ACM. However, because of the potential for variability in the types of materials used for the mudded elbows, it is prudent to handle all mudded elbows as ACM during abatement operations.

The Appendices include a Site Vicinity Map (Figure 1), General Building Plans (Figures 2-5), Sample Location Plans (Figures 6-10), Homogeneous Area Plans (Figures 11-15), a Summary of Samples (Table I), a Summary of Asbestos Containing Materials (Table II), Physical Assessment Data Sheets, Bulk Sample Analysis Reports, the Chain of Custody, Personnel Certifications, a SCDHEC Regulation Summary and SCDHEC Abatement Project Forms.

IV. ASBESTOS CONTAINING MATERIALS DESCRIPTION & ASSESSMENT

The following items are descriptions and quantities of the asbestos containing materials identified during this investigation (See Homogeneous Area Plans, Figures 11-15):

- HA-1 – Black Mastic on Fiberglass Duct Wrap (~50 S.F.)

Metal HVAC ductwork with fiberglass duct wrap insulation was observed in the east and west wings. Asbestos-containing black mastic was used to seal the seams of the fiberglass duct wrap in hallways H102, H104, H105 of the west wing and in room 133 of the east wing. This material appears to be intact and is in a non-friable condition. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.



Photo 1. Asbestos-containing black mastic was found on HVAC duct wrap in the east and west wings.

- HA-2 – Aircell Pipe Insulation (~100 L.F.)

The Aircell TSI insulation is located at the south wall of room 125 on the first floor below the existing ceiling and in the basement of the original portion of the building structure. Due to limited access to the wall cavities and lack of original construction drawings, it is difficult to clearly delineate the exact location and estimated quantity of this material. Therefore, unless otherwise determined, it is assumed that this material



Photo 2. Asbestos-containing Aircell pipe insulation

exists throughout the exterior wall cavities, above hard ceilings and within pipe chases. This material was observed to be in an intact but friable condition. Some evidence of deterioration was noted due to the age of the material. Prior to demolition activities, this material must be removed and disposed of as ACM by a licensed abatement contractor.

- HA-3 – Joint Compound (~4,000 S.F.)

The joint compound is located on the drywall walls of the east wing of the building. A total of five (5) drywall/joint compound samples were taken in various rooms throughout this area of the building. A review of the analytical results indicates that only one (1) of the drywall/joint compound samples tested positive for asbestos. Per the regulations and for the purposes of this report, drywall/joint compound throughout the east wing of the building is deemed positive for asbestos content. However, the analytical data indicate that both positive and negative drywall/joint compound is present in this area of the building. Therefore, additional sampling may be warranted to isolate the positive material from the negative. It should be noted that overall the drywall joint compound throughout the east wing is intact and in a good condition. However, the joint compound seams are exposed above the suspended ceiling and in the instance would be deemed friable. These materials must be removed and disposed of as ACM by a licensed abatement contractor prior to demolition of the building.

- HA-4 – Plaster Ceiling (~1,200 S.F.)

Asbestos-containing plaster ceilings are located above the existing suspended ceiling grid in rooms 135, 137 and 138 of the east wing. The exposed surfaces are also coated in an asbestos-containing spray-applied ceiling texture. Both materials appear to be intact and however the texturing is in a friable condition. Some localized damage was noted. Prior to demolition activities, these materials must be removed and disposed of as friable ACM by a licensed abatement contractor.



Photo 3. The asbestos-containing plaster ceilings were found above the ceiling grid in rooms 135, 137 and 138 of the east wing.

- HA-5 – Spray-Applied Ceiling Texture (~1, 200 S.F.)

Asbestos-containing spray-applied ceiling texture was found on the plaster ceilings in rooms 135, 137 and 138 of the east wing. Overall, this material appears to be intact and is in a friable condition. Prior to demolition activities, these materials must be removed and disposed of as friable ACM by a licensed abatement contractor.

- HA-6 – Block TSI Pipe Insulation (~800 L.F.)

Asbestos-containing block TSI pipe insulation was noted in the area of the basement associated with the original house and above the ceiling in room 139 of the east wing. Due to limited access to the wall cavities and lack of original construction drawings for both the original house and the east wing, it is difficult to clearly delineate the exact location and to estimate the quantity of this ACM. During demolition and/ or renovation activities, there is potential for asbestos-containing TSI to be uncovered in exterior wall cavities, above hard ceilings and within pipe chases. This material appears to be intact and is in a friable condition. This material must be removed and disposed of as ACM by a licensed abatement contractor prior to demolition of the building.

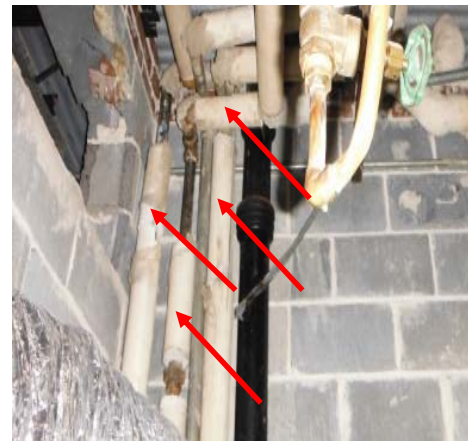


Photo 4. Asbestos-containing block TSI was observed in the basement level of the original house and above the ceiling in room 139 of the east wing.

- HA-7 – Mudded Elbows (Est. ~80 Elbows)

Mudded elbows were found on the joints of all three (3) types of pipe insulation in the basement of the original structure and above the ceiling in room 139 of the east wing. Mudded elbows associated with the Aircell, asbestos-containing block and non-ACM fiberglass insulations were sampled independently of each other. Laboratory results indicate that the mudded elbows associated with the Aircell- and ACM block-insulated lines are also ACM, while the elbows associated with the non-ACM fiberglass-insulated pipe lines were



Photo 5. Asbestos-containing mudded elbows were found on pipe lines insulated with Aircell and block insulation.

found to be non-ACM. However, because of the potential for variability in the types of materials used for the mudded elbows, it is prudent to handle all mudded elbows as ACM. This material appears to be intact and is in a friable condition. This material must be removed and disposed of as ACM by a licensed abatement contractor prior to demolition of the building.

- HA-8 – 9” x 9” Black Floor Tile (~80 S.F.)

Asbestos-containing 9” x 9” black floor tiles were identified under the existing carpet in room 205 of the carriage house. During bulk sample collection of the floor tiles and associated mastic, a layer of felt paper was also identified. Both the black floor tile mastic and the underlying felt paper were found to be negative for asbestos. The asbestos-containing floor tiles are intact but show evidence of a significant amount of deterioration due to its age. It is difficult to assess the overall condition due to the carpeting. Furthermore, the tiles were noted to be very brittle during bulk sample collection, indicating that removal of the overlying non-ACM carpet which is glued down will need to be performed under full containment due to the high potential for breakage of the tiles. These materials must be removed and disposed of as ACM by a licensed abatement contractor prior to demolition of the building.



Photo 6. Asbestos-containing 9” x 9” floor tiles were found beneath non-ACM carpeting. Non-ACM felt paper was also identified in this location beneath the ACM floor tiles.

- HA-9 – Pipe Wrap on Fiberglass Insulation (~40 L.F.)

The majority of fiberglass pipe insulation observed in the subject structure was considered to be a non-suspect material. However, fiberglass pipe insulation found in the basement of the original building structure had a wrap that was found to contain a layer of asbestos-containing black mastic. This ACM is on a section of pipe located on the south end of the basement and appears to be intact and in a non-friable condition. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.

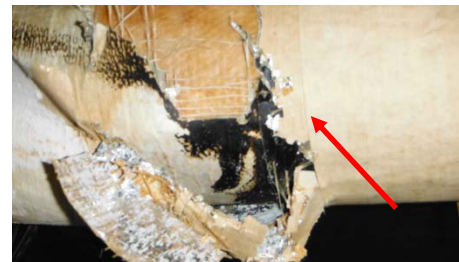


Photo 7. Asbestos-containing fiberglass pipe insulation was found in the south end of the basement level.

- HA-10 – Kiln TSI and Electrical Wiring (~80 S.F.)

The investigation identified an abandoned kiln located in the basement of the east wing (Room 014) which is in the former Carriage House of the original structure. The kiln was insulated with an asbestos-containing jacketing on the exterior and also has asbestos-insulated wiring. The asbestos-containing electrical wiring was found on the rear of the kiln. The TSI is severely damaged, with visible debris observed on the ground,



Photo 8. Remnants of asbestos-containing TSI jacketing were found to be severely damaged.

while the electrical wiring insulation appears to be intact but in poor condition. Both are in friable condition. These materials must be removed and disposed of as friable ACM by a licensed abatement contractor prior to demolition of the building. Additionally, the associated bricks and surrounding surface soils may need to be abated due to contamination.

- HA-11 – Exterior Window Glazing (~41 Window Units)

Asbestos-containing window glazing was found on forty-one (41) exterior windows associated with the subject structure. This material was observed to be damaged with obvious deterioration due to weathering, which has rendered it friable in some areas. Furthermore, evidence of delamination was observed, as window glazing debris has accumulated on some of the window sills. The window units vary in size and are located around the perimeter of the original house on the first through third floors, on the second floor of the carriage house, on the north side of the east wing and on the east side of the west wing. Prior to demolition activities, this material and associated debris must be removed and disposed of as ACM by a licensed abatement contractor.



Photo 9. Asbestos-containing exterior window glazing was found on all exterior windows of the subject structure

- HA-12 – Gray Exterior Caulking (~1 S.F.)

The gray exterior caulking is located around the metal access door to the crawlspace beneath the west wing. This non-friable material appears to be intact and in good condition. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.

- HA-13 – Exterior Black HVAC Mastic (~5 S.F.)

Exterior HVAC ductwork was found on the roof of the west wing. This ductwork supplies the second floor of the original house and is insulated with fiberglass. Asbestos-containing HVAC mastic was used to seal the seams of the duct insulation. This material appears to be in an intact non-friable condition but shows evidence of deterioration from exposure to the elements. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.



Photo 10. Asbestos-containing black HVAC mastic was found on ductwork insulation located on the roof of the west wing.

- HA-14 – Flashing Material (~860 S.F.)

The perimeter of the east wing's roof is surrounded by a parapet wall. Asbestos-containing flashing material was found along the entire length of this wall. This material appears to be intact and in a good, non-friable condition. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.

- HA-15 – Black Roofing Mastic (~50 S.F.)

Asbestos-containing black roofing mastic is located around roof penetrations and the parapet walls of the east wing roof. Overall, this material appears to be intact and is in good, non-friable condition. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.

- HA-16 – Black Flashing Mastic (~20 S.F.)

Asbestos-containing black roofing mastic is located around roof penetrations and on seams of the flashing material along the parapet walls of the west wing roof. Overall, this material appears to be intact and is in good, non-friable condition. Prior to demolition of the building, this material must be removed and disposed of as ACM by a licensed abatement contractor.

Asbestos containing materials are categorized by SCDHEC as friable (a.k.a. regulated asbestos containing materials, or RACM), Category I non-friable ACM (packing, gaskets, floor coverings, asphalt roofing products, etc.) and Category II non-friable ACM (other non-friable materials not covered in Category I). SCDHEC regulates any disturbances of friable/RACM, requiring its removal prior to renovation or demolition activities.

SCDHEC also legally tracks the dumping of all ACM into landfills. Therefore, SCDHEC must be notified prior to abatement and demolition projects in order to arrange for the proper disposal of ACM and associated contaminated debris. Most landfills will not accept ACM or asbestos-contaminated debris. This is an important consideration for the owner because it is more expensive to dispose of ACM than normal debris. If the abatement/ demolition contractor selects a landfill that accepts ACM, the entire load of abatement/ demolition debris could be transported to the permitted landfill. However, since the ACM would be mixed in with the total demolition debris, all of the debris would be considered to be ACM resulting in higher disposal costs. Therefore, it is recommended that removal of all asbestos is conducted prior to and separate from building demolition activities.

Unlike SCDHEC, OSHA does not distinguish between friable and non-friable ACM, regulated and non-regulated ACM, and/or ACM in good condition versus ACM in poor/damaged condition. Instead, OSHA regulates all worker contact with asbestos.

This report has been prepared exclusively for the University of South Carolina, and shall not be disseminated in whole or part to other parties without prior consent from the University of South Carolina or F&ME Consultants, Inc. No other environmental issues are addressed in this report.

V. RECOMMENDATIONS

It is our understanding that multiple structures, including the subject building, are to be demolished and/ or renovated in anticipation of the construction of the new USC Law School building. Furthermore, we understand that the east and west wings of the subject building are to be demolished, while the original house and carriage house are to be renovated and restored to reflect their historic nature.

Based on this understanding, ACM identified during this investigation must be abated prior to the commencement of demolition or renovation activities that will impact them. The abatement project design process will require an ACM investigation of the planetarium, as it is attached to

the east wing that is set to be demolished. Additionally, there may be some need for selective demolition in the original house depending upon the scope of the planned interior renovations. The age of the home and the amount of work that has been performed on it over the years increases the probability that suspect ACM may be hidden in wall cavities. Furthermore, surface soils surrounding the kiln and located in the crawlspace may need some testing or additional investigation to determine whether or not there is contamination present.

All abatement work must be performed by an AHERA-certified and SCDHEC-licensed Abatement Contractor. This work must be performed in accordance with all applicable regulations and guidelines, such as notification and air monitoring requirements (see below for a summary).

If any concealed and/or inaccessible ACM are encountered during asbestos abatement or demolition activities, the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/ Abatement Contractor/ Asbestos Consultant for an appropriate response action. The SCDHEC must be notified in the event that any additional ACM is discovered, as well as changes in the condition of identified ACM.

All asbestos waste, including contaminated building materials (i.e. original window frames etc.), must be deposited in a landfill permitted by the SCDHEC for receiving ACM.

The SCDHEC's Standards of Performance for Asbestos Projects (R 61-86.1) includes requirements for abatement projects regarding notifications, project design, air sampling and analysis, etc. For informational purposes, some of these requirements are summarized below:

Notifications. Written notification (SCDHEC Form 3430) must be submitted to SCDHEC at least two (2) calendar weeks prior to initiation of abatement activities for renovation/demolition projects. A copy of this inspection report and applicable fee payment must be attached to the notification. Additional fees may be required. Copies of all notifications and documents pertinent to the abatement operations must be posted on the job site during abatement work. The Owner/Operators must notify all parties involved with this project of the nature of the work as well as the locations and quantities of asbestos materials to be disturbed or those located near demolition/removal work areas. This notification requirement is also extended to any persons/employees who work near the demolition/removal work areas.

Project Design. Furthermore, abatement projects that will remove more than 3,000 square, 1,500 linear or 656 cubic feet of regulated asbestos-containing materials are required to have a licensed and certified Abatement Project Designer develop a project design prior to the commencement of any abatement activities. The Abatement Contractor is required to adhere to the design, which must address all information as directed by the regulations.

Air Monitoring. The Abatement Contractor is responsible for daily personal air sampling for Abatement Workers in compliance with current OSHA standard 29 CFR 1926.1101. All remaining air monitoring services required for a renovation project (i.e. backgrounds, areas, and clearances) will be provided by the Owner or the Owner's Representative, as required by SCDHEC.

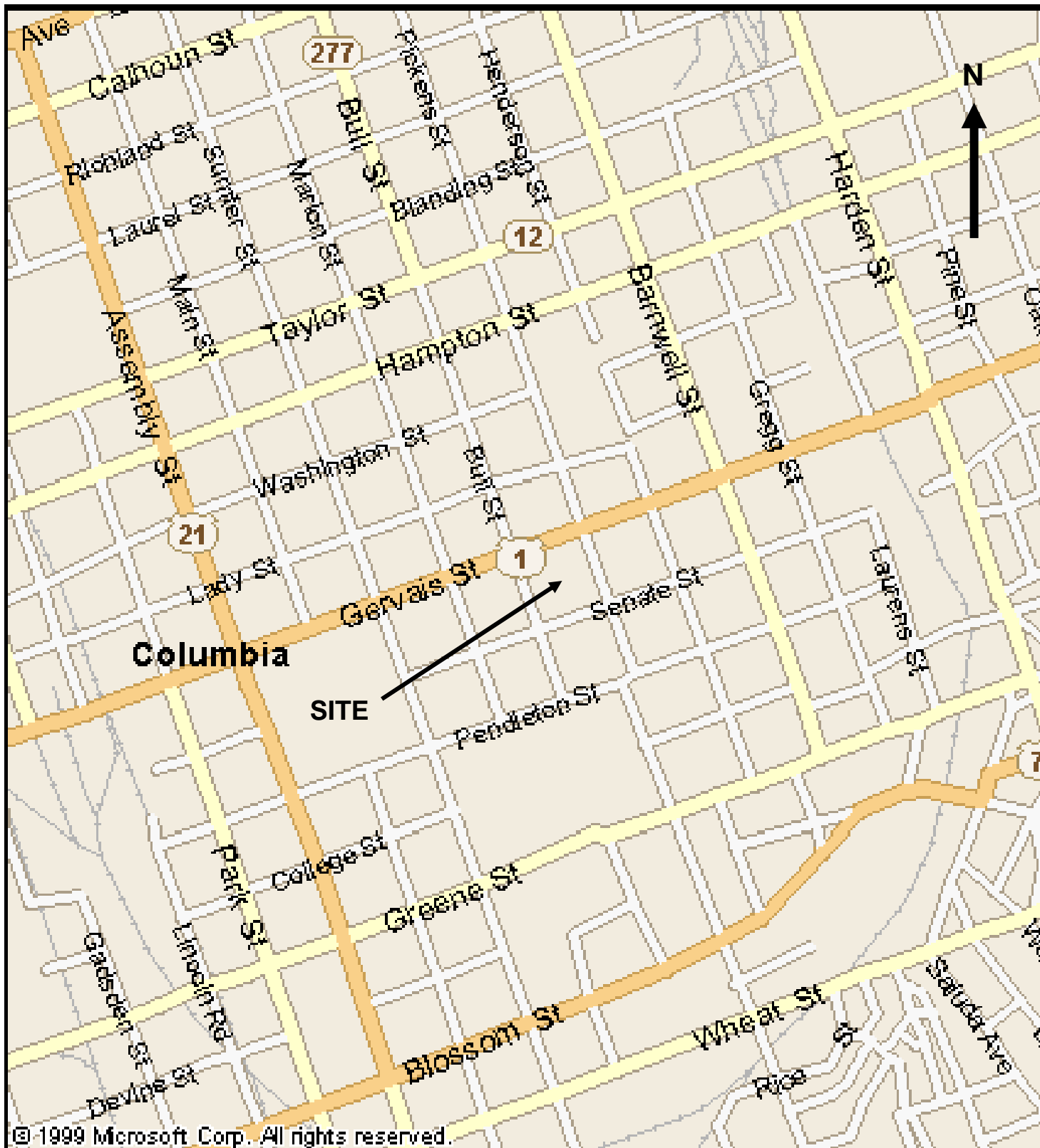
APPENDIX A

Site Vicinity Map (Figure 1)

General Building Plans (Figures 2-5)

Sample Location Plans (Figures 6-10)

Homogeneous Areas Plans (Figures 11-15)



