TO CONTRACT DOCUMENTS ENTITLED:

PROJECT MANUAL FOR:

University of Missouri Teaching Hospital
Ambulatory Surgery Unit Lab Space Renovation

PROJECT NUMBER: CP171051

ADVERTISEMENT DATE: August 21, 2017

PREPARED FOR: The Curators of the University of Missouri

CONSULTANT: The Clark Enersen Partners
1251 NE Briarcliff Parkway
Kansas City, MO 64116
816-474-8237

Drawings and Specifications for the above noted project and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

SPECIFICATION CHANGES:
1. Specification Section Div 1 – SECTION 1.A BID FOR LUMP SUM CONTRACT
   a. Sub paragraph 3d Allowance – an updated bid form will be provided in a future addendum.
      i. Revise note
         1. “(4) Allowance Value: Bidder shall include in the base bid sum an allowance of $15,000.00 above and beyond work included in the Base Bid. The allowance shall only apply to work above and beyond the scope of base bid and alternates.” to read as
            a. (4) Allowance Value: Bidder shall include in the base bid sum an allowance of $15,000.00 above and beyond work included in the Base Bid. The allowance shall only apply to work above and beyond the scope of base Bid for demolition and or replacement of defective sanitary waste piping on the 1st floor not shown on the contract drawings, fire stopping or related work of existing fire/smoke penetrations discovered after completion of demolition work and Infection Control Measures to be used at the Owner's discretion during the course of the project.”

2. Specification Section Div 1 – SECTION 1.E SPECIAL CONDITIONS
   a. Sub paragraph 2a 5 Working Hours
      i. Revise note
         1. D) “Heavy demolition work will occur after normal working hour “ to read as “All demolition work will occur after normal working hour”
ii. Add note
   1. E) New construction work that creates noise or vibrations that could disrupt the operations of the business located on the first floor below the project will be required to be performed after normal working hours.

3. Specification Section 02 82 33 Friable and Non-Friable Asbestos Removal
   a. Add the attached spec section 02 82 33 Friable and Non-Friable Asbestos Removal

   a. See attached supporting document Hazardous Building material Survey – dated 8/24/17 for additional information on the materials identified as asbestos-containing material (ACM) which will be disturbed by the renovation.

DRAWING CHANGES:
5. Sheet F1.11 – Second Floor Finish Plan, Room Finishes Schedule, Legend & Details
   a. Room Finish Schedule
      i. Add Room Finish Schedule Remark #6 to CHEM. STO. L2013A
         1. CHEM. STO. L2013A is to be included in Alternate #1
      ii. CHEM. STO. L2013A
         1. Revise floor finish from RFT-1 to RSF-1

PREBID MEETING 8-24-17:
6. See Attached
   a. Prebid Powerpoint presentation
   b. Prebid Sign in Sheet

PREBID MEETING 8-30-17:
7. A second prebid meeting will be held at 9:30 a.m., C.T., August, 30, 2017 in the General Services Bldg., Rm 194A, University of Missouri, Columbia, Missouri, followed by a walk-through at the site. All interested bidders are invited to attend this meeting. A walk-through of the project may be scheduled by contacting the Prebid Inspection Guide at (573) 882-2228.

Attachments:
   i. Section 1.A Bid for Lump Sum Contract
   ii. Specification Section 02 82 33 Friable and Non-Friable Asbestos Removal
   iii. Hazardous Building Material Survey – Dated 8/24/17
   iv. Prebid Powerpoint presentation
   v. Prebid Sign in Sheet

END OF ADDENDUM # 001
SECTION 1.A

BID FOR LUMP SUM CONTRACT

Date:____________________________

BID OF
(hereinafter called "Bidder") a corporation* organized and existing under laws of the State of __________,
a partnership* consisting of ________________________,
an individual* trading as ________________________,
a joint venture* consisting of ________________________.

*Insert Corporation(s), partnership or individual, as applicable.

TO: Curators of the University of Missouri, Owner, at Campus Facilities, Planning, Design & Construction, Room L100 (Front Reception Desk), General Services Building, University of Missouri, Columbia, Missouri 65211

1. Bidder, in compliance with invitation for bids for construction work in accordance with Drawings and Specifications prepared by THE CLARK ENERSEN PARTNERS, entitled "UNIVERSITY OF MISSOURI TEACHING HOSPITAL – AMBULATORY SURGERY UNIT LAB SPACE RENOVATION", project number CP171051, dated AUGUST 7th, 2017 having examined Contract Documents and site of proposed work, and being familiar with all conditions pertaining to construction of proposed project, including availability of materials and labor, hereby proposes to furnish all labor, materials and supplies to construct project in accordance with Contract Documents, within time set forth herein at prices stated below. Prices shall cover all expenses, including taxes not covered by the University of Missouri’s tax exemption status, incurred in performing work required under Contract documents, of which this Bid is a part.

Bidder acknowledges receipt of following addenda:

Addendum No. __________________________ Dated __________
Addendum No. __________________________ Dated __________
Addendum No. __________________________ Dated __________
Addendum No. __________________________ Dated __________

2. In following Bid(s), amount(s) shall be written in both words and figures. In case of discrepancy between words and figures, words shall govern.

3. BID PRICING
a. Base Bid:
The Bidder agrees to furnish all labor, materials, tools, and equipment required to remodel the existing same day surgery area into new hospital laboratory space as well as mechanical, electrical and plumbing system renovation, replacement, and upgrades within and serving the space; all as indicated on the Drawings and described in these Specifications for sum of:

________________________________________ DOLLARS ($ ________________).

b. Additive Alternate Bids:

Above Base Bid may be changed in accordance with following Alternate Bids as Owner may elect. Alternates are as described in Section 1.H of Project Manual. Alternates are

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written in a priority order, but Owner is not required to accept or reject in order listed. This is a one (1) contract project, therefore, Alternates shall be studied by each Bidder to determine effect on Bids of Contractor and each Subcontractor and/or Material supplier.

(1) Additive Alternate No. 1: Resinous Epoxy Flooring
Provide resinous epoxy flooring in lieu of resilient sheet flooring in all areas as indicated on the room finish schedule and in the specifications. All for sum of:

______________________________ DOLLARS ($__________).

(2) Additive Alternate No. 2: Moveable Laboratory Casework
Provide Laboratory Mobile Carts, Mobile Suspended Base Cabinets, Laboratory Tables and associated Power and Data as indicated on the drawings and in the specifications. All for sum of:

______________________________ DOLLARS ($__________).

(3) Additive Alternate No. 3: Exterior Windows
Cut in new openings, modify steel stud framing, provide new exterior windows, patch existing Exterior Insulation Finish System (EIFS), provide new acrylic top coat on exterior wall, and provide roller shades as indicated on the drawings and in the specifications. All for sum of:

______________________________ DOLLARS ($__________).

(4) Additive Alternate No. 4: Unit Skylight
Provide a new unit skylight in place of the existing unit skylight as indicated on the drawings and in the specifications. All for sum of:

______________________________ DOLLARS ($__________).

c. Unit Prices:

(1) None

d. Allowance:

1) Allowance will be a separate line item in the Schedule of Values. Only the Owner will direct the use of the allowance. Applicable backup supporting documentation will be required and approved by the Owner prior to billing or payment.

2) This allowance amount shall not include contractor's overhead and profit. The Contractor shall include overhead and profit on the allowance amount in his bid.

3) Unused monies from any/all allowances shall be returned to the Owner by way of a formal change order at the conclusion of the project.

4) Allowance Value: Bidder shall include in the base bid sum an allowance of $15,000.00 above and beyond work included in the Base Bid. The allowance shall only apply to work above and beyond the scope of base bid for demolition and or replacement of defective sanitary waste piping on the 1st floor not shown on the contract drawings, firestopping or related work of existing fire/smoke penetrations discovered after completion of
demolition work and Infection Control Measures to be used at the Owner’s discretion during the course of the project.

4. PROJECT COMPLETION

a. Contract Period - Contract period begins on the day the Contractor receives unsigned Contract, Performance Bond, Payment Bond, and "Instructions for Execution of Contract, Bonds, and Insurance Certificates." Bidder agrees to complete project within two hundred and twelve (212) calendar days from receipt of aforementioned documents. Fifteen (15) calendar days have been allocated in construction schedule for receiving aforementioned documents from Bidder.

b. Commencement - Contractor agrees to commence work on this project after the "Notice to Proceed" is issued by the Owner. "Notice to Proceed" will be issued within seven (7) calendar days after Owner receives properly prepared and executed Contract documents listed in paragraph 4.a. above.