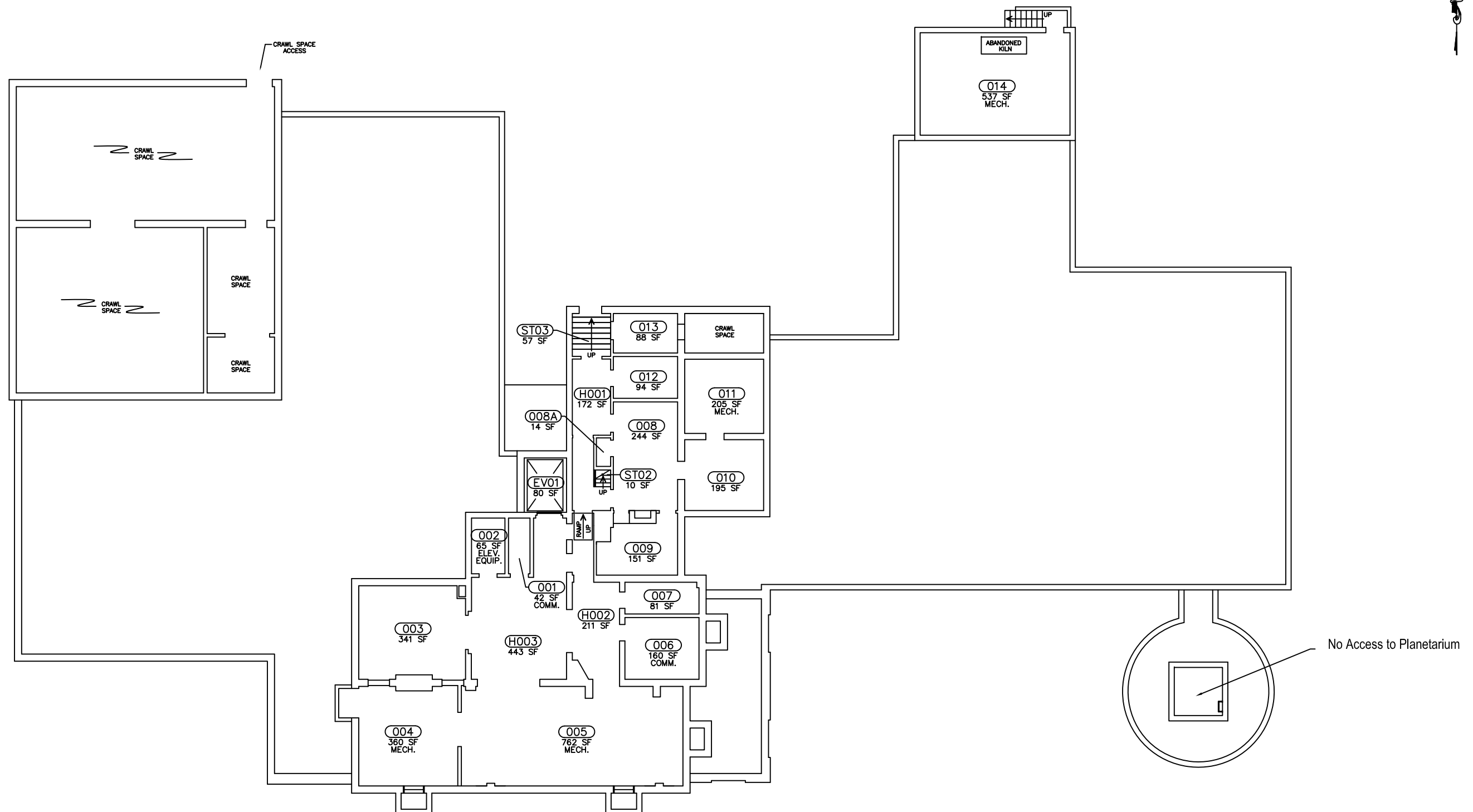
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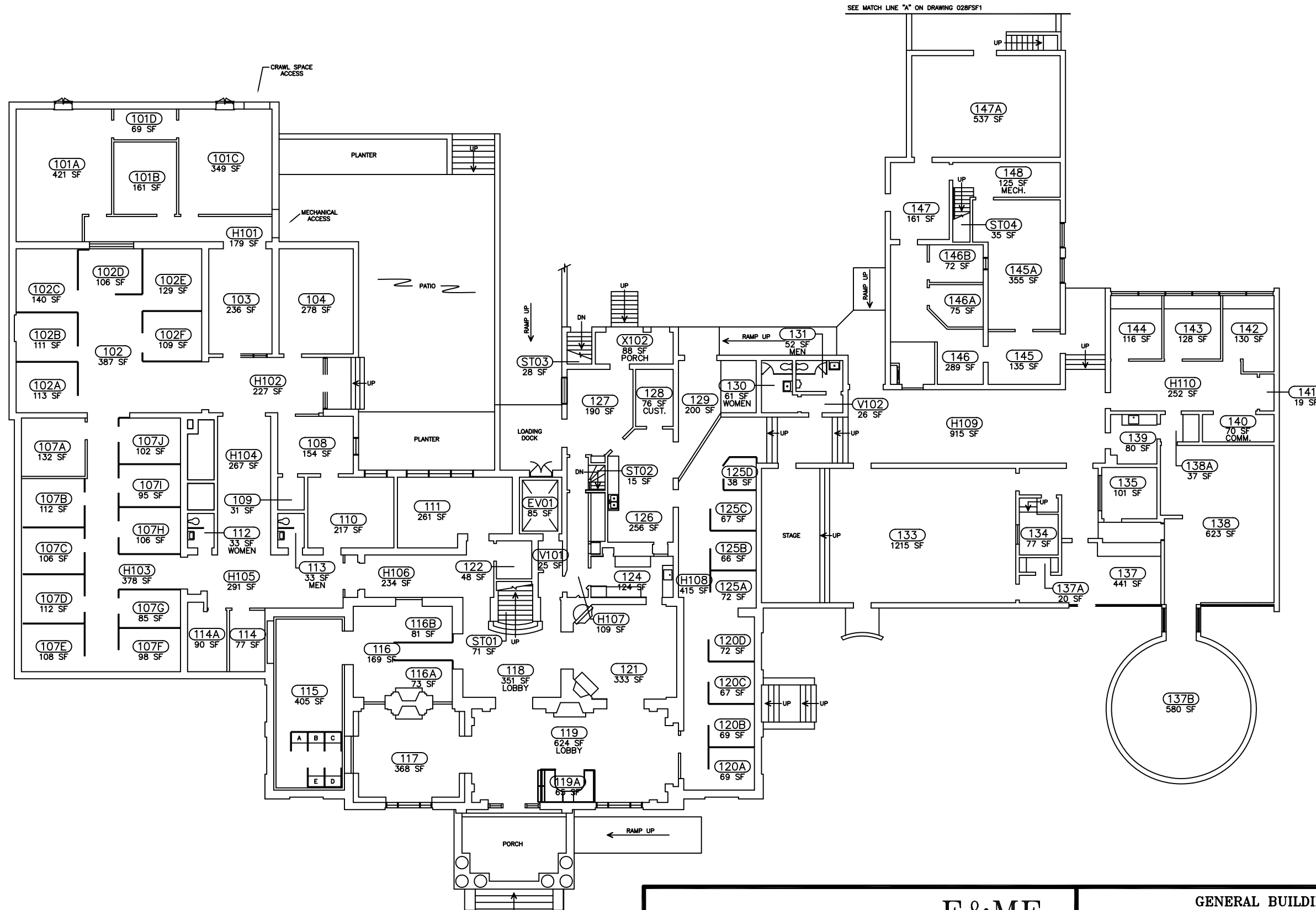
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SITE VICINITY MAP
USC New Law School Site, Building #028
Columbia, South Carolina

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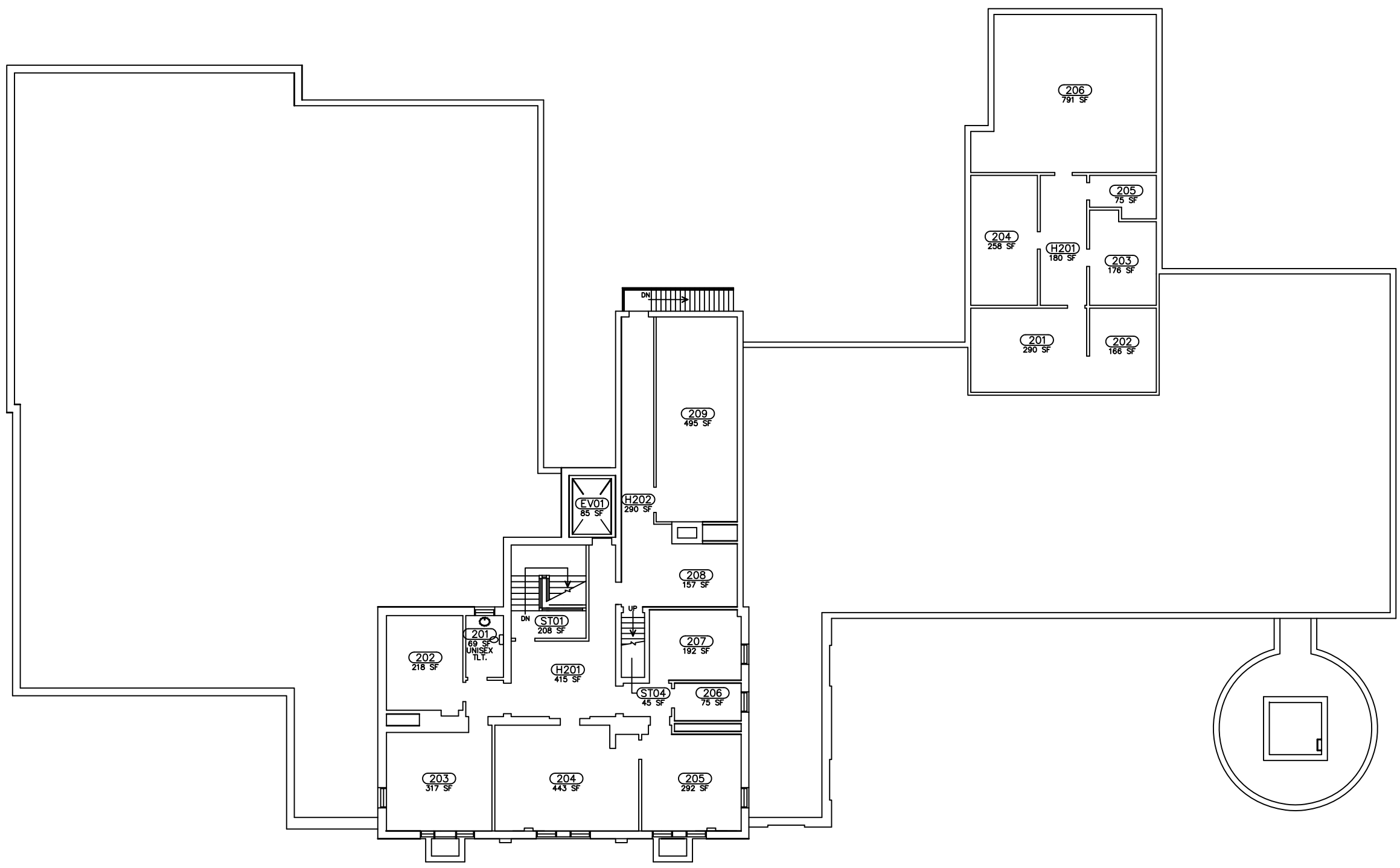
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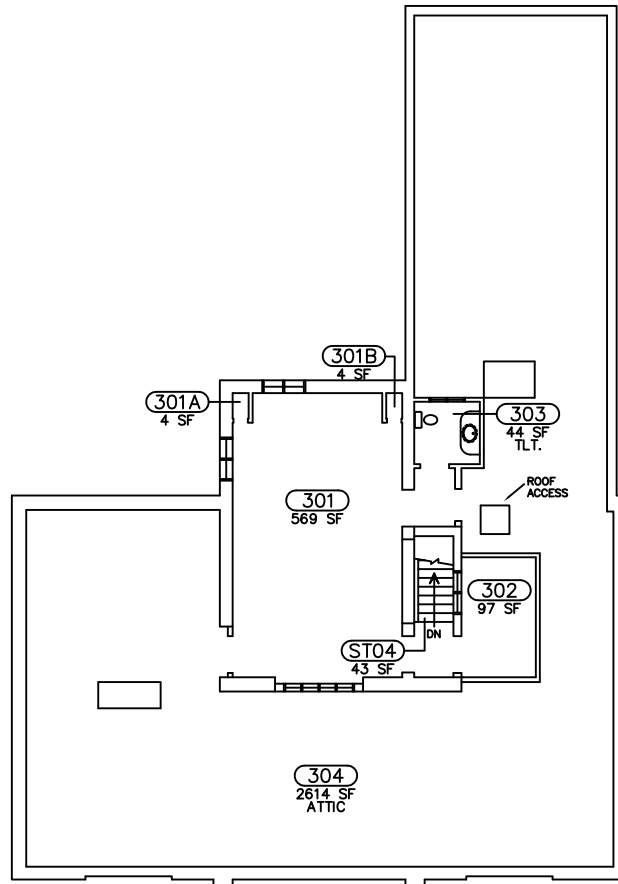
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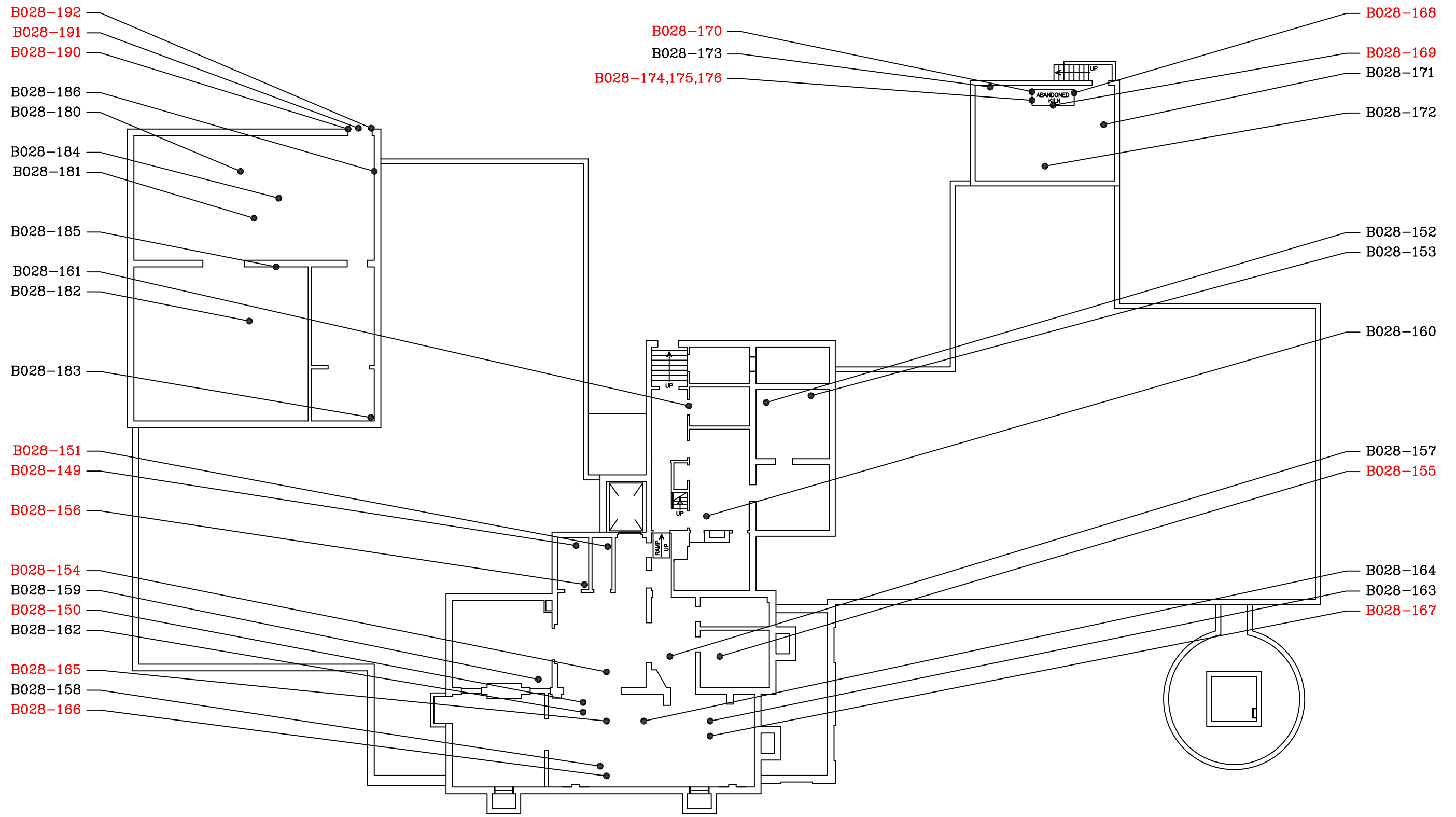
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GENERAL BUILDING PLAN
FUTURE USC LAW SCHOOL - BLD. #028 - 3RD FLOOR
COLUMBIA, SOUTH CAROLINA

UNIVERSITY OF SOUTH CAROLINA

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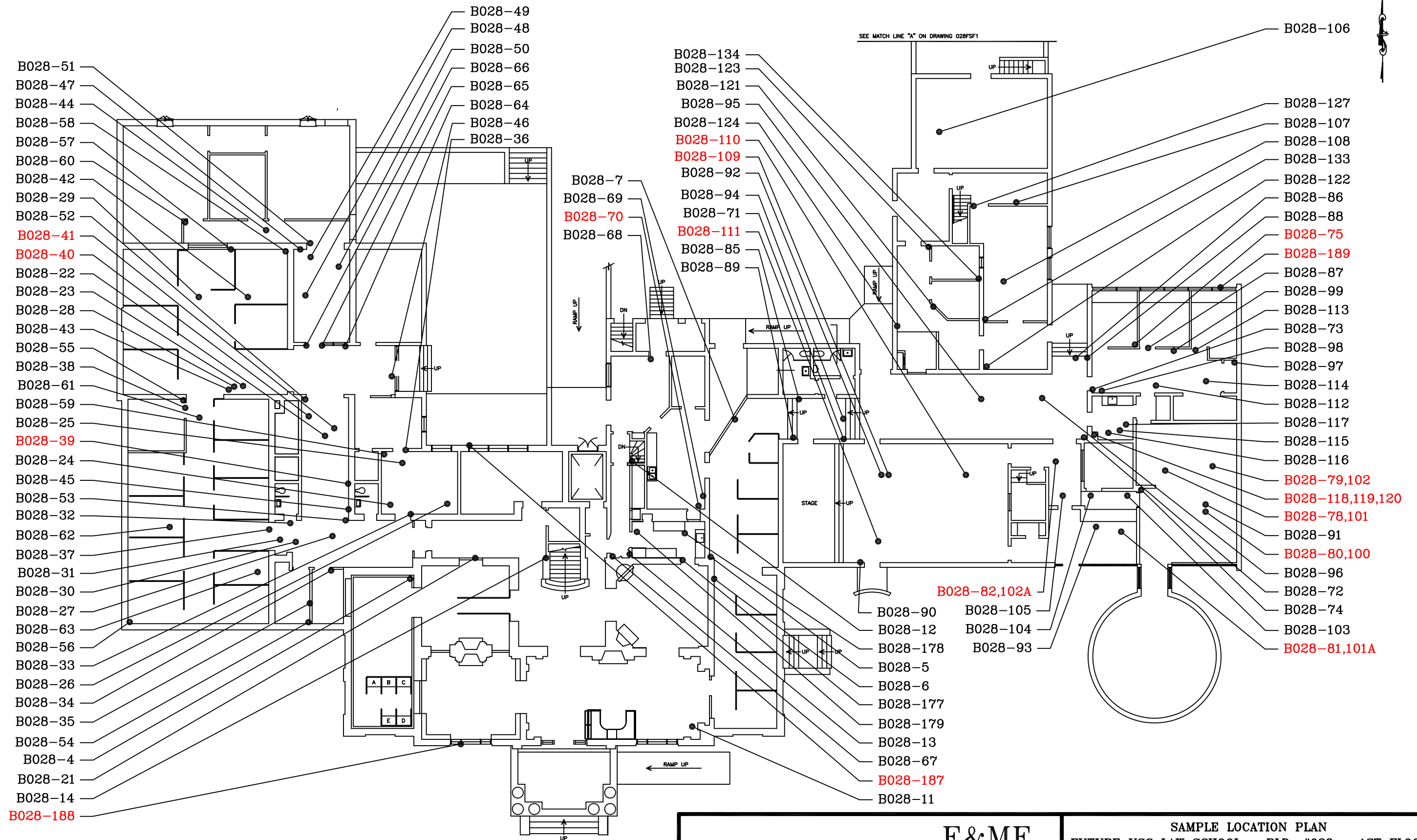
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SAMPLE LOCATION PLAN
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COLUMBIA, SOUTH CAROLINA