c. Liquidated Damages - In event that Contractor shall fail to substantially complete the work as defined in Contract Documents within time fixed for such completion set forth in Contract Documents, Contractor shall pay to Owner as damages for each calendar day of delay in completing work, sum of Four Thousand ($4,000) dollars per calendar day. In view of difficulty of accurately ascertaining loss that Owner will suffer by reason of delay in completion of work, said sum is hereby fixed and agreed as liquidated damages that Owner will suffer by reason of such delay and not as penalty.

d. Refer to Special Scheduling Requirements in Special Conditions for specific scheduling of the following activities:
   1. Special work times
   2. Incidental Floor Work (work in other occupied spaces for utility tie-ins)
   3. Crane work
   4. HVAC Testing and Balancing
   5. Utility Shut-downs, Outages and Tie-ins
   6. Refuse / Trash Removal and Materials Delivery

5. SUBCONTRACTOR LIST:

Bidder hereby certifies that the following subcontractors will be used in performance of Work:

NOTE: Failure to list subcontractors for each category of work identified on this form or listing more than one subcontractor for any category of work without designating the portion of work performed by each shall be grounds for rejection of bid. List name, city, and state of designated subcontractor, for each category of work listed in Bid For Lump Sum Contract. If work within a category will be performed by more than one subcontractor, Bidder shall provide name, city, and state of each subcontractor and specify exact portion of work to be performed by each. If acceptance/non-acceptance of Alternates will affect designation of a subcontractor, Bidder shall provide information, for each affected category, with this bid form. If Bidder intends to perform any designated subcontract work by using Bidder's own employees, then Bidder shall list their own name, city, and state. The bidder may petition the Owner to change a listed subcontractor only within 48 hours of the bid opening. See Information For Bidders Section 16 List of Subcontractors for requirements.

<table>
<thead>
<tr>
<th>Work to be performed</th>
<th>Subcontractor Name, City, State</th>
</tr>
</thead>
</table>

1.A - 3 – ADD 001
6. SUPPLIER DIVERSITY GOALS

a. The Contractor shall have as a goal subcontracting with Minority Business Enterprise (MBE) of ten percent (10%), Service Disabled Veteran Owned Business (SDVE) of three percent (3%) and combined Women Business Enterprise (WBE), Disadvantage Business Enterprise (DBE) and Veteran Owned Business of ten percent (10%) of awarded contract price for work to be performed.

b. Requests for waiver of this goal shall be submitted on the attached Application For Waiver form. A determination by the Director of Facilities Planning & Development, UM, that a good faith effort has not been made by Contractor to achieve above stated goal may result in rejection of bid.

c. The Undersigned proposes to perform work with following MBE/WBE participation level:

   MBE PERCENTAGE PARTICIPATION: ________________ percent (______ %)

   SDVE PERCENTAGE PARTICIPATION: ________________ percent (______ %)

   WBE, DBE, and VETERAN OWNED BUSINESS PERCENTAGE PARTICIPATION: ________________ percent (______ %)

d. A Supplier Diversity Compliance Evaluation form shall be submitted with this bid for each diverse subcontractor to be used on this project.

7. BIDDER'S ACKNOWLEDGMENTS

a. Bidder declares that he has had an opportunity to examine the site of the work and he has examined Contract Documents therefore; that he has carefully prepared his bid upon the basis thereof; that he has carefully examined and checked bid, materials, equipment and labor required thereunder, cost thereof, and his figures therefore. Bidder hereby states that amount, or amounts, set forth in bid is, or are, correct and that no mistake or error has occurred in bid or in Bidder's computations upon which this bid is based. Bidder agrees that he will make no claim for reformation, modifications, revisions or correction of bid after scheduled closing time for receipt of bids.

b. Bidder agrees that bid shall not be withdrawn for a period of ninety (90) days after scheduled closing time for receipt of bids.

c. Bidder understands that Owner reserves right to reject any or all bids and to waive any informalities in bidding.

d. Accompanying the bid is a bid bond, or a certified check, or an irrevocable letter of credit, or a cashier's check payable without condition to "The Curators of the University of
Missouri which is an amount at least equal to five percent (5%) of amount of largest possible total bid herein submitted, including consideration of Alternates.

e. Accompanying the bid is a Bidder's Statement of Qualifications. Failure of Bidder to submit the Bidder's Statement of Qualifications with the bid may cause the bid to be rejected. Owner does not maintain Bidder's Statements of Qualifications on file.

f. It is understood and agreed that bid security of two (2) lowest and responsive Bidders will be retained until Contract has been executed and an acceptable Performance Bond and Payment Bond has been furnished. It is understood and agreed that if the bid is accepted and the undersigned fails to execute the Contract and furnish acceptable Performance/Payment Bond as required by Contract Documents, accompanying bid security will be realized upon or retained by Owner. Otherwise, the bid security will be returned to the undersigned.