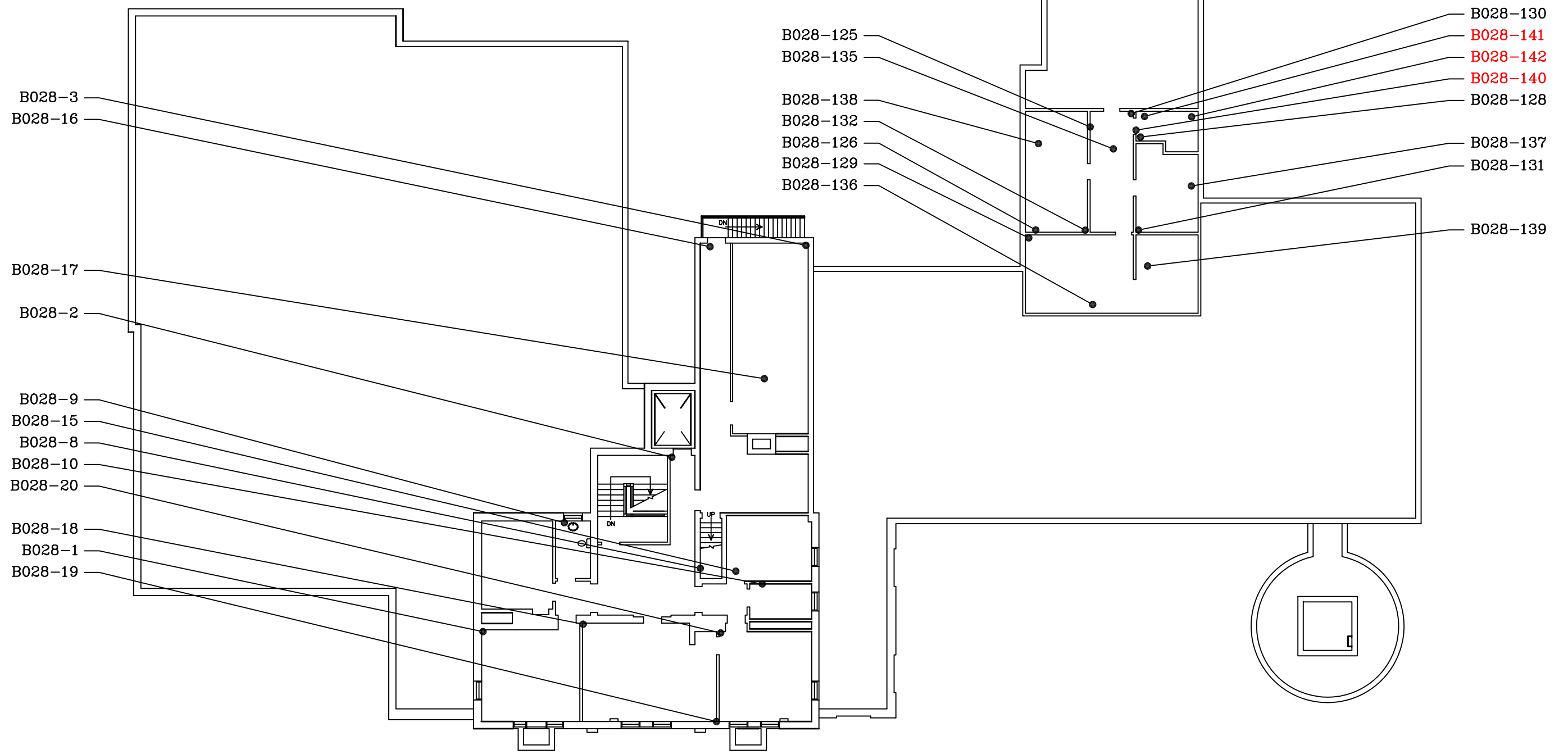
UNIVERSITY OF SOUTH CAROLINA

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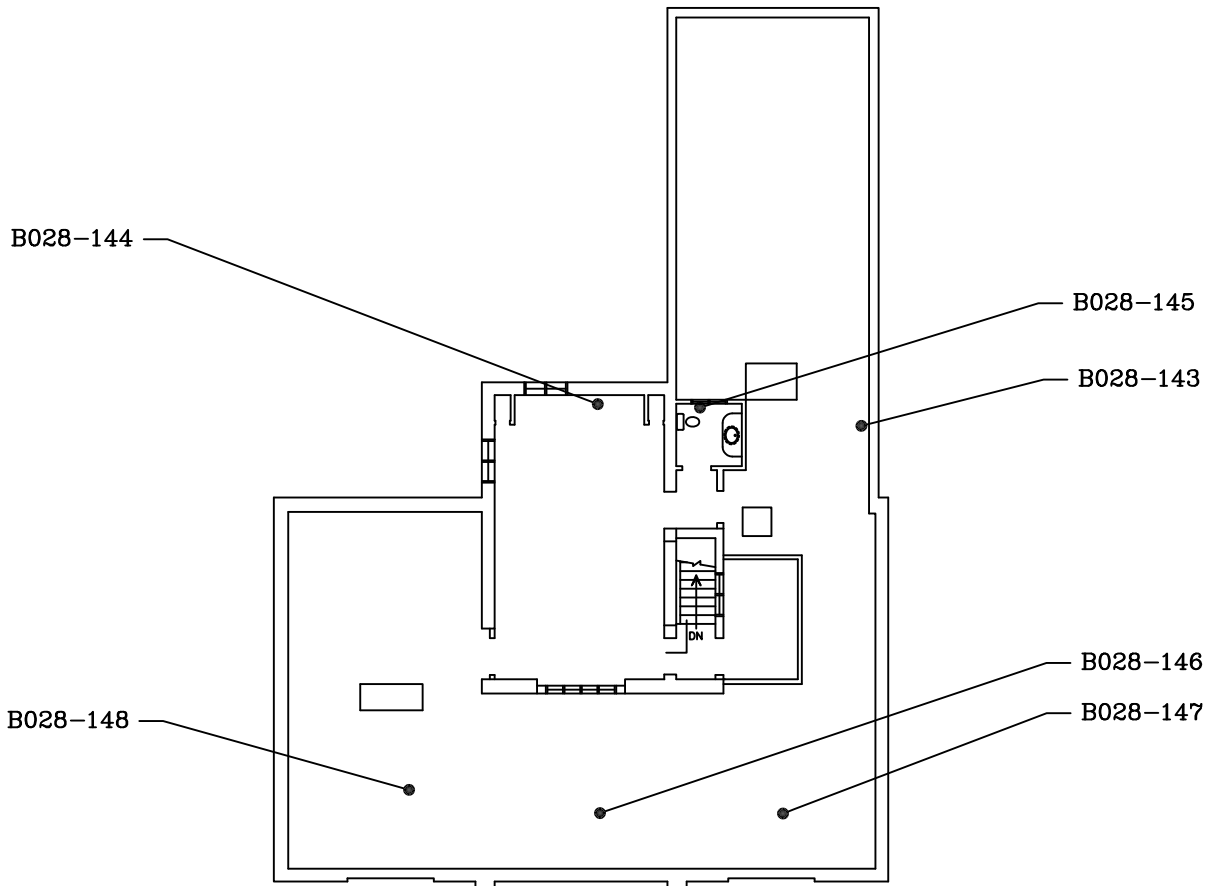
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	CHECKED BY: <u>JLS</u>	PROJECT: <u>E5300.03</u>	
	APPROVED BY: <u>GME</u>	FIGURE: <u>8</u>	



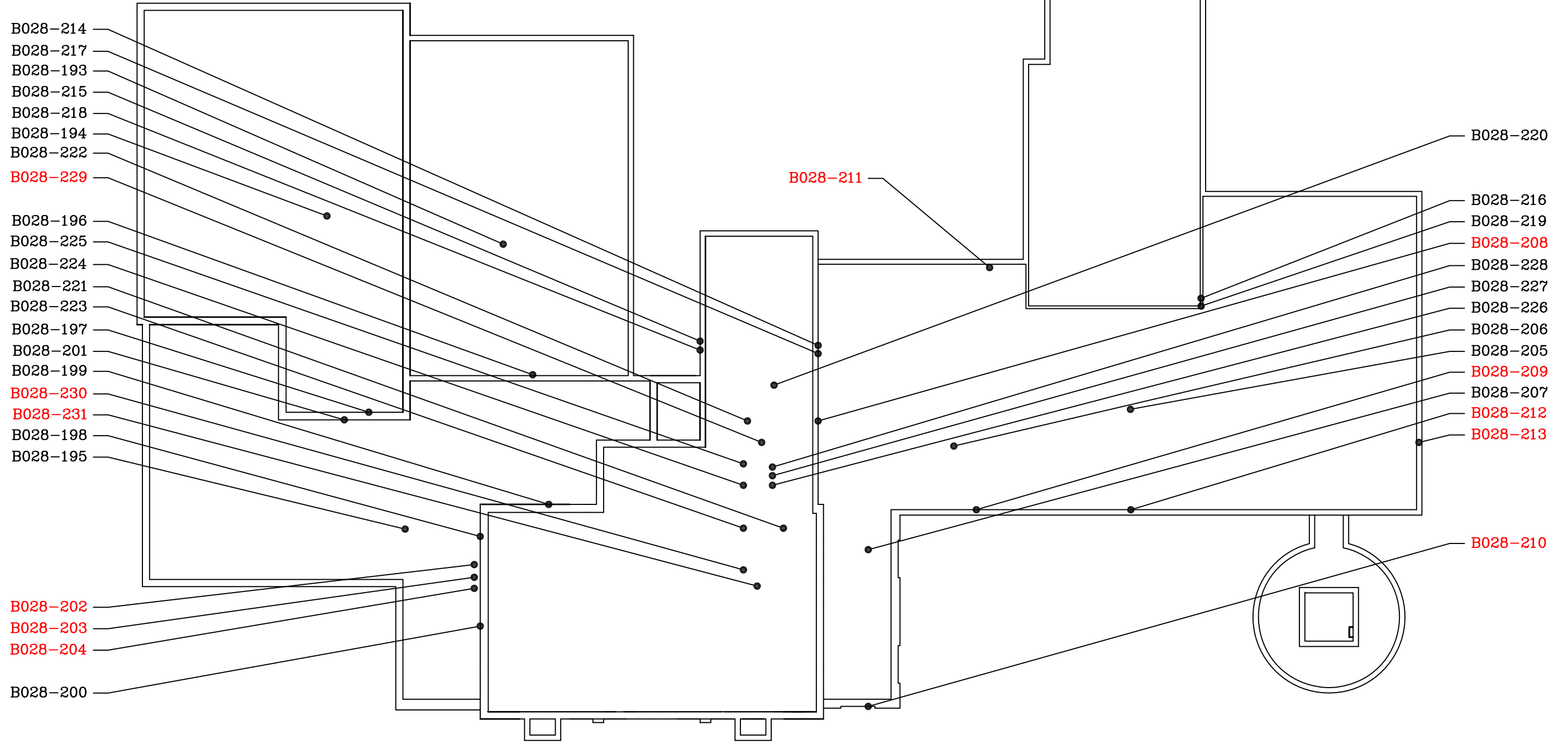
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GENERAL BUILDING PLAN
FUTURE USC LAW SCHOOL - BLD. #028 - 3RD FLOOR
COLUMBIA, SOUTH CAROLINA

UNIVERSITY OF SOUTH CAROLINA

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APPROVED BY: GME

SCALE: 1"=20'
PROJECT: E5300.03
FIGURE: 9



B028-214
B028-217
B028-193
B028-215
B028-218
B028-194
B028-222
B028-229
B028-196
B028-225
B028-224
B028-221
B028-223
B028-197
B028-201
B028-199
B028-230
B028-231
B028-198
B028-195
B028-202
B028-203
B028-204
B028-200

B028-211

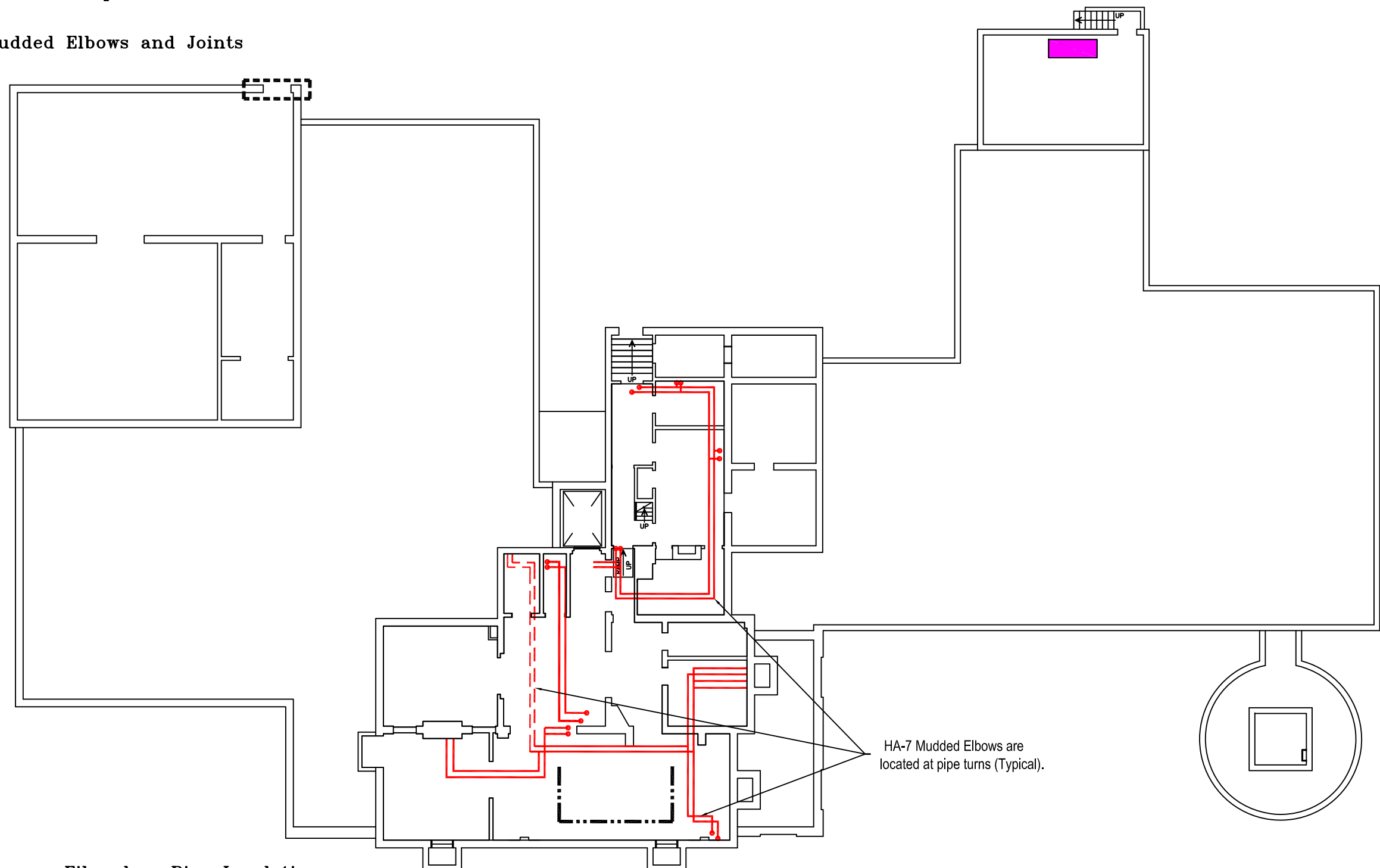
B028-220

B028-216
B028-219
B028-208
B028-228
B028-227
B028-226
B028-206
B028-205
B028-209
B028-207
B028-212
B028-213

B028-210

F&ME CONSULTANTS	SAMPLE LOCATION PLAN FUTURE USC LAW SCHOOL - BLD. #028 - ROOF COLUMBIA, SOUTH CAROLINA												
	UNIVERSITY OF SOUTH CAROLINA	<table border="1"><tr><td>DRAWN BY:</td><td>MSM</td><td>SCALE:</td><td>1"=20'</td></tr><tr><td>CHECKED BY:</td><td>JLS</td><td>PROJECT:</td><td>E5300.03</td></tr><tr><td>APPROVED BY:</td><td>GME</td><td>FIGURE:</td><td>10</td></tr></table>	DRAWN BY:	MSM	SCALE:	1"=20'	CHECKED BY:	JLS	PROJECT:	E5300.03	APPROVED BY:	GME	FIGURE:
DRAWN BY:	MSM	SCALE:	1"=20'										
CHECKED BY:	JLS	PROJECT:	E5300.03										
APPROVED BY:	GME	FIGURE:	10										

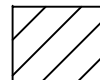
- HA-2 - Air Cell Pipe Insulation
- HA-6 - Block TSI Pipe Insulation
- HA-7 - Mudded Elbows and Joints




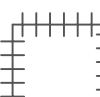
HA-7 Mudded Elbows are located at pipe turns (Typical).

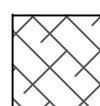
- HA-9 - Wrap on Fiberglass Pipe Insulation
- HA-10 - Kiln TSI and Electrical Wiring
- HA-12 - Gray Exterior Caulking

F&ME CONSULTANTS		HOMOGENEOUS AREA PLAN FUTURE USC LAW SCHOOL - BLD. #028 - BASEMENT COLUMBIA, SOUTH CAROLINA	
UNIVERSITY OF SOUTH CAROLINA		DRAWN BY: <u>MSM</u> CHECKED BY: <u>JLS</u> APPROVED BY: <u>GME</u>	SCALE: <u>1"=20'</u> PROJECT: <u>E5300.03</u> FIGURE: <u>11</u>

 HA-1 - Black Mastic on Fiberglass Duct Wrap

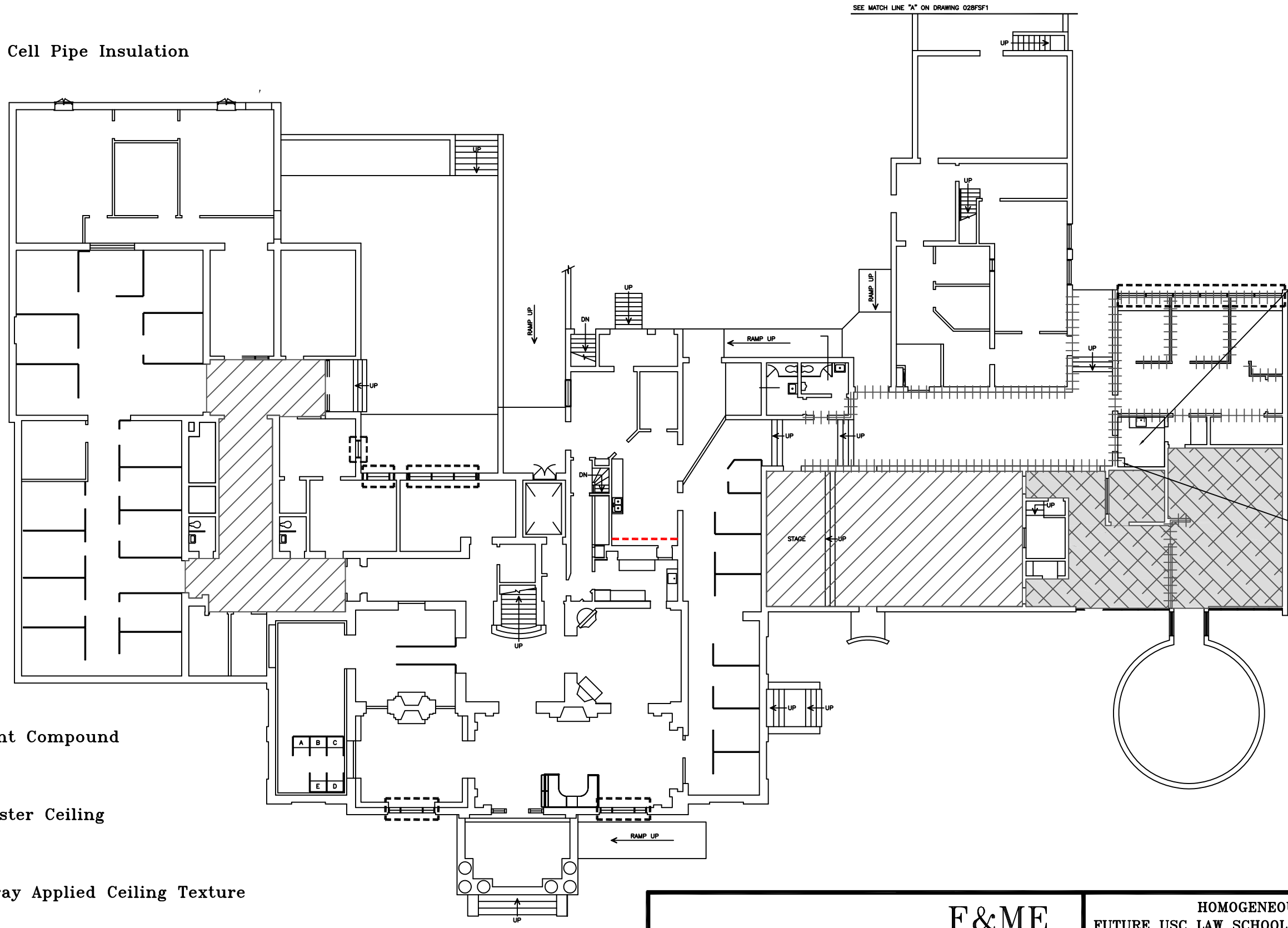
 HA-2 - Air Cell Pipe Insulation

 HA-3 - Joint Compound

 HA-4 - Plaster Ceiling

 HA-5 - Spray Applied Ceiling Texture

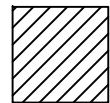
 HA-11 - Exterior Window Glazing



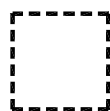
HA-6 Block TSI Pipe Insulation & HA-7 Mudded Elbows are located above ceiling in this room.