8. BIDDER'S CERTIFICATE

Bidder hereby certifies:

a. His bid is genuine and is not made in interest of or on behalf of any undisclosed person, firm or corporation, and is not submitted in conformity with any agreement or rules of any group, association or corporation.

b. He has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid.

c. He has not solicited or induced any person, firm or corporation to refrain from bidding.

d. He has not sought by collusion or otherwise to obtain for himself any advantage over any other Bidder or over Owner.

e. He will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin in connection with performance of work.

f. By virtue of policy of the Board of Curators, and by virtue of statutory authority, a preference will be given to materials, products, supplies, provisions and all other articles produced, manufactured, mined or grown within the State of Missouri. By virtue of policy of the Board of Curators, preference will also be given to all Missouri firms, corporations, or individuals, all as more fully set forth in "Information For Bidders."
9. **BIDDER’S SIGNATURE**

Note: All signatures shall be original; not copies, photocopies, stamped, etc.

<table>
<thead>
<tr>
<th>Authorized Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Name</td>
<td>Title</td>
</tr>
<tr>
<td>Company Name</td>
<td></td>
</tr>
<tr>
<td>Mailing Address</td>
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<tr>
<td>City, State, Zip</td>
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<tr>
<td>Phone No.</td>
<td>Federal Employer ID No.</td>
</tr>
<tr>
<td>Fax No.</td>
<td>E-Mail Address</td>
</tr>
</tbody>
</table>

Circle one: Individual Partnership Corporation Joint Venture

If a corporation, incorporated under the laws of the State of__________

Licensed to do business in the State of Missouri? ____yes _____no

(Each Bidder shall complete bid form by manually signing on the proper signature line above and supplying required information called for in connection with the signature. Information is necessary for proper preparation of the Contract, Performance Bond and Payment Bond. Each Bidder shall supply information called for in accompanying "Bidder's Statement of Qualifications.")

END OF SECTION
TECHNICAL SPECIFICATIONS - ASBESTOS-CONTAINING MATERIALS REMOVAL AND DISPOSAL

For

UNIVERSITY OF MISSOURI
PROJECT CP171051
SAME DAY SURGERY
LAB RENOVATION
(BUILDING H42-092)

Prepared for

UNIVERSITY OF MISSOURI – COLUMBIA
Campus Facilities
Columbia, Missouri 65211

Prepared by
UNIVERSITY OF MISSOURI-COLUMBIA
ENVIRONMENTAL HEALTH & SAFETY
PART 1 - GENERAL
Provisions of the General Conditions and Special Conditions are part of this Division.

1.1 SCOPE OF WORK

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

2. The Contractor shall furnish all labor, material, equipment, testing, services, permits, insurance, notifications, necessary or required to perform the work in accordance with applicable local, state, and federal regulations for the abatement of asbestos containing materials and for other work as specified in this section or as indicated in associated drawings, sketches, or reports of the work.

All fees required for notification requirements, renotifications, and/or inspections by the regulatory agencies shall be paid by the Contractor. Bulk sample analysis information required by the Department of Natural Resources, U.S. Environmental Protection Agency or 20 linear feet of asbestos-containing thermal system insulation. All authority having jurisdiction in conjunction with the notification shall also be provided by the Contractor unless provided within this section.

3. The work shall include the removal and legal disposal of non-friable asbestos containing materials including-

Non-friable asbestos:
The contractor shall remove and legally dispose of:
Twenty six (26) fire-rated doors, removed intact

1.2 DEFINITIONS

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

3. Aggressive Air Sampling - Sweeping of floors, ceilings and walls and other surfaces with the exhaust of a minimum of one (1) horsepower leaf blower or equivalent immediately prior to air monitoring.

4. Approved Waste Disposal Site - A solid waste disposal area that is authorized by the Department of Natural Resources to receive asbestos containing solid wastes.

5. Asbestos - The asbestiform varieties of serpentine (chrysotile, antigorite), riebeckite (crocidolite), cummingtonite-grumerite (amosite), anthophyllite, and actinolite-tremolite.

6. Asbestos Abatement Supervisor - An individual who directs, controls, or supervises others in asbestos abatement projects.

7. Asbestos Containing Building Material (ACBM) - Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.

8. Asbestos Containing Material (ACM) - Any material containing more than 1 percent asbestos by weight.

9. Barrier - Any surface that seals off the work area to inhibit the movement of fibers.

10. Category I Nonfriable ACM - Asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than one percent (1%) asbestos as determined using the method specified in 40 CFR part 763, subpart F, Appendix A, section 1, Polarized Light Microscopy.

11. Category II Nonfriable ACM - Any material, excluding category I nonfriable ACM, containing more than one percent (1%) asbestos as determined using the methods specified in 40 CFR part 763, subpart F, Appendix A, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

12. Containment - Area where asbestos abatement project is conducted. Area must be enclosed either by a glove bag or plastic sheeting barrier.

13. Contractor's Competent Person (Qualified Person) - One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32 (f); in addition, for Class I, II, III, and IV work, who is specially trained in training courses which meet the criteria of EPA’s Model Accreditation Plan (40 CFR Part 763) for project designer or supervisor, or its equivalent.

14. Decontamination Area - Enclosed area adjacent and connected to the regulated area which is used for decontamination of workers, materials, and equipment that are contaminated with asbestos.
15. Demolition - the wrecking or taking out of any load bearing structural member of a facility together with any related handling operations.

16. Disposal Bag - A properly labeled 6 mil. thick leak-tight plastic bag used for transporting asbestos waste from work area to disposal site.

17. Encapsulant (Sealant) - A liquid material which can be applied to asbestos-containing material and which prevents the release of asbestos fibers from the material either by creating a membrane over the surface or by penetrating into the material and binding its components together.


19. Enclosure - The construction of an airtight, impermeable, permanent barrier around asbestos containing material to control the release of asbestos fibers into the air.

20. Friable Asbestos Material - Any material containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

21. Glove Bag - A manufactured or fabricated device, typically constructed of six (6) mil transparent polyethylene or polyvinyl chloride plastic. This device consist of two (2) inward projecting long sleeves, an internal tool pouch and an attached, labeled receptacle for asbestos waste.

22. Homogeneous Work Site - Continuous areas with the same type of ACM and in which one type of abatement process is performed.

23. Negative Initial Exposure Assessment - An assessment by a "Competent Person" in which it is concluded that employee exposures during the job are likely to be consistently below the Permissible Exposure Levels.

24. Outside Air - Air outside of the containment.

25. Owner's Air Monitoring Firm - Air Monitoring conducted by a person who is not under the direct control of the person carrying out the asbestos abatement project and who has been selected by the Owner.

26. Owner's Air Sampling Professional - An individual who holds a valid certification from the State of Missouri. The individual shall conduct, oversee, or be responsible for air monitoring of asbestos abatement projects before, during, and after the project has been completed. The air sampling professional must hold a 40 hour AHERA Asbestos Contractor/Supervisor Certificate, and supervised by the Owner's Certified Industrial Hygienist (C.I.H.).

27. Owner's Air Sampling Technician - An individual who has been trained by and is under the supervision of an air sampling professional to do air monitoring before, during, and after the asbestos abatement project. The air sampling technician must hold a 40 hour AHERA Asbestos Contractor/Supervisor Certificate, and be supervised by the Owner's Certified Industrial Hygienist (C.I.H.).
28. Owner’s Certified Industrial Hygienist (C.I.H.) - an Industrial Hygienist, Certified in Comprehensive Practice by the American Board of Industrial Hygiene. The Owner’s C.I.H. must also be certified by the Missouri Department of Natural Resources as an air sampling professional and hold a 40 hour AHERA Asbestos Contractor/Supervisor Certificate. The Owner will identify C.I.H. before application for permit.

29. Personal Monitoring - Sampling of the asbestos fiber concentrations within the breathing zone.

30. Regulated Asbestos Containing Material (RACM) - Friable asbestos material; Category I nonfriable ACM that has become friable; Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

31. Remove - To take out RACM or facility components that contain or are covered with RACM from any facility.

32. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component.

33. Repair - The restoration of asbestos material that has been damaged. Repair consists of the application of rewettable glass cloth, canvas, cement or other suitable material. It may also involve filling damaged areas with non-asbestos substitutes and re-encapsulating or painting previously encapsulated materials.

34. Strip - To take off RACM from any part of a facility or facility components.

35. Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos containing waste material.