HA-6 Block TSI Pipe Insulation & HA-7 Mudded Elbows are located in chase.

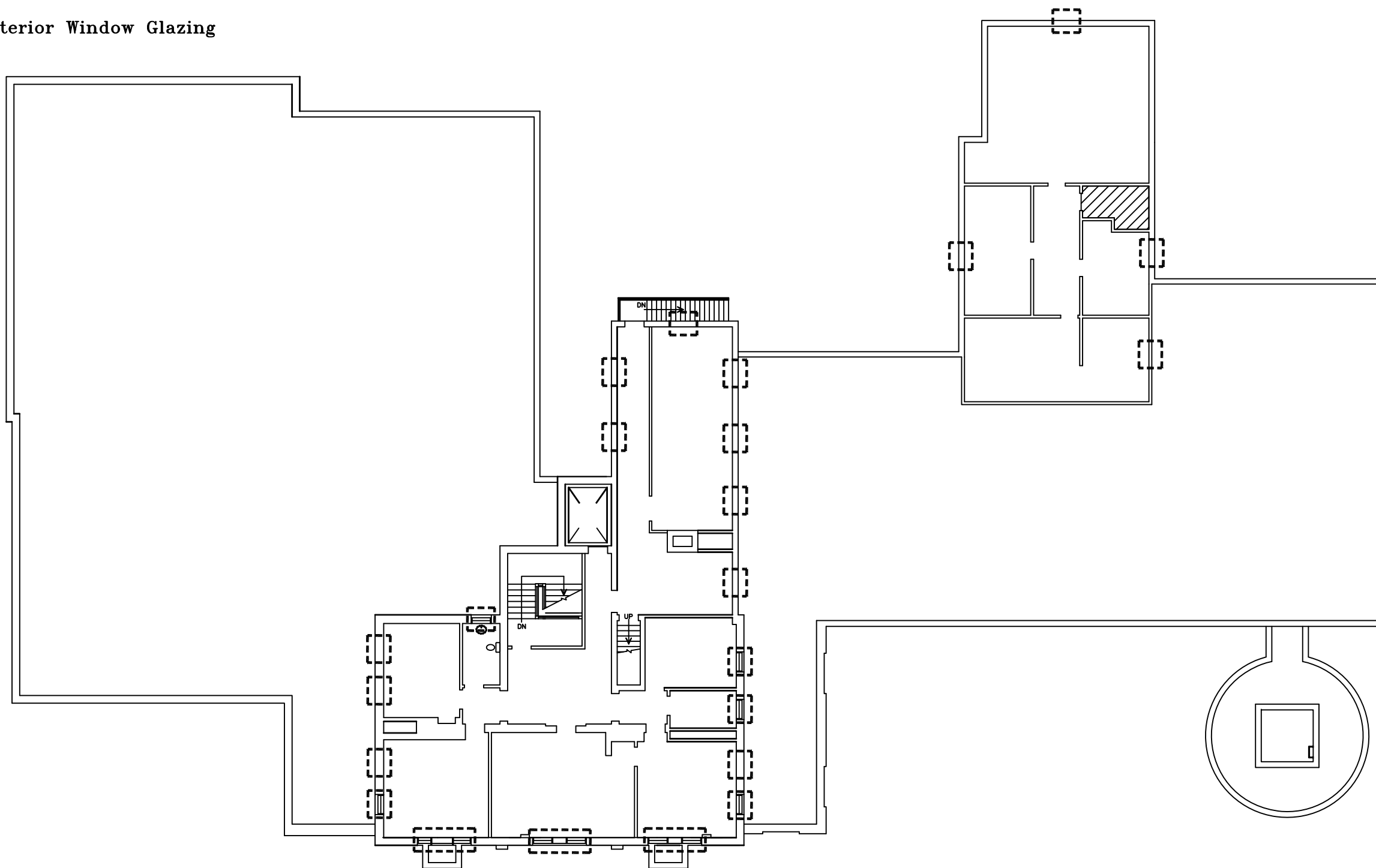
F&ME CONSULTANTS		HOMOGENEOUS AREA PLAN FUTURE USC LAW SCHOOL - BLD. #028 - 1ST FLOOR COLUMBIA, SOUTH CAROLINA	
UNIVERSITY OF SOUTH CAROLINA		DRAWN BY: <u>MSM</u> CHECKED BY: <u>JLS</u> APPROVED BY: <u>GME</u>	SCALE: <u>1"=20'</u> PROJECT: <u>E5300.03</u> FIGURE: <u>12</u>



HA-8 - 9" X 9" Black Floor Tile



HA-11 - Exterior Window Glazing



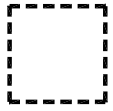
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HOMOGENEOUS AREA PLAN
FUTURE USC LAW SCHOOL - BLD. #028 - 2ND FLOOR
COLUMBIA, SOUTH CAROLINA

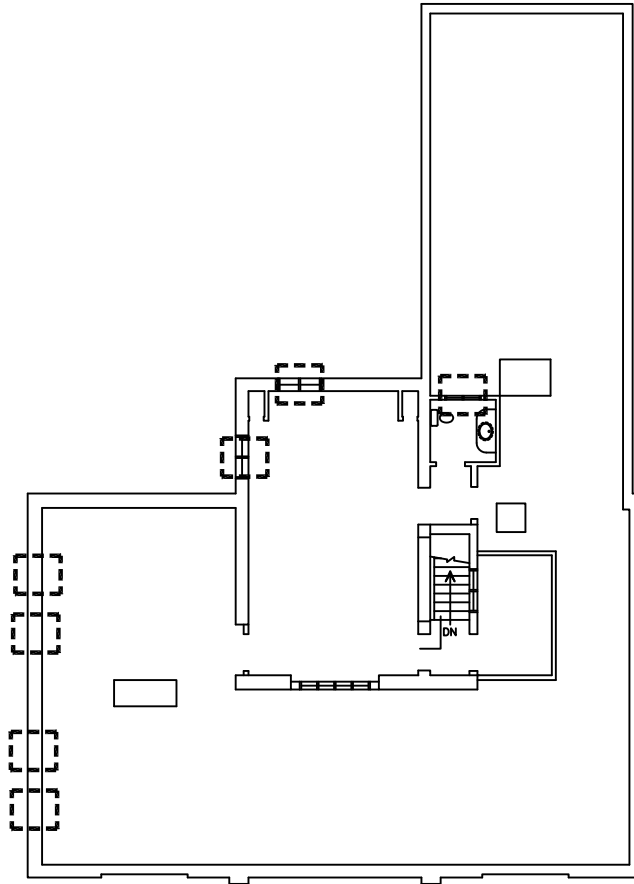
UNIVERSITY OF SOUTH CAROLINA

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APPROVED BY: GME

SCALE: 1"=20'
PROJECT: E5300.03
FIGURE: 13



HA-11 - Exterior Window Glazing



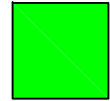
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HOMOGENEOUS AREA PLAN
FUTURE USC LAW SCHOOL - BLD. #028 - 3RD FLOOR
COLUMBIA, SOUTH CAROLINA

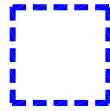
UNIVERSITY OF SOUTH CAROLINA

DRAWN BY: MSM
CHECKED BY: JLS
APPROVED BY: GME

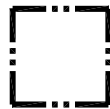
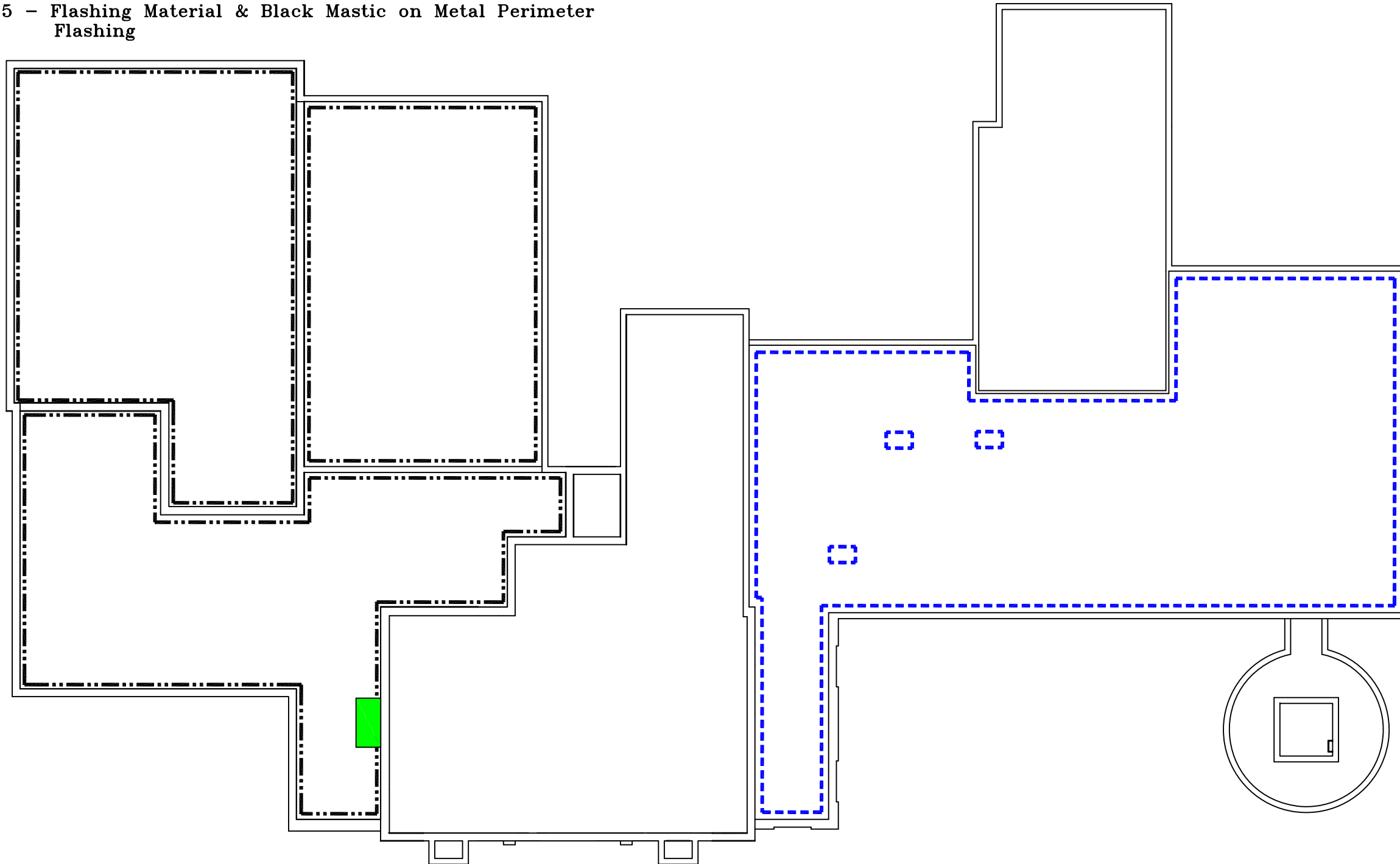
SCALE: 1"=20'
PROJECT: E5300.03
FIGURE: 14



HA-13 - Black HVAC Mastic



HA-14/HA-15 - Flashing Material & Black Mastic on Metal Perimeter Flashing



HA-16 - Black Flashing Mastic

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HOMOGENEOUS AREA PLAN
FUTURE USC LAW SCHOOL - BLD. #028 -ROOF
COLUMBIA, SOUTH CAROLINA

UNIVERSITY OF SOUTH CAROLINA

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APPROVED BY:	GME

SCALE:	1"=20'
PROJECT:	E5300.03
FIGURE:	15

APPENDIX B

Summary of Samples (Table I)

Summary of Asbestos Containing Materials (Table II)

Summary of Inspection

Physical Assessment Data Sheets

Bulk Asbestos Analytical Reports

Chain of Custody

TABLE I. SUMMARY OF SAMPLES

Sample ID	Sample Description	Sample Area
B028-1	Drywall/Joint Compound	Original Structure
B028-2	Drywall/Joint Compound	Original Structure
B028-3	Drywall/Joint Compound	Original Structure
B028-4	Drywall/Joint Compound	Original Structure
B028-5	Drywall/Joint Compound	Original Structure
B028-6	Drywall/Joint Compound	Original Structure
B028-7	Drywall/Joint Compound	Original Structure
B028-8	Plaster (Both Coats)	Original Structure
B028-9	Plaster (Both Coats)	Original Structure
B028-10	Plaster (Both Coats)	Original Structure
B028-11	Plaster (Both Coats)	Original Structure
B028-12	Plaster (Both Coats)	Original Structure
B028-13	Plaster (Both Coats)	Original Structure
B028-14	Plaster (Both Coats)	Original Structure
B028-15	9" x 9" Tan w/Brown Floor Tile & Mastic	Original Structure
B028-16	9" x 9" Tan w/Brown Floor Tile & Mastic	Original Structure
B028-17	9" x 9" Tan w/Brown Floor Tile & Mastic	Original Structure
B028-18	Plaster Wall Panels	Original Structure
B028-19	Plaster Wall Panels	Original Structure
B028-20	Plaster Wall Panels	Original Structure
B028-21	2' x 2' Small/Medium Pinhole Ceiling Panels	West Wing
B028-22	2' x 2' Small/Medium Pinhole Ceiling Panels	West Wing
B028-23	2' x 2' Small/Medium Pinhole Ceiling Panels	West Wing
B028-24	2' x 4' Wavy Pattern Ceiling Panels	West Wing
B028-25	2' x 4' Wavy Pattern Ceiling Panels	West Wing
B028-26	2' x 4' Wavy Pattern Ceiling Panels	West Wing
B028-27	White Mastic on Fiberglass Duct Insulation	West Wing
B028-28	White Mastic on Fiberglass Duct Insulation	West Wing
B028-29	White Mastic on Fiberglass Duct Insulation	West Wing
B028-30	Fiberglass Duct Wrap	West Wing
B028-31	Fiberglass Duct Wrap	West Wing
B028-32	Fiberglass Duct Wrap	West Wing
B028-33	Baseboard Adhesive	West Wing
B028-34	Baseboard Adhesive	West Wing
B028-35	Baseboard Adhesive	West Wing
B028-36	Carpet Adhesive	West Wing
B028-37	Carpet Adhesive	West Wing
B028-38	Carpet Adhesive	West Wing
B028-39	Black Mastic on Fiberglass Duct Wrap	West Wing

TABLE I

TABLE I. SUMMARY OF SAMPLES

Sample ID	Sample Description	Sample Area
B028-40	Black Mastic on Fiberglass Duct Wrap	West Wing
B028-41	Black Mastic on Fiberglass Duct Wrap	West Wing
B028-42	Rough Ceiling Texture	West Wing
B028-43	Rough Ceiling Texture	West Wing
B028-44	Rough Ceiling Texture	West Wing
B028-45	Plaster (Both Coats)	West Wing
B028-46	Plaster (Both Coats)	West Wing
B028-47	Plaster (Both Coats)	West Wing
B028-48	Ceiling Skim Coat	West Wing
B028-49	Ceiling Skim Coat	West Wing
B028-50	Ceiling Skim Coat	West Wing
B028-51	18" x 36" Tan Floor Tile & Mastic	West Wing
B028-52	18" x 36" Tan Floor Tile & Mastic	West Wing
B028-53	18" x 36" Tan Floor Tile & Mastic	West Wing
B028-54	Drywall/Joint Compound	West Wing
B028-55	Drywall/Joint Compound	West Wing
B028-56	Drywall/Joint Compound	West Wing
B028-57	Drywall/Joint Compound	West Wing
B028-58	Drywall/Joint Compound	West Wing
B028-59	Drywall/Joint Compound	West Wing
B028-60	Drywall/Joint Compound	West Wing
B028-61	2' x 2' Wavy Pattern Ceiling Panels	West Wing
B028-62	2' x 2' Wavy Pattern Ceiling Panels	West Wing
B028-63	2' x 2' Wavy Pattern Ceiling Panels	West Wing
B028-64	Interior Gray Window Caulk	West Wing
B028-65	Interior Gray Window Caulk	West Wing
B028-66	Interior Gray Window Caulk	West Wing
B028-67	Off-White Vinyl Flooring	Original Structure
B028-68	Off-White Vinyl Flooring	Original Structure
B028-69	Off-White Vinyl Flooring	Original Structure
B028-70	TSI Pipe Insulation (Aircell)	Original Structure
B028-71	Drywall/Joint Compound	East Wing
B028-72	Drywall/Joint Compound	East Wing
B028-73	Drywall/Joint Compound	East Wing
B028-74	Drywall/Joint Compound	East Wing
B028-75	Drywall/Joint Compound	East Wing
B028-76	Not Used	East Wing
B028-77	Not Used	East Wing
B028-78	Plaster (Both Coats)	East Wing

TABLE I

TABLE I. SUMMARY OF SAMPLES

Sample ID	Sample Description	Sample Area
B028-79	Plaster (Both Coats)	East Wing
B028-80	Plaster (Both Coats)	East Wing
B028-81	Plaster (Both Coats)	East Wing
B028-82	Plaster (Both Coats)	East Wing
B028-83	Not Used	East Wing
B028-84	Not Used	East Wing
B028-85	Carpet Adhesive	East Wing
B028-86	Carpet Adhesive	East Wing
B028-87	Carpet Adhesive	East Wing
B028-88	Baseboard Adhesive	East Wing
B028-89	Baseboard Adhesive	East Wing
B028-90	Baseboard Adhesive	East Wing
B028-91	2' x 2' Small/Medium Pinhole Ceiling Panels	East Wing
B028-92	2' x 2' Small/Medium Pinhole Ceiling Panels	East Wing
B028-93	2' x 2' Small/Medium Pinhole Ceiling Panels	East Wing
B028-94	Light Ceiling Texture	East Wing
B028-95	Light Ceiling Texture	East Wing
B028-96	Light Ceiling Texture	East Wing
B028-97	12" x 12" Tan Floor Tile & Mastic	Carriage House
B028-98	12" x 12" Tan Floor Tile & Mastic	Carriage House
B028-99	12" x 12" Tan Floor Tile & Mastic	Carriage House
B028-100	Spray-Applied Ceiling Texture	East Wing
B028-101	Spray-Applied Ceiling Texture	East Wing
B028-101A	Spray-Applied Ceiling Texture	East Wing
B028-102	Spray-Applied Ceiling Texture	East Wing
B028-102A	Spray-Applied Ceiling Texture	East Wing
B028-103	White Mastic on Fiberglass Ducts	East Wing
B028-104	White Mastic on Fiberglass Ducts	East Wing
B028-105	White Mastic on Fiberglass Ducts	East Wing
B028-106	Gray Mastic on Fiberglass Ducts	Carriage House
B028-107	Gray Mastic on Fiberglass Ducts	Carriage House
B028-108	Gray Mastic on Fiberglass Ducts	Carriage House
B028-109	Black Mastic on Fiberglass Ducts	East Wing
B028-110	Black Mastic on Fiberglass Ducts	East Wing
B028-111	Black Mastic on Fiberglass Ducts	East Wing
B028-112	12" x 12" Textured Ceiling Panels	East Wing
B028-113	12" x 12" Textured Ceiling Panels	East Wing
B028-114	12" x 12" Textured Ceiling Panels	East Wing
B028-115	Mudded Elbow on Fiberglass Insulated Line	East Wing

TABLE I

TABLE I. SUMMARY OF SAMPLES

Sample ID	Sample Description	Sample Area
B028-116	Mudded Elbow on Fiberglass Insulated Line	East Wing
B028-117	Mudded Elbow on Fiberglass Insulated Line	East Wing
B028-118	TSI Pipe Run (Block)	East Wing
B028-119	TSI Pipe Run (Block)	East Wing
B028-120	TSI Pipe Run (Block)	East Wing
B028-121	12" x 12" Tan Floor Tile & Mastic	East Wing
B028-122	12" x 12" Tan Floor Tile & Mastic	East Wing
B028-123	12" x 12" Tan Floor Tile & Mastic	East Wing
B028-124	Baseboard Adhesive	Carriage House
B028-125	Baseboard Adhesive	Carriage House
B028-126	Baseboard Adhesive	Carriage House
B028-127	Carpet Adhesive	Carriage House
B028-128	Carpet Adhesive	Carriage House
B028-129	Carpet Adhesive	Carriage House
B028-130	Drywall/Joint Compound	Carriage House
B028-131	Drywall/Joint Compound	Carriage House
B028-132	Drywall/Joint Compound	Carriage House
B028-133	Drywall/Joint Compound	Carriage House
B028-134	Drywall/Joint Compound	Carriage House
B028-135	Spray-Applied Ceiling Texture	Carriage House
B028-136	Spray-Applied Ceiling Texture	Carriage House
B028-137	Spray-Applied Ceiling Texture	Carriage House
B028-138	Spray-Applied Ceiling Texture	Carriage House
B028-139	Spray-Applied Ceiling Texture	Carriage House
B028-140	9" x 9" Black Floor Tile/Mastic/Felt	Carriage House
B028-141	9" x 9" Black Floor Tile/Mastic/Felt	Carriage House
B028-142	9" x 9" Black Floor Tile/Mastic/Felt	Carriage House
B028-143	White Mastic on Fiberglass Pipe Insulation	Original Structure
B028-144	White Mastic on Fiberglass Pipe Insulation	Original Structure
B028-145	White Mastic on Fiberglass Pipe Insulation	Original Structure
B028-146	Gray Mastic on Fiberglass Duct Insulation	Original Structure
B028-147	Gray Mastic on Fiberglass Duct Insulation	Original Structure
B028-148	Gray Mastic on Fiberglass Duct Insulation	Original Structure
B028-149	Mudded Elbow on Air Cell Insulated Line	Original Structure
B028-150	Mudded Elbow on Air Cell Insulated Line	Original Structure
B028-151	Mudded Elbow on Block Insulated Line	Original Structure
B028-152	Mudded Elbow on Fiberglass Insulated Line	Original Structure
B028-153	Mudded Elbow on Fiberglass Insulated Line	Original Structure
B028-154	TSI Pipe Run (Block)	Original Structure

TABLE I

TABLE I. SUMMARY OF SAMPLES

Sample ID	Sample Description	Sample Area
B028-155	TSI Pipe Run (Block)	Original Structure
B028-156	Aircell Insulation	Original Structure
B028-157	Troweled Ceiling Texture	Original Structure
B028-158	Troweled Ceiling Texture	Original Structure
B028-159	Troweled Ceiling Texture	Original Structure
B028-160	Troweled Ceiling Texture	Original Structure
B028-161	Troweled Ceiling Texture	Original Structure
B028-162	White Mastic on Fiberglass Pipe Insulation	Original Structure
B028-163	White Mastic on Fiberglass Pipe Insulation	Original Structure
B028-164	White Mastic on Fiberglass Pipe Insulation	Original Structure
B028-165	Fiberglass Pipe Wrap	Original Structure
B028-166	Fiberglass Pipe Wrap	Original Structure
B028-167	Fiberglass Pipe Wrap	Original Structure
B028-168	Kiln #1 TSI	Room 014
B028-169	Kiln #1 TSI	Room 014
B028-170	Kiln #1 TSI	Room 014
B028-171	Kiln Room Ceiling Felt	Room 014
B028-172	Kiln Room Ceiling Felt	Room 014
B028-173	Kiln Room Ceiling Felt	Room 014
B028-174	Kiln #1 Electrical Wiring	Room 014
B028-175	Kiln #1 Electrical Wiring	Room 014
B028-176	Kiln #1 Electrical Wiring	Room 014
B028-177	Gray/Tan Vinyl Flooring	Original Structure
B028-178	Gray/Tan Vinyl Flooring	Original Structure
B028-179	Gray/Tan Vinyl Flooring	Original Structure
B028-180	Gray Mastic on Metal Duct	East – Crawl Space
B028-181	Gray Mastic on Metal Duct	East – Crawl Space
B028-182	Gray Mastic on Metal Duct	East – Crawl Space
B028-183	Mudded Elbow in Fiberglass Insulated Line	East – Crawl Space
B028-184	Black Moisture Sealant	East – Crawl Space
B028-185	Black Moisture Sealant	East – Crawl Space
B028-186	Black Moisture Sealant	East – Crawl Space
B028-187	Exterior Window Glazing	Exterior Bld. #028
B028-188	Exterior Window Glazing	Exterior Bld. #028
B028-189	Exterior Window Glazing	Exterior Bld. #028
B028-190	Gray Exterior Caulking	Exterior Bld. #028
B028-191	Gray Exterior Caulking	Exterior Bld. #028
B028-192	Gray Exterior Caulking	Exterior Bld. #028
B028-193	Built-Up Roofing Material	West Wing

TABLE I

TABLE I. SUMMARY OF SAMPLES

Sample ID	Sample Description	Sample Area
B028-194	Built-Up Roofing Material	West Wing
B028-195	Built-Up Roofing Material	West Wing
B028-196	Flashing Material	West Wing
B028-197	Flashing Material	West Wing
B028-198	Flashing Material	West Wing
B028-199	Gray Flashing Caulk	West Wing
B028-200	Gray Flashing Caulk	West Wing
B028-201	Gray Flashing Caulk	West Wing
B028-202	Exterior Black HVAC Mastic	West Wing
B028-203	Exterior Black HVAC Mastic	West Wing
B028-204	Exterior Black HVAC Mastic	West Wing
B028-205	Built-Up Roofing Material	East Wing
B028-206	Built-Up Roofing Material	East Wing
B028-207	Built-Up Roofing Material	East Wing
B028-208	Flashing Material	East Wing
B028-209	Flashing Material	East Wing
B028-210	Flashing Material	East Wing
B028-211	Black Roof Mastic	East Wing
B028-212	Black Roof Mastic	East Wing
B028-213	Black Roof Mastic	East Wing
B028-214	Roofing Shingle	Original Structure
B028-215	Roofing Shingle	Original Structure
B028-216	Roofing Shingle	Original Structure
B028-217	Roofing Felt	Original Structure
B028-218	Roofing Felt	Original Structure
B028-219	Roofing Felt	Original Structure
B028-220	Black Roofing Mastic	Original Structure
B028-221	Black Roofing Mastic	Original Structure
B028-222	Black Roofing Mastic	Original Structure
B028-223	White Roofing Caulk	Original Structure
B028-224	White Roofing Caulk	Original Structure
B028-225	White Roofing Caulk	Original Structure
B028-226	Roof Access Door Coating	Original Structure
B028-227	Roof Access Door Coating	Original Structure
B028-228	Roof Access Door Coating	Original Structure
B028-229	Flashing Mastic	Original Structure
B028-230	Flashing Mastic	Original Structure
B028-231	Flashing Mastic	Original Structure

TABLE I

TABLE II. SUMMARY OF ASBESTOS CONTAINING MATERIALS

Sample ID	Sample Description	% Asbestos
B028-39	Black Mastic on Fiberglass Duct Wrap	8% Chrysotile
B028-40	Black Mastic on Fiberglass Duct Wrap	First Positive Stop
B028-41	Black Mastic on Fiberglass Duct Wrap	First Positive Stop
B028-70	TSI Pipe Insulation (Aircell)	80% Chrysotile
B028-75	Joint Compound	3% Chrysotile
B028-78	Plaster	3% Chrysotile
B028-79	Plaster	3% Chrysotile
B028-80	Plaster	2% Chrysotile
B028-81	Plaster	3% Chrysotile
B028-82	Plaster	3% Chrysotile
B028-100	Spray-Applied Ceiling Texture	5% Chrysotile
B028-101	Spray-Applied Ceiling Texture	First Positive Stop
B028-101A	Spray-Applied Ceiling Texture	First Positive Stop
B028-102	Spray-Applied Ceiling Texture	First Positive Stop
B028-102A	Spray-Applied Ceiling Texture	First Positive Stop
B028-109	Black Mastic on Fiberglass Duct Wrap	8% Chrysotile
B028-110	Black Mastic on Fiberglass Duct Wrap	First Positive Stop
B028-111	Black Mastic on Fiberglass Duct Wrap	First Positive Stop
B028-118	TSI Pipe Run (Block)	15% Amosite
		2% Chrysotile
B028-119	TSI Pipe Run (Block)	First Positive Stop
B028-120	TSI Pipe Run (Block)	First Positive Stop
B028-140	9" x 9" Black Floor Tile	5% Chrysotile
B028-141	9" x 9" Black Floor Tile	First Positive Stop
B028-142	9" x 9" Black Floor Tile	First Positive Stop
B028-149	Mudded Elbow on Aircell Insulated Line	5% Chrysotile
B028-150	Mudded Elbow on Aircell Insulated Line	First Positive Stop
B028-151	Mudded Elbow on Block Insulated Line	20% Chrysotile
B028-154	TSI Pipe Run (Block)	3% Chrysotile
B028-155	TSI Pipe Run (Block)	First Positive Stop
B028-156	Aircell Pipe Insulation	90% Chrysotile
B028-165	Fiberglass Pipe Wrap	15% Chrysotile
B028-166	Fiberglass Pipe Wrap	First Positive Stop
B028-167	Fiberglass Pipe Wrap	First Positive Stop
B028-168	Kiln #1 TSI	10% Chrysotile
B028-169	Kiln #1 TSI	First Positive Stop

TABLE II

TABLE II. SUMMARY OF ASBESTOS CONTAINING MATERIALS

Sample ID	Sample Description	% Asbestos
B028-170	Kiln #1 TSI	First Positive Stop
B028-174	Kiln #1 Electrical Wiring	95% Chrysotile
B028-175	Kiln #1 Electrical Wiring	First Positive Stop
B028-176	Kiln #1 Electrical Wiring	First Positive Stop
B028-187	Exterior Window Glazing	3% Chrysotile
B028-188	Exterior Window Glazing	First Positive Stop
B028-189	Exterior Window Glazing	First Positive Stop
B028-191	Exterior Gray Caulking	10% Chrysotile
B028-192	Exterior Gray Caulking	First Positive Stop
B028-202	Exterior Black HVAC Mastic	15% Chrysotile
B028-203	Exterior Black HVAC Mastic	First Positive Stop
B028-204	Exterior Black HVAC Mastic	First Positive Stop
B028-208	Flashing Material (East Wing)	20% Chrysotile
B028-209	Flashing Material (East Wing)	First Positive Stop
B028-210	Flashing Material (East Wing)	First Positive Stop
B028-211	Black Roofing Mastic	5% Chrysotile
B028-212	Black Roofing Mastic	First Positive Stop
B028-213	Black Roofing Mastic	First Positive Stop
B028-229	Flashing Mastic (Original Structure)	20% Chrysotile
B028-230	Flashing Mastic (Original Structure)	First Positive Stop
B028-231	Flashing Mastic (Original Structure)	First Positive Stop

TABLE II

SUMMARY OF INSPECTION

The following tables summarize the physical assessment data, sampling and assessment results.

As exhibited on these tables, coding is used to abbreviate the asbestos containing materials' (ACM) locations, characteristics and results. These codes are as follows:

TYPES OF ACM:

Misc. = Miscellaneous

Sur. = Surfacing

TSI = Thermal System Insulation

ACM LOCATIONS:

Homogeneous areas = Indicated by Roman Numerals, Room Number or Area Designation

<u>Functional Space No.:</u>	<u>Functional Space Type:</u>
1.	R = Room
2.	C = Ceiling
3.	K = Kitchenette
4.	B = Basement
5.	W = Windows
6.	E = Exterior
7.	R = Roof
8.	H = Hallway

ACM CHARACTERISTICS:

F = Friable

NF = Non-Friable

ASSESSMENT RESULTS:

(Refer to Physical Assessment Data)

POTENTIAL FOR DISTURBANCE:

(Refer to Physical Assessment Data)

PHYSICAL ASSESSMENT CATAGORIES:

1. Damaged or significantly damaged friable thermal system insulation ACM.
2. Damaged friable surfacing ACM.
3. Significantly damaged friable surfacing ACM.
4. Damaged or significantly damaged friable miscellaneous ACM.
5. ACM with potential for significant damage.
6. ACM with potential for damage.
7. Any remaining friable ACM or friable suspect ACM.
8. Non-friable ACM.

CLASSIFICATION FOR HAZARD POTENTIAL:

(Tabular Display)

<u>Hazard Rank</u>	<u>ACM Condition</u>	<u>ACM Disturbance Potential</u>
7	Significantly Damaged	Any
6	Damaged	Potential for Significant Damage
5	Damaged	Potential for Damage
4	Damaged	Low
3	Good	Potential for Significant Damage
2	Good	Potential for Damage
1	Good	Low

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 1, 8 **Type:** R, H **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.**

Description: HA-1, Black Mastic on Fiberglass Duct Wrap

Approximate Amount of Material (SF or LF): ~50 S.F.

Condition:

Percent Damage: X >0% <10% >10% <25% >25%

Extent of Damage : Localized X Distributed

Type of Damage: X Deterioration Water Physical

Description:

Metal HVAC ductwork with fiberglass duct wrap insulation was observed in the east and west wings. Asbestos-containing black mastic was used to seal the seams of the fiberglass duct wrap in hallways H102, H104, H105 of the west wing and in room 133 of the east wing. This material appears to be intact and is in a non-friable condition.

Overall Condition Rating: Sig. Damaged Damaged Good X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	<u> </u>	<u> </u>	<u>X</u>	<u> </u>
Influence of Vibration	<u> </u>	<u> </u>	<u>X</u>	<u> </u>
Frequency of Air Erosion	<u> </u>	<u> </u>	<u>X</u>	<u> </u>
Potential of Water Erosion	<u> </u>	<u> </u>	<u>X</u>	<u> </u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
<u> </u>	<u> </u>	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
<u> </u>	<u> </u>	<u> </u>	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 3, 4 **Type:** K, B **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: X **TSI** **Surfacing** **Misc.**

Description: HA-2, Aircell Pipe Insulation

Approximate Amount of Material (SF or LF): ~100 L.F.

Condition:

Percent Damage: >0% X <10% >10% <25% >25%

Extent of Damage : Localized X Distributed

Type of Damage: X Deterioration X Water X Physical

Description:

The Aircell TSI insulation is located at the south wall of room 125 on the first floor below the existing ceiling and in the basement of the original portion of the building structure. Due to limited access to the wall cavities and lack of original construction drawings, it is difficult to clearly delineate the exact location and estimated quantity of this material. Therefore, unless otherwise determined, it is assumed that this material exists throughout the exterior wall cavities, above hard ceilings and within pipe chases. This material was observed to be in an intact but friable condition. Some evidence of deterioration was noted due to the age of the material.

Overall Condition Rating: Sig. Damaged Damaged Good X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	<u> </u>	<u> </u>	<u> X </u>	<u> X </u>
Influence of Vibration	<u> </u>	<u> </u>	<u> X </u>	<u> X </u>
Frequency of Air Erosion	<u> </u>	<u> </u>	<u> X </u>	<u> X </u>
Potential of Water Erosion	<u> </u>	<u> </u>	<u> X </u>	<u> X </u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
<u> </u>	<u> </u>	<u> 7 </u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
<u> </u>	<u> </u>	<u> </u>	<u> 1 </u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Murray **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 1, 8 **Type:** R, H **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI X **Surfacing** Misc.

Description: HA-3, Joint Compound

Approximate Amount of Material (SF or LF): ~4,000 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized X Distributed

Type of Damage: X Deterioration X Water X Physical

Description:

The joint compound is located on the drywall walls of the east wing of the building. A total of five (5) drywall/joint compound samples were taken in various rooms throughout this area of the building. A review of the analytical results indicates that only one (1) of the drywall/joint compound samples tested positive for asbestos. Per the regulations and for the purposes of this report, drywall/joint compound throughout the east wing of the building is deemed positive for asbestos content. However, the analytical data indicate that both positive and negative drywall/joint compound is present in this area of the building. Therefore, additional sampling may be warranted to isolate the positive material from the negative. It should be noted that overall the drywall joint compound throughout the east wing is intact and in a good condition. However, the joint compound seams are exposed above the suspended ceiling and in the instance would be deemed friable.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>7/8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Murray **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 2 **Type:** C **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI X **Surfacing** _____ **Misc.** _____

Description: HA-4, Plaster Ceiling (East Wing)

Approximate Amount of Material (SF or LF): ~1,200 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized X Distributed

Type of Damage: X Deterioration X Water _____ Physical

Description:

Asbestos-containing plaster ceilings are located above the existing suspended ceiling grid in rooms 135, 137 and 138 of the east wing. The exposed surfaces are also coated in an asbestos-containing spray-applied ceiling texture. Both materials appear to be intact and however the texturing is in a friable condition. Some localized damage was noted.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>_____</u>
Influence of Vibration	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>_____</u>
Frequency of Air Erosion	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>_____</u>
Potential of Water Erosion	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>_____</u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
<u>_____</u>	<u>_____</u>	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 2 **Type:** C **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI X **Surfacing** _____ **Misc.** _____

Description: HA-5, Spray-Applied Ceiling Texture (East Wing)

Approximate Amount of Material (SF or LF): ~1,200 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized X Distributed

Type of Damage: X Deterioration X Water _____ Physical

Description:

Asbestos-containing spray-applied ceiling texture was found on the plaster ceilings in rooms 135, 137 and 138 of the east wing. Overall, this material appears to be intact and is in a friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>X</u>
Influence of Vibration	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>X</u>
Frequency of Air Erosion	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>X</u>
Potential of Water Erosion	<u>_____</u>	<u>_____</u>	<u>X</u>	<u>X</u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
<u>_____</u>	<u>_____</u>	<u>7</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 3, 4 **Type:** B, K **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: X **TSI** _____ **Surfacing** _____ **Misc.** _____

Description: HA-6, TSI Pipe Insulation (Block)

Approximate Amount of Material (SF or LF): ~800 L.F.

Condition:

Percent Damage: _____ >0% X <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

Asbestos-containing block TSI pipe insulation was noted in the area of the basement associated with the original house and above the ceiling in room 139 of the east wing. Due to limited access to the wall cavities and lack of original construction drawings for both the original house and the east wing, it is difficult to clearly delineate the exact location and to estimate the quantity of this ACM. During demolition and/ or renovation activities, there is potential for asbestos-containing TSI to be uncovered in exterior wall cavities, above hard ceilings and within pipe chases. This material appears to be intact and is in a friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	<u>X</u>
Influence of Vibration	_____	_____	<u>X</u>	<u>X</u>
Frequency of Air Erosion	_____	_____	<u>X</u>	<u>X</u>
Potential of Water Erosion	_____	_____	<u>X</u>	<u>X</u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>7</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Menay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 3, 4 **Type:** B, K **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: X **TSI** _____ **Surfacing** _____ **Misc.** _____

Description: HA-7, Mudded Elbows

Approximate Amount of Material (SF or LF): ~80 Mudded Elbows

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ **Localized** _____ X **Distributed**

Type of Damage: X **Deterioration** _____ X **Water** _____ **Physical**

Description:

Mudded elbows were found on the joints of all three (3) types of pipe insulation in the basement of the original structure and above the ceiling in room 139 of the east wing. Mudded elbows associated with the Aircell, asbestos-containing block and non-ACM fiberglass insulations were sampled independently of each other. Laboratory results indicate that the mudded elbows associated with the Aircell- and ACM block-insulated lines are also ACM, while the elbows associated with the non-ACM fiberglass-insulated pipe lines were found to be non-ACM. However, because of the potential for variability in the types of materials used for the mudded elbows, it is prudent to handle all mudded elbows as ACM. This material appears to be intact and is in a friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	<u>X</u>
Influence of Vibration	_____	_____	<u>X</u>	<u>X</u>
Frequency of Air Erosion	_____	_____	<u>X</u>	<u>X</u>
Potential of Water Erosion	_____	_____	<u>X</u>	<u>X</u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>7</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Mency **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 1 **Type:** R **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-8, 9" x 9" Black Floor Tiles

Approximate Amount of Material (SF or LF): ~80 S.F.

Condition:

Percent Damage: _____ >0% _____ <10% X >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: _____ X Deterioration _____ X Water _____ X Physical

Description:

Asbestos-containing 9" x 9" black floor tiles were identified under the existing carpet in room 205 of the carriage house. During bulk sample collection of the floor tiles and associated mastic, a layer of felt paper was also identified. Both the black floor tile mastic and the underlying felt paper were found to be negative for asbestos. The asbestos-containing floor tiles are intact but show evidence of a significant amount of deterioration due to its age. It is difficult to assess the overall condition due to the carpeting. Furthermore, the tiles were noted to be very brittle during bulk sample collection, indicating that removal of the overlying non-ACM carpet which is glued down will need to be performed under full containment due to the high potential for breakage of the tiles.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ X Good _____

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Mincay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 4 **Type:** B **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-9, Pipe Wrap on Fiberglass Insulation

Approximate Amount of Material (SF or LF): ~40 L.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

The majority of fiberglass pipe insulation observed in the subject structure was considered to be a non-suspect material. However, fiberglass pipe insulation found in the basement of the original building structure had a wrap that was found to contain a layer of asbestos-containing black mastic. This ACM is on a section of pipe located on the south end of the basement and appears to be intact and in a non-friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 1 Type: R Location: (See Homogeneous Area Plan)

Type of Suspect Material: X TSI Surfacing Misc.

Description: HA-10, Kiln #1 TSI and Electrical Wiring

Approximate Amount of Material (SF or LF): ~80 S.F.

Condition:

Percent Damage: >0% <10% >10% <25% X >25%

Extent of Damage : Localized X Distributed

Type of Damage: X Deterioration X Water X Physical

Description:

The investigation identified an abandoned kiln located in the basement of the east wing (Room 014) which is in the former Carriage House of the original structure. The kiln was insulated with an asbestos-containing jacketing on the exterior and also has asbestos-insulated wiring. The asbestos-containing electrical wiring was found on the rear of the kiln. The TSI is severely damaged, with visible debris observed on the ground, while the electrical wiring insulation appears to be intact but in poor condition. Both are in friable condition. These materials must be removed and disposed of as friable ACM by a licensed abatement contractor prior to demolition of the building. Additionally, the associated bricks and surrounding surface soils may need to be abated due to contamination.

Overall Condition Rating: Sig. Damaged X Damaged Good

Potential for Disturbance:

Table with 4 columns: High, Moderate, Low, Friable ACM. Rows include Frequency of Potential Contact, Influence of Vibration, Frequency of Air Erosion, and Potential of Water Erosion.

Overall Potential Disturbance Rating:

Potential for Sig. Damage: 1 Potential for Damage: Low Potential for Damage

Overall Hazard Rank #:

Sig. Damaged: 7 Pot. Sig. Damage: Potential Damage: Low Pot. Damage:

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Mike M... (handwritten signature)

Signed: Date: 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 6 **Type:** E **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-11, Exterior Window Glazing

Approximate Amount of Material (SF or LF): ~41 Window Units

Condition:

Percent Damage: _____ >0% _____ <10% _____ >10% X <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: _____ X Deterioration _____ X Water _____ Physical

Description:

Asbestos-containing window glazing was found on forty-one (41) exterior windows associated with the subject structure. This material was observed to be damaged with obvious deterioration due to weathering, which has rendered it friable in some areas. Furthermore, evidence of delamination was observed, as window glazing debris has accumulated on some of the window sills. The window units vary in size and are located around the perimeter of the original house on the first through third floors, on the second floor of the carriage house, on the north side of the east wing and on the east side of the west wing.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ X Good _____

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	<u>X</u>
Influence of Vibration	_____	_____	<u>X</u>	<u>X</u>
Frequency of Air Erosion	_____	_____	<u>X</u>	<u>X</u>
Potential of Water Erosion	_____	_____	<u>X</u>	<u>X</u>

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>7</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>4</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Mincey **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 6 **Type:** E **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-12, Exterior Gray Caulking

Approximate Amount of Material (SF or LF): ~1 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

The exterior gray caulking is located around the metal access door to the crawlspace beneath the west wing. This non-friable material appears to be intact and in good condition.

Overall Condition Rating: _____ Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 7 **Type:** R **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-13, Exterior Black HVAC Mastic

Approximate Amount of Material (SF or LF): ~5 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

Exterior HVAC ductwork was found on the roof of the west wing. This ductwork supplies the second floor of the original house and is insulated with fiberglass. Asbestos-containing HVAC mastic was used to seal the seams of the duct insulation. This material appears to be in an intact non-friable condition but shows evidence of deterioration from exposure to the elements.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Mency **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 7 **Type:** R **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-14, Flashing Material

Approximate Amount of Material (SF or LF): ~860 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

The perimeter of the east wing's roof is surrounded by a parapet wall. Asbestos-containing flashing material was found along the entire length of this wall. This material appears to be intact and in a good, non-friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 7 **Type:** R **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-15, Black Roofing Mastic

Approximate Amount of Material (SF or LF): ~50 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

Asbestos-containing black roofing mastic is located around roof penetrations and the parapet walls of the east wing roof. Overall, this material appears to be intact and is in good, non-friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013

PHYSICAL ASSESSMENT DATA SHEET



Building: USC Division of Law Enforcement & Safety building (#028)

Functional Space No: 7 **Type:** R **Location:** (See Homogeneous Area Plan)

Type of Suspect Material: TSI **Surfacing** X **Misc.** _____

Description: HA-16, Black Flashing Mastic

Approximate Amount of Material (SF or LF): ~20 S.F.

Condition:

Percent Damage: X >0% _____ <10% _____ >10% _____ <25% _____ >25%

Extent of Damage : _____ Localized _____ X Distributed

Type of Damage: X Deterioration _____ X Water _____ Physical

Description:

Asbestos-containing black roofing mastic is located around roof penetrations and on seams of the flashing material along the parapet walls of the west wing roof. Overall, this material appears to be intact and is in good, non-friable condition.

Overall Condition Rating: Sig. Damaged _____ Damaged _____ Good _____ X

Potential for Disturbance:

	High	Moderate	Low	Friable ACM
Frequency of Potential Contact:	_____	_____	<u>X</u>	_____
Influence of Vibration	_____	_____	<u>X</u>	_____
Frequency of Air Erosion	_____	_____	<u>X</u>	_____
Potential of Water Erosion	_____	_____	<u>X</u>	_____

Overall Potential Disturbance Rating:

Potential for Sig. Damage	Potential for Damage	Low Potential for Damage
_____	_____	<u>8</u>

Overall Hazard Rank #:

Sig. Damaged	Pot. Sig. Damage	Potential Damage	Low Pot. Damage
_____	_____	_____	<u>1</u>

Comments: Potential for Disturbance and Hazard Ranking assessed is based on current usage of the facility.

Signed: Mike Minay **Date:** 06/26/2013



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Received: 05/30/13 10:30 AM
Analysis Date: 6/17/2013
Collected:


Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-1-Drywall <i>021303259-0001</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	8% Cellulose	92% Non-fibrous (other)	None Detected
B028-1-Joint Compound <i>021303259-0001A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-1-Tape <i>021303259-0001B</i>	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-2-Drywall <i>021303259-0002</i>	Drywall/ Joint Compound	Brown/Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
B028-2-Joint Compound <i>021303259-0002A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-3 <i>021303259-0003</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-4-Drywall <i>021303259-0004</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (other)	None Detected

Analyst(s)

Nicole Shutts (136)
Scott Combs (102)


Stephen Bennett, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, Virginia 3333-000228, West Virginia LT000321

Report Amended: 06/17/2013 10:16:35 Replaces the Initial Report 06/03/2013 13:55:46. Reason Code: Client-Samples Added



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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-4-Joint Compound <i>021303259-0004A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-4-Tape <i>021303259-0004B</i>	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-5-Sheetrock <i>021303259-0005</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-5-Joint Compound <i>021303259-0005A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-6-Drywall <i>021303259-0006</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-6-Joint Compound <i>021303259-0006A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-6-Tape <i>021303259-0006B</i>	Drywall/ Joint Compound	Beige Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected

Analyst(s)

Nicole Shutts (136)

Scott Combs (102)

Stephen Bennett, Laboratory Manager
or other approved signatory

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-7-Drywall <i>021303259-0007</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-7-Joint Compound <i>021303259-0007A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-7-Tape <i>021303259-0007B</i>	Drywall/ Joint Compound	Beige Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
B028-8-Skim Coat <i>021303259-0008</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-8-Rough Coat <i>021303259-0008A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (other)	None Detected
B028-9-Skim Coat <i>021303259-0009</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-9-Rough Coat <i>021303259-0009A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose 1% Synthetic <1% Hair	99% Non-fibrous (other)	None Detected
B028-10-Skim Coat <i>021303259-0010</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

*Nicole Shutts (136)**Scott Combs (102)*Stephen Bennett, Laboratory Manager
or other approved signatory

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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-10-Rough Coat <i>021303259-0010A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (other)	None Detected
B028-11-Skim Coat <i>021303259-0011</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-11-Rough Coat <i>021303259-0011A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose 1% Hair <1% Synthetic	99% Non-fibrous (other)	None Detected
B028-12-Skim Coat <i>021303259-0012</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-12-Rough Coat <i>021303259-0012A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	1% Cellulose 2% Hair <1% Synthetic	97% Non-fibrous (other)	None Detected
B028-13-Skim Coat <i>021303259-0013</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-13-Rough Coat <i>021303259-0013A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	1% Hair <1% Cellulose	99% Non-fibrous (other)	None Detected

Analyst(s)

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 Scott Combs (102)


 Stephen Bennett, Laboratory Manager
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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-14-Skim Coat <i>021303259-0014</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-14-Rough Coat <i>021303259-0014A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	1% Hair <1% Cellulose	99% Non-fibrous (other)	None Detected
B028-15-Floor Tile <i>021303259-0015</i>	Floor Tile & Mastic	Brown/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-15-Mastic <i>021303259-0015A</i>	Floor Tile & Mastic	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-16-Floor Tile <i>021303259-0016</i>	Floor Tile & Mastic	Brown/Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
B028-16-Mastic <i>021303259-0016A</i>	Floor Tile & Mastic	Tan/Yellow Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
B028-18-Skim Coat <i>021303259-0017</i>	Plaster Wall Panels	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-18-Rough Coat <i>021303259-0017A</i>	Plaster Wall Panels	Gray/Tan Non-Fibrous Heterogeneous	1% Cellulose <1% Hair	99% Non-fibrous (other)	None Detected

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-19-Skim Coat <i>021303259-0018</i>	Plaster Wall Panels	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-19-Rough Coat <i>021303259-0018A</i>	Plaster Wall Panels	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose 1% Hair <1% Synthetic	99% Non-fibrous (other)	None Detected
B028-20 <i>021303259-0019</i>	Plaster Wall Panels	Gray/Tan Fibrous Heterogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (other)	None Detected
No Discernible Layers.					
B028-21 <i>021303259-0020</i>	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Cellulose 20% Min. Wool	40% Non-fibrous (other)	None Detected
B028-22 <i>021303259-0021</i>	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Cellulose 20% Min. Wool	40% Non-fibrous (other)	None Detected
B028-23 <i>021303259-0022</i>	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Cellulose 20% Min. Wool	40% Non-fibrous (other)	None Detected
B028-24 <i>021303259-0023</i>	Ceiling Panels	Gray/White Fibrous Heterogeneous	40% Cellulose 30% Min. Wool	30% Non-fibrous (other)	None Detected
B028-25 <i>021303259-0024</i>	Ceiling Panels	Gray/White Fibrous Heterogeneous	40% Cellulose 30% Min. Wool	30% Non-fibrous (other)	None Detected

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-26 021303259-0025	Ceiling Panels	Gray/White/Beige Fibrous Heterogeneous	40% Cellulose 30% Min. Wool	30% Non-fibrous (other)	None Detected
B028-27 021303259-0026	Mastic	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-28 021303259-0027	Mastic	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-30 021303259-0028	Duct Wrap	Tan/Black Fibrous Heterogeneous	1% Cellulose 5% Glass	94% Non-fibrous (other)	None Detected
B028-31 021303259-0029	Duct Wrap	Brown/Black Fibrous Heterogeneous	40% Cellulose 5% Glass	55% Non-fibrous (other)	None Detected
B028-33 021303259-0030	Baseboard Adhesive	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-34 021303259-0031	Baseboard Adhesive	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-36 021303259-0032	Carpet Adhesive	Tan Non-Fibrous Homogeneous	<1% Cellulose 1% Synthetic	99% Non-fibrous (other)	None Detected

Analyst(s)

Nicole Shutts (136)

Scott Combs (102)

Stephen Bennett, Laboratory Manager
or other approved signatory

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Report Amended: 06/17/2013 10:16:35 Replaces the Initial Report 06/03/2013 13:55:46. Reason Code: Client-Samples Added

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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-37 <i>021303259-0033</i>	Carpet Adhesive	Yellow/Beige Non-Fibrous Homogeneous	1% Cellulose <1% Synthetic	99% Non-fibrous (other)	None Detected
B028-39 <i>021303259-0034</i>	Mastic	Black Non-Fibrous Homogeneous		92% Non-fibrous (other)	8% Chrysotile
B028-40 <i>021303259-0035</i>	Mastic				Stop Positive (Not Analyzed)
B028-42 <i>021303259-0036</i>	Ceiling Texture	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-43 <i>021303259-0037</i>	Ceiling Texture	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-44 <i>021303259-0038</i>	Ceiling Texture	Gray/Tan Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-45-Skim Coat <i>021303259-0039</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-45-Rough Coat <i>021303259-0039A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

Analyst(s)

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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-46-Skim Coat <i>021303259-0040</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-46-Rough Coat <i>021303259-0040A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-47-Skim Coat <i>021303259-0041</i>	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-47-Rough Coat <i>021303259-0041A</i>	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Hair <1% Cellulose	100% Non-fibrous (other)	None Detected
B028-48 <i>021303259-0042</i>	Skim Coat	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-49 <i>021303259-0043</i>	Skim Coat	Gray/Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-50 <i>021303259-0044</i>	Skim Coat	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-51-Floor Tile <i>021303259-0045</i>	Floor Tile & Mastic	Tan/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-51-Mastic 021303259-0045A	Floor Tile & Mastic	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-52-Floor Tile 021303259-0046	Floor Tile & Mastic	Tan/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-52-Mastic 021303259-0046A	Floor Tile & Mastic	Yellow/Beige/Cream Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-54-Drywall 021303259-0047	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose 2% Glass	88% Non-fibrous (other)	None Detected
B028-54-Joint Compound 021303259-0047A	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-55-Drywall 021303259-0048	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (other)	None Detected
B028-55-Joint Compound 021303259-0048A	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-55-Tape 021303259-0048B	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-56-Drywall 021303259-0049	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-56-Joint Compound 021303259-0049A	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-56-Tape 021303259-0049B	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-57-Joint Compound 021303259-0050	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-57-Tape 021303259-0050A	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-58-Joint Compound 021303259-0051	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-58-Tape 021303259-0051A	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-59-Drywall 021303259-0052	Drywall/ Joint Compound	Gray Non-Fibrous Heterogeneous	3% Cellulose	97% Non-fibrous (other)	None Detected
B028-59-Joint Compound 021303259-0052A	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-59-Tape 021303259-0052B	Drywall/ Joint Compound	Beige Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
B028-60-Drywall 021303259-0053	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose <1% Glass	90% Non-fibrous (other)	None Detected
B028-60-Joint Compound 021303259-0053A	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-60-Tape 021303259-0053B	Drywall/ Joint Compound	Beige Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
B028-61 021303259-0054	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Cellulose 20% Min. Wool	40% Non-fibrous (other)	None Detected

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-62 021303259-0055	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Cellulose 20% Min. Wool	40% Non-fibrous (other)	None Detected
B028-63 021303259-0056	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Cellulose 20% Min. Wool	40% Non-fibrous (other)	None Detected
B028-64 021303259-0057	Window Caulk	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-65 021303259-0058	Window Caulk	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-67-Flooring 021303259-0059	Vinyl Flooring	Beige Fibrous Heterogeneous	30% Cellulose 1% Glass	69% Non-fibrous (other)	None Detected
B028-67-Mastic 021303259-0059A	Vinyl Flooring	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-68-Flooring 021303259-0060	Vinyl Flooring	Gray/Beige Fibrous Heterogeneous	30% Cellulose 1% Glass	69% Non-fibrous (other)	None Detected
B028-68-Mastic 021303259-0060A	Vinyl Flooring	Tan/Yellow Non-Fibrous Heterogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-70 <i>021303259-0061</i>	Pipe Insulation	Gray/Beige Fibrous Heterogeneous	5% Cellulose	15% Non-fibrous (other)	80% Chrysotile
B028-71-Drywall <i>021303259-0062</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	8% Cellulose 1% Glass	91% Non-fibrous (other)	None Detected
B028-71-Joint Compound <i>021303259-0062A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-71-Tape <i>021303259-0062B</i>	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-72-Drywall <i>021303259-0063</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (other)	None Detected
B028-72-Joint Compound <i>021303259-0063A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-72-Tape <i>021303259-0063B</i>	Drywall/ Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-73-Drywall <i>021303259-0064</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (other)	None Detected

Analyst(s)

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-73-Joint Compound <i>021303259-0064A</i>	Drywall/ Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-73-Tape <i>021303259-0064B</i>	Drywall/ Joint Compound	Beige Fibrous Heterogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-74-Drywall <i>021303259-0065</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-74-Joint Compound <i>021303259-0065A</i>	Drywall/ Joint Compound	White Non-Fibrous Heterogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-75-Drywall <i>021303259-0066</i>	Drywall/ Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-75-Joint Compound <i>021303259-0066A</i>	Drywall/ Joint Compound	Gray Non-Fibrous Homogeneous	1% Cellulose	96% Non-fibrous (other)	3% Chrysotile
B028-78 <i>021303259-0069</i>	Plaster	Gray Fibrous Heterogeneous	2% Cellulose 1% Hair	94% Non-fibrous (other)	3% Chrysotile

Only Rough Coat Present.

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CustomerID: FMEC62
CustomerPO: E5300.03
ProjectID:

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Received: 05/30/13 10:30 AM
Analysis Date: 6/17/2013
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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-79 <i>021303259-0070</i>	Plaster	Gray Fibrous Heterogeneous	<1% Cellulose	97% Non-fibrous (other)	3% Chrysotile
Only Rough Coat Present.					
B028-80 <i>021303259-0071</i>	Plaster	Gray Fibrous Heterogeneous	1% Cellulose	97% Non-fibrous (other)	2% Chrysotile
Only Rough Coat Present.					
B028-81 <i>021303259-0072</i>	Plaster	Gray Fibrous Heterogeneous	2% Cellulose <1% Hair	95% Non-fibrous (other)	3% Chrysotile
Only Rough Coat Present.					
B028-82 <i>021303259-0073</i>	Plaster	Gray Fibrous Heterogeneous	1% Cellulose <1% Hair	96% Non-fibrous (other)	3% Chrysotile
Only Rough Coat Present.					
B028-85 <i>021303259-0076</i>	Carpet Adhesive	Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Synthetic	100% Non-fibrous (other)	None Detected
B028-86 <i>021303259-0077</i>	Carpet Adhesive	Tan/Yellow/Gold Non-Fibrous Heterogeneous	2% Cellulose 1% Synthetic	97% Non-fibrous (other)	None Detected
B028-88 <i>021303259-0078</i>	Baseboard Adhesive	Brown/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

Analyst(s)

Nicole Shutts (136)
Scott Combs (102)


Stephen Bennett, Laboratory Manager
or other approved signatory

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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-89 021303259-0079	Baseboard Adhesive	Brown/Yellow Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-91 021303259-0080	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	30% Cellulose 40% Min. Wool	30% Non-fibrous (other)	None Detected
B028-92 021303259-0081	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	30% Cellulose 40% Min. Wool	30% Non-fibrous (other)	None Detected
B028-93 021303259-0082	Ceiling Panels	Gray/Tan/White Fibrous Heterogeneous	40% Min. Wool 30% Cellulose	30% Non-fibrous (other)	None Detected
B028-94 021303259-0083	Ceiling Texture	Gray/White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-95 021303259-0084	Ceiling Texture	Gray/White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-96 021303259-0085	Ceiling Texture	Gray/White Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-97-Floor Tile 021303259-0086	Floor Tile & Mastic	Tan/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-97-Mastic 021303259-0086A	Floor Tile & Mastic	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-98-Floor Tile 021303259-0087	Floor Tile & Mastic	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-98-Mastic 021303259-0087A	Floor Tile & Mastic	Yellow/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-100 021303259-0088	Ceiling Texture	Gray/Beige Fibrous Heterogeneous		95% Non-fibrous (other)	5% Chrysotile
B028-101 021303259-0089	Ceiling Texture				Stop Positive (Not Analyzed)
B028-101A 021303259-0090	Ceiling Texture				Stop Positive (Not Analyzed)
B028-102 021303259-0091	Ceiling Texture				Stop Positive (Not Analyzed)
B028-102A 021303259-0092	Ceiling Texture				Stop Positive (Not Analyzed)

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-103 <i>021303259-0093</i>	Mastic	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-104 <i>021303259-0094</i>	Mastic	White/Grayish Non-Fibrous Homogeneous	1% Synthetic <1% Cellulose	99% Non-fibrous (other)	None Detected
B028-106 <i>021303259-0095</i>	Mastic	Gray Non-Fibrous Homogeneous	3% Min. Wool	97% Non-fibrous (other)	None Detected
B028-107 <i>021303259-0096</i>	Mastic	Gray Fibrous Homogeneous	15% Min. Wool	85% Non-fibrous (other)	None Detected
B028-109 <i>021303259-0097</i>	Mastic	Black Non-Fibrous Homogeneous		92% Non-fibrous (other)	8% Chrysotile
B028-110 <i>021303259-0098</i>	Mastic				Stop Positive (Not Analyzed)
B028-112 <i>021303259-0099</i>	Ceiling Panels	Gray Fibrous Heterogeneous	80% Min. Wool <1% Cellulose	20% Non-fibrous (other)	None Detected
B028-113 <i>021303259-0100</i>	Ceiling Panels	Gray Fibrous Heterogeneous	80% Min. Wool <1% Cellulose	20% Non-fibrous (other)	None Detected

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-114 <i>021303259-0101</i>	Ceiling Panels	Gray/Beige Fibrous Heterogeneous	80% Min. Wool <1% Cellulose	20% Non-fibrous (other)	None Detected
B028-115 <i>021303259-0102</i>	Mudded Elbows	Gray/Beige Fibrous Heterogeneous	40% Min. Wool 1% Cellulose	59% Non-fibrous (other)	None Detected
B028-116 <i>021303259-0103</i>	Mudded Elbows	Gray/Beige Fibrous Heterogeneous	40% Min. Wool <1% Cellulose	60% Non-fibrous (other)	None Detected
B028-117 <i>021303259-0104</i>	Mudded Elbows	Brown/Gray/Tan Fibrous Heterogeneous	45% Min. Wool 8% Cellulose	47% Non-fibrous (other)	None Detected
B028-118 <i>021303259-0105</i>	TSI	White Fibrous Heterogeneous		83% Non-fibrous (other)	15% Amosite 2% Chrysotile
B028-119 <i>021303259-0106</i>	TSI				Stop Positive (Not Analyzed)
B028-120 <i>021303259-0107</i>	TSI				Stop Positive (Not Analyzed)
B028-121-Floor Tile <i>021303259-0108</i>	Floor Tile & Mastic	Gray/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-121-Mastic <i>021303259-0108A</i>	Floor Tile & Mastic	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-122-Floor Tile <i>021303259-0109</i>	Floor Tile & Mastic	Beige/Grayish Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-122-Mastic <i>021303259-0109A</i>	Floor Tile & Mastic	Yellow/Orange Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-124 <i>021303259-0110</i>	Baseboard Adhesive	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-125 <i>021303259-0111</i>	Baseboard Adhesive	Yellow/Gold Non-Fibrous Homogeneous	<1% Cellulose <1% Synthetic	100% Non-fibrous (other)	None Detected
B028-127 <i>021303259-0112</i>	Carpet Adhesive	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-128 <i>021303259-0113</i>	Carpet Adhesive	Tan/Beige Non-Fibrous Heterogeneous	3% Cellulose <1% Synthetic	97% Non-fibrous (other)	None Detected
B028-130-Drywall <i>021303259-0114</i>	Drywall/Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-130-Joint Compound <i>021303259-0114A</i>	Drywall/Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-130-Tape <i>021303259-0114B</i>	Drywall/Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-131-Drywall <i>021303259-0115</i>	Drywall/Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-131-Joint Compound <i>021303259-0115A</i>	Drywall/Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-131-Tape <i>021303259-0115B</i>	Drywall/Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-132-Drywall <i>021303259-0116</i>	Drywall/Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-132-Joint Compound <i>021303259-0116A</i>	Drywall/Joint Compound	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-132-Tape <i>021303259-0116B</i>	Drywall/Joint Compound	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (other)	None Detected
B028-133-Drywall <i>021303259-0117</i>	Drywall/Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-133-Joint Compound <i>021303259-0117A</i>	Drywall/Joint Compound	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-133-Tape <i>021303259-0117B</i>	Drywall/Joint Compound	Beige Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
B028-134-Drywall <i>021303259-0118</i>	Drywall/Joint Compound	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-134-Joint Compound <i>021303259-0118A</i>	Drywall/Joint Compound	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-134-Tape <i>021303259-0118B</i>	Drywall/Joint Compound	Beige Fibrous Homogeneous	100% Cellulose	0% Non-fibrous (other)	None Detected
B028-135 <i>021303259-0119</i>	Ceiling Texture	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-136 <i>021303259-0120</i>	Ceiling Texture	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-137 <i>021303259-0121</i>	Ceiling Texture	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-138 <i>021303259-0122</i>	Ceiling Texture	White/Grayish Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-139 <i>021303259-0123</i>	Ceiling Texture	White/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-140-Floor Tile <i>021303259-0124</i>	Floor Tile & Mastic	Black Non-Fibrous Homogeneous		95% Non-fibrous (other)	5% Chrysotile
B028-140-Mastic <i>021303259-0124A</i>	Floor Tile & Mastic	Black Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (other)	None Detected
B028-140-Tar Paper <i>021303259-0124B</i>	Floor Tile & Mastic	Black Fibrous Homogeneous	70% Cellulose 1% Synthetic	29% Non-fibrous (other)	None Detected
B028-141-Floor Tile <i>021303259-0125</i>	Floor Tile & Mastic				Stop Positive (Not Analyzed)

Analyst(s)

 Nicole Shutts (136)
 Scott Combs (102)


 Stephen Bennett, Laboratory Manager
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Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-141-Mastic <i>021303259-0125A</i>	Floor Tile & Mastic	Black Non-Fibrous Homogeneous	3%	Cellulose	97% Non-fibrous (other) None Detected
B028-141-Tar Paper <i>021303259-0125B</i>	Floor Tile & Mastic	Black Fibrous Homogeneous	70% 1%	Cellulose Synthetic	29% Non-fibrous (other) None Detected
B028-143 <i>021303259-0126</i>	Mastic	White/Grayish Fibrous Heterogeneous	10% 5%	Cellulose Glass	85% Non-fibrous (other) None Detected
B028-144 <i>021303259-0127</i>	Mastic	White Non-Fibrous Homogeneous	2% <1%	Cellulose Glass	98% Non-fibrous (other) None Detected
B028-146 <i>021303259-0128</i>	Mastic	Gray/White Non-Fibrous Heterogeneous	2%	Cellulose	98% Non-fibrous (other) None Detected
B028-147 <i>021303259-0129</i>	Mastic	Gray/White Non-Fibrous Homogeneous	2%	Cellulose	98% Non-fibrous (other) None Detected
B028-149 <i>021303259-0130</i>	Mudded Elbow	Gray/Tan Fibrous Heterogeneous	45% 3%	Min. Wool Cellulose	47% Non-fibrous (other) 5% Chrysotile
B028-150 <i>021303259-0131</i>	Mudded Elbow				Stop Positive (Not Analyzed)

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-151 <i>021303259-0132</i>	Mudded Elbow	Brown/Gray Fibrous Heterogeneous	20% Cellulose	60% Non-fibrous (other)	20% Chrysotile
B028-152 <i>021303259-0133</i>	Mudded Elbow	Brown/Gray/Tan Fibrous Heterogeneous	40% Min. Wool 15% Cellulose 1% Synthetic	44% Non-fibrous (other)	None Detected
B028-153 <i>021303259-0134</i>	Mudded Elbow	Gray/Tan Fibrous Heterogeneous	40% Min. Wool 10% Cellulose <1% Synthetic	50% Non-fibrous (other)	None Detected
B028-154 <i>021303259-0135</i>	TSI	Brown/Gray Fibrous Heterogeneous	85% Cellulose 8% Synthetic 1% Hair	3% Non-fibrous (other)	3% Chrysotile
B028-155 <i>021303259-0136</i>	TSI				Stop Positive (Not Analyzed)
B028-156 <i>021303259-0137</i>	Air Cell Insulation	White Fibrous Homogeneous	<1% Cellulose	10% Non-fibrous (other)	90% Chrysotile
B028-157-Skim Coat <i>021303259-0138</i>	Ceiling Texture	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-157-Rough Coat 021303259-0138A	Ceiling Texture	Brown/Gray/Tan Non-Fibrous Heterogeneous	<1% Hair <1% Cellulose	100% Non-fibrous (other)	None Detected
B028-158-Skim Coat 021303259-0139	Ceiling Texture	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
B028-158-Rough Coat 021303259-0139A	Ceiling Texture	Brown/Gray/Tan Non-Fibrous Heterogeneous	<1% Hair <1% Cellulose	100% Non-fibrous (other)	None Detected
B028-159-Skim Coat 021303259-0140	Ceiling Texture	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
B028-159-Rough Coat 021303259-0140A	Ceiling Texture	Brown/Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (other)	None Detected
B028-160-Skim Coat 021303259-0141	Ceiling Texture	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
B028-160-Rough Coat 021303259-0141A	Ceiling Texture	Brown/Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-161-Skim Coat <i>021303259-0142</i>	Ceiling Texture	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
B028-161-Rough Coat <i>021303259-0142A</i>	Ceiling Texture	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose <1% Hair	100% Non-fibrous (other)	None Detected
B028-162 <i>021303259-0143</i>	Mastic	White Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (other)	None Detected
B028-163 <i>021303259-0144</i>	Mastic	White Fibrous Heterogeneous	5% Cellulose 1% Glass	94% Non-fibrous (other)	None Detected
B028-165 <i>021303259-0145</i>	Pipe Wrap	Black Fibrous Heterogeneous	3% Cellulose	82% Non-fibrous (other)	15% Chrysotile
B028-166 <i>021303259-0146</i>	Pipe Wrap				Stop Positive (Not Analyzed)
B028-168 <i>021303259-0147</i>	TSI	Brown/Gray/Tan Fibrous Heterogeneous	45% Min. Wool 2% Cellulose	43% Non-fibrous (other)	10% Chrysotile
B028-169 <i>021303259-0148</i>	TSI				Stop Positive (Not Analyzed)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-170 <i>021303259-0149</i>	TSI				Stop Positive (Not Analyzed)
B028-171 <i>021303259-0150</i>	Ceiling Felt	Tan/Black Fibrous Heterogeneous	70% Cellulose	30% Non-fibrous (other)	None Detected
B028-172 <i>021303259-0151</i>	Ceiling Felt	Black Fibrous Heterogeneous	70% Cellulose	30% Non-fibrous (other)	None Detected
B028-174 <i>021303259-0152</i>	Electrical Wiring	Tan Fibrous Homogeneous	1% Cellulose	4% Non-fibrous (other)	95% Chrysotile
B028-175 <i>021303259-0153</i>	Electrical Wiring				Stop Positive (Not Analyzed)
B028-176 <i>021303259-0154</i>	Electrical Wiring				Stop Positive (Not Analyzed)
B028-177-Flooring <i>021303259-0155</i>	Vinyl Flooring	Gray/Tan/Beige Fibrous Heterogeneous	30% Cellulose 3% Glass	67% Non-fibrous (other)	None Detected
B028-177-Mastic <i>021303259-0155A</i>	Vinyl Flooring	Tan/Gold Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-178-Flooring <i>021303259-0156</i>	Vinyl Flooring	Gray/Tan/Beige Fibrous Heterogeneous	30% Cellulose 2% Glass	68% Non-fibrous (other)	None Detected
B028-178-Mastic <i>021303259-0156A</i>	Vinyl Flooring	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-180 <i>021303259-0157</i>	Mastic	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-181 <i>021303259-0158</i>	Mastic	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-183 <i>021303259-0159</i>	Mudded Elbow	Gray/Tan/Beige Fibrous Heterogeneous	40% Min. Wool 15% Cellulose 1% Synthetic	44% Non-fibrous (other)	None Detected
B028-184 <i>021303259-0160</i>	Moisture Sealant	Brown/Black Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-185 <i>021303259-0161</i>	Moisture Sealant	Brown/Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-187 <i>021303259-0162</i>	Window Glazing	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	97% Non-fibrous (other)	3% Chrysotile

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-188 <i>021303259-0163</i>	Window Glazing				Stop Positive (Not Analyzed)
B028-189 <i>021303259-0164</i>	Window Glazing				Stop Positive (Not Analyzed)
B028-190 <i>021303259-0165</i>	Caulking	Gray/Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<1% Chrysotile
B028-191 <i>021303259-0166</i>	Caulking	Gray/Red/Silver Fibrous Homogeneous	<1% Cellulose <1% Fibrous (other)	90% Non-fibrous (other)	10% Chrysotile
B028-193 <i>021303259-0167</i>	Built Up Roofing	Brown/Gray/Black Fibrous Heterogeneous	8% Cellulose 5% Glass	87% Non-fibrous (other)	None Detected
B028-194 <i>021303259-0168</i>	Built Up Roofing	Brown/Gray/Black Fibrous Heterogeneous	10% Cellulose 15% Glass	75% Non-fibrous (other)	None Detected
B028-196 <i>021303259-0169</i>	Flashing Material	Black/Silver Fibrous Heterogeneous	3% Synthetic 3% Glass	94% Non-fibrous (other)	None Detected
B028-197 <i>021303259-0170</i>	Flashing Material	Black/Silver Fibrous Heterogeneous	3% Cellulose 3% Synthetic	94% Non-fibrous (other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-199 <i>021303259-0171</i>	Caulk	Brown/Gray Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-200 <i>021303259-0172</i>	Caulk	Brown/Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-202 <i>021303259-0173</i>	HVAC Mastic	Gray/Black Fibrous Heterogeneous	1% Cellulose	84% Non-fibrous (other)	15% Chrysotile
B028-203 <i>021303259-0174</i>	HVAC Mastic				Stop Positive (Not Analyzed)
B028-205 <i>021303259-0175</i>	Built Up Roofing	Black Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-206 <i>021303259-0176</i>	Built Up Roofing	White/Black Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
B028-208 <i>021303259-0177</i>	Flashing Material	Brown/Gray/Black Fibrous Heterogeneous	20% Cellulose 5% Glass	55% Non-fibrous (other)	20% Chrysotile
B028-209 <i>021303259-0178</i>	Flashing Material				Stop Positive (Not Analyzed)

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Report Amended: 06/17/2013 10:16:35 Replaces the Initial Report 06/03/2013 13:55:46. Reason Code: Client-Samples Added

**EMSL Analytical, Inc.**

706 Galin Street, Kernersville, NC 27284

Phone/Fax: (336) 992-1025 / (336) 992-4175

greensborolab@emsl.com

EMSL Order: 021303259

CustomerID: FMEC62

CustomerPO: E5300.03

ProjectID:

Attn: **Glynn Ellen**
F & ME Consultants
3112 Divine Street

Columbia, SC 29205

Phone: (803) 254-4540
 Fax: (803) 254-4542
 Received: 05/30/13 10:30 AM
 Analysis Date: 6/17/2013
 Collected:

Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-211 021303259-0179	Roof Mastic	Brown/Gray/Black Fibrous Heterogeneous	15% Cellulose 3% Glass	77% Non-fibrous (other)	5% Chrysotile
B028-212 021303259-0180	Roof Mastic				Stop Positive (Not Analyzed)
B028-214 021303259-0181	Shingle	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (other)	None Detected
B028-215 021303259-0182	Shingle	Brown/Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (other)	None Detected
B028-217 021303259-0183	Roofing Felt	Black Fibrous Homogeneous	70% Cellulose 1% Synthetic	29% Non-fibrous (other)	None Detected
B028-218 021303259-0184	Roofing Felt	Black Fibrous Heterogeneous	70% Cellulose 1% Synthetic	29% Non-fibrous (other)	None Detected
B028-220 021303259-0185	Roof Mastic	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
B028-221 021303259-0186	Roof Mastic	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

Analyst(s)

Nicole Shutts (136)

Scott Combs (102)

Stephen Bennett, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, Virginia 3333-000228, West Virginia LT000321

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EMSL Order: 021303259

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Phone: (803) 254-4540
 Fax: (803) 254-4542
 Received: 05/30/13 10:30 AM
 Analysis Date: 6/17/2013
 Collected:

Project: **E5300.03 ACM Investigation- USC Law School Site/ Building #028**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B028-223 <i>021303259-0187</i>	Caulk	White Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (other)	None Detected
B028-224 <i>021303259-0188</i>	Caulk	White/Black/Green/ Grayish Non-Fibrous Heterogeneous	<1% Glass <1% Cellulose	100% Non-fibrous (other)	None Detected
B028-226 <i>021303259-0189</i>	Door Coating	Gray Non-Fibrous Homogeneous	<1% Cellulose 3% Synthetic	97% Non-fibrous (other)	None Detected
B028-227 <i>021303259-0190</i>	Door Coating	Gray/Silver/Green Fibrous Heterogeneous	5% Synthetic <1% Cellulose	95% Non-fibrous (other)	<1% Chrysotile
B028-229 <i>021303259-0191</i>	Flashing Mastic	Gray/Black/Silver Fibrous Heterogeneous		80% Non-fibrous (other)	20% Chrysotile
B028-230 <i>021303259-0192</i>	Flashing Mastic				Stop Positive (Not Analyzed)

Analyst(s)

*Nicole Shutts (136)**Scott Combs (102)*Stephen Bennett, Laboratory Manager
or other approved signatory

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Report Amended: 06/17/2013 10:16:35 Replaces the Initial Report 06/03/2013 13:55:46. Reason Code: Client-Samples Added

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Fax: (803) 254-4542
Received: 05/30/13 10:30 AM
Analysis Date: 6/4/2013
Collected:

Project: E5300.03 ACM Investigation- USC Law School Site/ Building #028

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM
via EPA/600/R-93/116 Section 2.5.5.1**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
B028-17-Floor Tile 021303259-0193		Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-17-Mastic 021303259-0194		Tan Non-Fibrous Heterogeneous	100	None	<0.25% Chrysotile
B028-29 021303259-0195		Silver /Beige Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-32 021303259-0196		Brown /Black Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-35 021303259-0197		Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-38 021303259-0198		Brown /Tan Non-Fibrous Homogeneous	100	None	No Asbestos Detected
B028-53-Floor Tile 021303259-0199		Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-53-Mastic 021303259-0200		Yellow Non-Fibrous Heterogeneous	100	None	<0.25% Chrysotile
B028-66 021303259-0201		Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
Stephen Bennett (40)Stephen Bennett, Laboratory Manager
or other approved signatoryThis laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.
Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 06/04/2013 14:32:46

**EMSL Analytical, Inc.**

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EMSL Order: 021303259
 CustomerID: FMEC62
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Phone: (803) 254-4540
 Fax: (803) 254-4542
 Received: 05/30/13 10:30 AM
 Analysis Date: 6/4/2013
 Collected:

Project: E5300.03 ACM Investigation- USC Law School Site/ Building #028

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
B028-69-Flooring 021303259-0202		White /Beige Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-69-Mastic 021303259-0203		Yellow Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-87 021303259-0204		Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-90 021303259-0205		Brown Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-99-Floor Tile 021303259-0206		Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-99-Mastic 021303259-0207		Yellow Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-105 021303259-0208		Silver /Beige Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-108 021303259-0209		Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-123-Floor Tile 021303259-0210		Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-123-Mastic 021303259-0211		Yellow Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
 Stephen Bennett (40)


 Stephen Bennett, Laboratory Manager
 or other approved signatory

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 Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 06/04/2013 14:32:46

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CustomerID: FMEC62
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Fax: (803) 254-4542
Received: 05/30/13 10:30 AM
Analysis Date: 6/4/2013
Collected:

Project: E5300.03 ACM Investigation- USC Law School Site/ Building #028

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM
via EPA/600/R-93/116 Section 2.5.5.1**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
B028-126 021303259-0212		Brown /Tan Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-129 021303259-0213		Brown /Tan Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-142-Mastic 021303259-0214		Yellow Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-142-Tar Paper 021303259-0215		Brown /Black Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-145 021303259-0216		Gray /Silver Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-148 021303259-0217		Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-164 021303259-0218		Beige Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-173 021303259-0219		Black Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-179-Flooring 021303259-0220		Gray /Beige Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
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Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 06/04/2013 14:32:46

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**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM
 via EPA/600/R-93/116 Section 2.5.5.1**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
B028-179-Mastic 021303259-0221		Tan Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-182 021303259-0222		Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-186 021303259-0223		Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-195 021303259-0224		Black Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-198 021303259-0225		Black /Silver Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-201 021303259-0226		Brown Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-207 021303259-0227		Black Fibrous Heterogeneous	100	None	<0.25% Chrysotile
B028-216 021303259-0228		White /Black Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-219 021303259-0229		Black Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
 Stephen Bennett (40)

Stephen Bennett, Laboratory Manager
 or other approved signatory

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 Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 06/04/2013 14:32:46



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Project: E5300.03 ACM Investigation- USC Law School Site/ Building #028

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM
via EPA/600/R-93/116 Section 2.5.5.1**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
B028-222 021303259-0230		Black Non-Fibrous Heterogeneous	100	None	<0.25% Chrysotile
B028-225 021303259-0231		Gray /White Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
B028-228 021303259-0232		Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
Stephen Bennett (40)


Stephen Bennett, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 06/04/2013 14:32:46

Chain of Custody 3259

EMSL Analytical, Inc.
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Kernersville, NC 27284

Asbestos Lab Services

Phone: (336) 992-1025
Fax: (336) 992-4175
<http://www.emsl.com>

Please print all information legibly.

Company:	F&ME Consultants	Bill To:	F&ME Consultants
Address 1:	3112 Devine Street	Address 1:	P.O. Box 5855
Address 2:		Address 2:	
City, State:	Columbia, South Carolina	City, State:	Columbia, South Carolina
Zip/Post Code:	29205	Zip/Post Code:	29250
Country:	USA	Country:	USA
Contact Name:	Glynn Ellen	Attn:	Jim Kelleher
Phone:	803 254-4540	Phone:	803 777-1208
Fax:	803 254-4542	Fax:	803 777-1028
Email:	glynn@fmecol.com; jshannon@fmecol.com	Email:	jkelleher@fmecol.com
EMSL Rep:	Jason McDonald	P.O. Number:	E5300.03
Project Name/Number:	E5300.03 ACM Investigation-USC Law School Site/Building #028		

MATRIX			TURNAROUND			
<input type="checkbox"/> Air	<input type="checkbox"/> Soil	<input type="checkbox"/> Micro-Vac	<input type="checkbox"/> 6 Hours	<input type="checkbox"/> Same Day or 12 Hours*	<input type="checkbox"/> 24 Hours (1 day)	
<input checked="" type="checkbox"/> Bulk	<input type="checkbox"/> Drinking Water		<input type="checkbox"/> 48 Hours (2 days)	<input checked="" type="checkbox"/> 72 Hours (3 days)	<input checked="" type="checkbox"/> 96 Hours (4 days)	<input type="checkbox"/> 120 Hours (5 days)
<input type="checkbox"/> Wipe	<input type="checkbox"/> Wastewater		<input type="checkbox"/> 144+ hours (6-10 days)			

TEM AIR, 3 hours, 6 hours, Please call ahead to schedule. There is a premium charge for 3-hour tat, please call 1-800-220-3675 for price prior to sending samples. You will be asked to sign an authorization form for this service.

*12 hours (must arrive by 11:00a.m. Mon -Fri), Please Refer to Price Quote

<u>PCM - Air</u>	<u>TEM Air</u>	<u>TEM WATER</u>
<input type="checkbox"/> NIOSH 7400(A) Issue 2: August 1994	<input type="checkbox"/> AHERA 40 CFR, Part 763 Subpart E	<input type="checkbox"/> EPA 100.1
<input type="checkbox"/> OSHA w/TWA	<input type="checkbox"/> NIOSH 7402	<input type="checkbox"/> EPA 100.2
<input checked="" type="checkbox"/> Other:	<input type="checkbox"/> EPA Level II	<input type="checkbox"/> NYS 198.2
<u>PLM - Bulk</u>	<u>TEM BULK</u>	<u>TEM Microvac/Wipe</u>
<input checked="" type="checkbox"/> EPA 600/R-93/116	<input type="checkbox"/> Drop Mount (Qualitative)	<input type="checkbox"/> ASTM D 5755-95 (quantative method)
<input type="checkbox"/> EPA Point Count	<input type="checkbox"/> Chatfield SOP - 1988-02	<input type="checkbox"/> Wipe Qualitative
<input type="checkbox"/> NY Stratified Point Count	<input checked="" type="checkbox"/> TEM NOB (Gravimetric) NYS 198.4	
<input type="checkbox"/> PLM NOB (Gravimetric) NYS 198.1	<input type="checkbox"/> EMSL Standard Addition:	<u>XRD</u>
<input type="checkbox"/> NIOSH 9002:		<input type="checkbox"/> Asbestos
<input type="checkbox"/> EMSL Standard Addition:	<u>PLM Soil</u>	<input type="checkbox"/> Silica NIOSH 7500
<u>SEM Air or Bulk</u>	<input type="checkbox"/> EPA Protocol Qualitative	
<input type="checkbox"/> Qualitative	<input type="checkbox"/> EPA Protocol Quantitative	<u>OTHER</u>
<input type="checkbox"/> Quantitative	<input type="checkbox"/> EMSL MSD 9000 Method fibers/gram	<input type="checkbox"/>

3259



Chain of Custody

Asbestos Lab Services

EMSL Analytical, Inc.
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Kernersville, NC 27284

Phone: (336) 992-1025
Fax: (336) 992-4175
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Please print all information legibly.

Client Sample # B028-1 to B028-231

Total Samples #: 231 192/41

Relinquished: Mike Mincey *Mike Mincey* Date: 05/28/13
NS Date: 5/30

Time: 17:00
Time: 10:30

Relinquished: _____ Date: _____

Time: _____

Received: _____ Date: _____

Time: _____

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME (if applicable)
NOTE: FIRST POSITIVE STOP PROTOCOL. ALSO, FOR SAMPLES DENOTED WITH AN ASTERICK (*), IF THE FIRST TWO SAMPLES' RESULTS ARE NEGATIVE, RUN LAST SAMPLE AS TEM BULK FOR NEGATIVE CONFIRMATION. SOUTH CAROLINA GUIDELINES.		
B028-1	Drywall/Joint Compound	Original House
B028-2	Drywall/Joint Compound	Original House
B028-3	Drywall/Joint Compound	Original House
B028-4	Drywall/Joint Compound	Original House
B028-5	Drywall/Joint Compound	Original House
B028-6	Drywall/Joint Compound	Original House
B028-7	Drywall/Joint Compound	Original House
B028-8	Plaster (Both Coats)	Original House
B028-9	Plaster (Both Coats)	Original House
B028-10	Plaster (Both Coats)	Original House
B028-11	Plaster (Both Coats)	Original House
B028-12	Plaster (Both Coats)	Original House
B028-13	Plaster (Both Coats)	Original House
B028-14	Plaster (Both Coats)	Original House
B028-15	9" x 9" Tan w/Brown Floor Tile & Mastic	Original House
B028-16	9" x 9" Tan w/Brown Floor Tile & Mastic	Original House
*B028-17	9" x 9" Tan w/Brown Floor Tile & Mastic	Original House
B028-18	Plaster Wall Panels	Original House
B028-19	Plaster Wall Panels	Original House
B028-20	Plaster Wall Panels	Original House
B028-21	2' x 2' Small/Medium Pinhole Ceiling Panels	West Wing
B028-22	2' x 2' Small/Medium Pinhole Ceiling Panels	West Wing

B028-23	2' x 2' Small/Medium Pinhole Ceiling Panels	West Wing
B028-24	2' x 4' Wavy Pattern Ceiling Panels	West Wing
B028-25	2' x 4' Wavy Pattern Ceiling Panels	West Wing
B028-26	2' x 4' Wavy Pattern Ceiling Panels	West Wing
B028-27	White Mastic on Fiberglass Duct Insulation	West Wing
B028-28	White Mastic on Fiberglass Duct Insulation	West Wing
*B028-29	White Mastic on Fiberglass Duct Insulation	West Wing
B028-30	Fiberglass Duct Wrap	West Wing
B028-31	Fiberglass Duct Wrap	West Wing
*B028-32	Fiberglass Duct Wrap	West Wing
B028-33	Baseboard Adhesive	West Wing
B028-34	Baseboard Adhesive	West Wing
*B028-35	Baseboard Adhesive	West Wing
B028-36	Carpet Adhesive	West Wing
B028-37	Carpet Adhesive	West Wing
*B028-38	Carpet Adhesive	West Wing
B028-39	Black Mastic on Fiberglass Duct Wrap	West Wing
B028-40	Black Mastic on Fiberglass Duct Wrap	West Wing
*B028-41	Black Mastic on Fiberglass Duct Wrap	West Wing
B028-42	Rough Ceiling Texture	West Wing
B028-43	Rough Ceiling Texture	West Wing
B028-44	Rough Ceiling Texture	West Wing
B028-45	Plaster (Both Coats)	West Wing
B028-46	Plaster (Both Coats)	West Wing
B028-47	Plaster (Both Coats)	West Wing
B028-48	Ceiling Skim Coat	West Wing
B028-49	Ceiling Skim Coat	West Wing
B028-50	Ceiling Skim Coat	West Wing
B028-51	18" x 36" Tan Floor & Mastic	West Wing
B028-52	18" x 36" Tan Floor & Mastic	West Wing
*B028-53	18" x 36" Tan Floor & Mastic	West Wing
B028-54	Drywall/Joint Compound	West Wing
B028-55	Drywall/Joint Compound	West Wing
B028-56	Drywall/Joint Compound	West Wing
B028-57	Drywall/Joint Compound	West Wing
B028-58	Drywall/Joint Compound	West Wing
B028-59	Drywall/Joint Compound	West Wing
B028-60	Drywall/Joint Compound	West Wing
B028-61	2' x 2' Wavy Pattern Ceiling Panels	West Wing
B028-62	2' x 2' Wavy Pattern Ceiling Panels	West Wing
B028-63	2' x 2' Wavy Pattern Ceiling Panels	West Wing
B028-64	Interior Gray Window Caulk	West Wing

2259

3259

B028-65	Interior Gray Window Caulk	West Wing
*B028-66	Interior Gray Window Caulk	West Wing
B028-67	Off-White Vinyl Flooring	Original House
B028-68	Off-White Vinyl Flooring	Original House
*B028-69	Off-White Vinyl Flooring	Original House
B028-70	TSI Pipe Insulation (Air Cell)	Original House
B028-71	Drywall/Joint Compound	East Wing
B028-72	Drywall/Joint Compound	East Wing
B028-73	Drywall/Joint Compound	East Wing
B028-74	Drywall/Joint Compound	East Wing
B028-75	Drywall/Joint Compound	East Wing
B028-76	Not Used	East Wing
B028-77	Not Used	East Wing
B028-78	Plaster (Both Coats)	East Wing
B028-79	Plaster (Both Coats)	East Wing
B028-80	Plaster (Both Coats)	East Wing
B028-81	Plaster (Both Coats)	East Wing
B028-82	Plaster (Both Coats)	East Wing
B028-83	Not Used	East Wing
B028-84	Not Used	East Wing
B028-85	Carpet Adhesive	East Wing
B028-86	Carpet Adhesive	East Wing
*B028-87	Carpet Adhesive	East Wing
B028-88	Baseboard Adhesive	East Wing
B028-89	Baseboard Adhesive	East Wing
*B028-90	Baseboard Adhesive	East Wing
B028-91	2' x 2' Small/Medium Pinhole Ceiling Panels	East Wing
B028-92	2' x 2' Small/Medium Pinhole Ceiling Panels	East Wing
B028-93	2' x 2' Small/Medium Pinhole Ceiling Panels	East Wing
B028-94	Light Ceiling Texture (H109)	East Wing
B028-95	Light Ceiling Texture (H109)	East Wing
B028-96	Light Ceiling Texture (H109)	East Wing
B028-97	12" x 12" Tan Floor Tile & Mastic	Carriage House
B028-98	12" x 12" Tan Floor Tile & Mastic	Carriage House
*B028-99	12" x 12" Tan Floor Tile & Mastic	Carriage House
B028-100	Spray Applied Ceiling Texture	East Wing
B028-101	Spray Applied Ceiling Texture	East Wing
B028-101A	Spray Applied Ceiling Texture	East Wing
B028-102	Spray Applied Ceiling Texture	East Wing
B028-102A	Spray Applied Ceiling Texture	East Wing
B028-103	White Mastic on Fiberglass Ducts	East Wing

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B028-104	White Mastic on Fiberglass Ducts	East Wing
*B028-105	White Mastic on Fiberglass Ducts	East Wing
B028-106	Gray Mastic on Fiberglass Ducts	Carriage House
B028-107	Gray Mastic on Fiberglass Ducts	Carriage House
*B028-108	Gray Mastic on Fiberglass Ducts	Carriage House
B028-109	Black Mastic on Fiberglass Duct Wrap	East Wing
B028-110	Black Mastic on Fiberglass Duct Wrap	East Wing
*B028-111	Black Mastic on Fiberglass Duct Wrap	East Wing
B028-112	12" x 12" Textured Ceiling Panels	East Wing
B028-113	12" x 12" Textured Ceiling Panels	East Wing
B028-114	12" x 12" Textured Ceiling Panels	East Wing
B028-115	Mudded Elbow on Fiberglass Insulated Line	East Wing
B028-116	Mudded Elbow on Block Insulated Line	East Wing
B028-117	Mudded Elbow on Block Insulated Line	East Wing
B028-118	TSI Pipe Run	East Wing
B028-119	TSI Pipe Run	East Wing
B028-120	TSI Pipe Run	East Wing
B028-121	12" x 12" Tan Floor Tile & Mastic	East Wing
B028-122	12" x 12" Tan Floor Tile & Mastic	East Wing
*B028-123	12" x 12" Tan Floor Tile & Mastic	East Wing
B028-124	Baseboard Adhesive	Carriage House
B028-125	Baseboard Adhesive	Carriage House
*B028-126	Baseboard Adhesive	Carriage House
B028-127	Carpet Adhesive	Carriage House
B028-128	Carpet Adhesive	Carriage House
*B028-129	Carpet Adhesive	Carriage House
B028-130	Drywall/Joint Compound	Carriage House
B028-131	Drywall/Joint Compound	Carriage House
B028-132	Drywall/Joint Compound	Carriage House
B028-133	Drywall/Joint Compound	Carriage House
B028-134	Drywall/Joint Compound	Carriage House
B028-135	Spray Applied Ceiling Texture	Carriage House
B028-136	Spray Applied Ceiling Texture	Carriage House
B028-137	Spray Applied Ceiling Texture	Carriage House
B028-138	Spray Applied Ceiling Texture	Carriage House
B028-139	Spray Applied Ceiling Texture	Carriage House
B028-140	9" x 9" Black Floor Tile & Mastic	Carriage House
B028-141	9" x 9" Black Floor Tile & Mastic	Carriage House
*B028-142	9" x 9" Black Floor Tile & Mastic	Carriage House
B028-143	White Mastic on Fiberglass Pipe Insulation	Original House
B028-144	White Mastic on Fiberglass Pipe Insulation	Original House

*B028-145	White Mastic on Fiberglass Pipe Insulation	Original House
B028-146	Gray Mastic on Fiberglass Duct Insulation	Original House
B028-147	Gray Mastic on Fiberglass Duct Insulation	Original House
*B028-148	Gray Mastic on Fiberglass Duct Insulation	Original House
B028-149	Mudded Elbow on Air Cell Insulated Line	Original House
B028-150	Mudded Elbow on Air Cell Insulated Line	Original House
B028-151	Mudded Elbow on Block Insulated Line	Original House
B028-152	Mudded Elbow on Fiberglass Insulated Line	Original House
B028-153	Mudded Elbow on Fiberglass Insulated Line	Original House
B028-154	TSI Pipe Run	Original House
B028-155	TSI Pipe Run	Original House
B028-156	Air Cell Insulation	Original House
B028-157	Toweled Ceiling Texture	Original House
B028-158	Toweled Ceiling Texture	Original House
B028-159	Toweled Ceiling Texture	Original House
B028-160	Toweled Ceiling Texture	Original House
B028-161	Toweled Ceiling Texture	Original House
B028-162	White Mastic on Fiberglass Pipe Insulation	Original House
B028-163	White Mastic on Fiberglass Pipe Insulation	Original House
*B028-164	White Mastic on Fiberglass Pipe Insulation	Original House
B028-165	Fiberglass Pipe Wrap	Original House
B028-166	Fiberglass Pipe Wrap	Original House
*B028-167	Fiberglass Pipe Wrap	Original House
B028-168	Kiln TSI	Room 014
B028-169	Kiln TSI	Room 014
B028-170	Kiln TSI	Room 014
B028-171	Kiln Room Ceiling Felt	Room 014
B028-172	Kiln Room Ceiling Felt	Room 014
*B028-173	Kiln Room Ceiling Felt	Room 014
B028-174	Kiln Electrical Wiring	Room 014
B028-175	Kiln Electrical Wiring	Room 014
B028-176	Kiln Electrical Wiring	Room 014
B028-177	Gray/Tan Vinyl Flooring	Original House
B028-178	Gray/Tan Vinyl Flooring	Original House
*B028-179	Gray/Tan Vinyl Flooring	Original House
B028-180	Gray Mastic on Metal Ductwork	East Wing Crawl Space
B028-181	Gray Mastic on Metal Ductwork	East Wing Crawl Space
*B028-182	Gray Mastic on Metal Ductwork	East Wing Crawl Space
B028-183	Mudded Elbow on Fiberglass Insulated Line	East Wing Crawl Space
B028-184	Black Moisture Sealant	East Wing Crawl Space
B028-185	Black Moisture Sealant	East Wing Crawl Space

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*B028-186	Black Moisture Sealant	East Wing Crawl Space
B028-187	Window Glazing	Exterior Bld. #028
B028-188	Window Glazing	Exterior Bld. #028
B028-189	Window Glazing	Exterior Bld. #028
B028-190	Gray Exterior Caulking	Exterior Bld. #028
B028-191	Gray Exterior Caulking	Exterior Bld. #028
*B028-192	Gray Exterior Caulking	Exterior Bld. #028
B028-193	West Wing Built-Up Roofing Material	West Wing
B028-194	West Wing Built-Up Roofing Material	West Wing
*B028-195	West Wing Built-Up Roofing Material	West Wing
B028-196	Flashing Material	West Wing
B028-197	Flashing Material	West Wing
*B028-198	Flashing Material	West Wing
B028-199	Gray Flashing Caulk	West Wing
B028-200	Gray Flashing Caulk	West Wing
*B028-201	Gray Flashing Caulk	West Wing
B028-202	Black HVAC Mastic	West Wing
B028-203	Black HVAC Mastic	West Wing
*B028-204	Black HVAC Mastic	West Wing
B028-205	East Wing Built-Up Roof Material	East Wing
B028-206	East Wing Built-Up Roof Material	East Wing
*B028-207	East Wing Built-Up Roof Material	East Wing
B028-208	Flashing Material	East Wing
B028-209	Flashing Material	East Wing
*B028-210	Flashing Material	East Wing
B028-211	Black Roof Mastic	East Wing
B028-212	Black Roof Mastic	East Wing
*B028-213	Black Roof Mastic	East Wing
B028-214	Roofing Shingle	Original House
B028-215	Roofing Shingle	Original House
*B028-216	Roofing Shingle	Carriage House
B028-217	Roofing Felt	Original House
B028-218	Roofing Felt	Original House
*B028-219	Roofing Felt	Carriage House
B028-220	Black Roof Mastic	Original House
B028-221	Black Roof Mastic	Original House
*B028-222	Black Roof Mastic	Original House
B028-223	White Roofing Caulk	Original House
B028-224	White Roofing Caulk	Original House
*B028-225	White Roofing Caulk	Original House
B028-226	Roof Access Door Coating	Original House

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• B028-227	Roof Access Door Coating	Original House
*B028-228	Roof Access Door Coating	Original House
B028-229	Flashing Mastic	Original House
B028-230	Flashing Mastic	Original House
*B028-231	Flashing Mastic	Original House

APPENDIX C

Personnel Certifications

SCDHEC ISSUED
Asbestos ID Card

Michael Mincey

Expires



CONSULTMP

MP-00161 02/15/14

SCDHEC ISSUED
Asbestos ID Card

Glynn M Ellen

Expires



CONSULTMP	ASB-22641 02/15/14
AIRSAMPLER	AS-00079 02/25/14
SUPERHERA	SA-00455 02/25/14
CONSULTPD	PD-00098 06/13/14

APPENDIX D

SCDHEC Regulation Summary
SCDHEC Abatement Project Forms