36. Work Area - A specific isolated area, other than the space enclosed within a glove bag, in which friable asbestos-containing materials is required to be handled. The area is designated as a work area from the time that the area is secured and access restrictions are in place. The area remains designated as a work area until the time that it has been cleaned in accordance with any requirements applicable to the operations conducted.

1.3 CODES AND REGULATIONS

1. General Applicability Of Codes, Regulations and Standards - All applicable codes, regulations, standards, statutes, laws, and rules have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith. Where conflicts arise, the most stringent specification shall apply.
2. Contractor Responsibility - The Contractor shall assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations. The Contractor shall hold the owner harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulations on the part of the contractor, contractor's employees, or contractor's subcontractors.

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

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

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

   3. U.S. Department of Transportation (DOT) including but not limited to:
      

   4. State of Missouri including but not limited to:
      
      1. H.B. 77, 85th General Assembly.
      
      2. Missouri Air Conservation Law Chapter 643.
      
      3. Missouri Department of Natural Resources, Division 10, Chapter 6 of the Code of State Regulations as follows:
(1) 10 CSR 10-6.020, Definitions

(2) 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants

(3) 10 CSR 10-6.230, Administrative Penalties

(4) Volume 18, Missouri Register, Page 44

(5) 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements

1.4 NOTIFICATIONS

1. Notifications meeting the requirements of Volume 18, Missouri Register, page 44, shall be completed and sent by the Contractor not less than ten (10) days before the intended starting date of the project. Send notification to the following:

1. Department of Natural Resources
   Air Pollution Control Program (Asbestos)
   P.O. Box 176
   Jefferson City, Missouri  65102

2. U.S. Environmental Protection Agency
   Region VII
   Air & Toxic Division, Air Branch
   ATTN:  Air Compliance
   726 Minnesota Avenue
   Kansas City, Kansas  66101

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

4. If the project is under the jurisdiction of the Kansas City Air Quality Section, St. Louis County Air Pollution Control Branch, or the Springfield-Green County Air Pollution Control Authority, send notification directly to the appropriate agency.

1.5 SUBMITTALS

1. The following will be submitted by contractor prior to commencement of work for approval by the Owner's Certified Industrial Hygienist (one copy for the Owner's Representative). Owner's C.I.H. will return reviewed copies to contractor and Owner's Representative.

1. One copy of material safety data sheets (MSDS) for products to be used by the Contractor in the performance of his work. Contractor will also maintain copies of MSDS on site per OSHA.
2. One copy of the notifications to, or any correspondence with, the regulatory agencies. Submit a listing of all prior regulatory violations.

2. Friable Abatement:

1. Current Certificates of training and statement of qualifications for the project asbestos abatement supervisor and the Missouri Asbestos Occupational Certificates for all project personnel. List a summary of project personnel and contact phone numbers.

2. Name, address, and contact person's name of testing laboratory or laboratories to be utilized analyzing samples for bulk analysis or air samples.

3. Submit a detailed plan of the procedures proposed for use in complying with requirements of this specification and Volume 18, Missouri Register, page 44, and 29 CFR 1926.1101. Include in the plan the layout and location of barriers, decontamination units, route of ingress and egress for work area, methods used to assure safety of building occupants and visitors, methods used to isolate or closing out of HVAC system, personal air monitoring strategy, method of removal of material, and engineering controls utilized to prevent emissions from the work area.

4. Provide a disposal plan to detail type of disposal container, method of transportation to disposal site, waste hauler, and disposal site.

5. Copy of notifications required as part of the emergency notification plan.

3. Non-Friable Abatement:

1. Submit a detailed plan of the procedures proposed to minimize emissions and to prevent the material from becoming friable during removal.

2. Copy of emergency protection plan to be used if the nonfriable material should become friable during removal.

3. Current Certificates of training and statement of qualifications for the "Competent Person".

4. One copy of the Negative Initial Exposure Assessment.

4. Upon completion of the abatement work, the following information shall be submitted to the Owner's Representative.

1. Waste disposal receipts and waste shipment record on all asbestos waste removed from the project.

5. Upon completion of the abatement work, the following information shall be submitted by the Owner's C.I.H. to the Contractor.
1. Air sampling test results for personal (non-OSHA) and final clearance air samples taken under the supervision of Owner’s Certified Industrial Hygienist. Results must be in writing in final report form.

2. Written certification from the Owner’s Certified Industrial Hygienist.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 SUPERVISION OF ABATEMENT

1. The Contractor shall designate a competent supervisor subject to the approval of the Owner’s C.I.H. and the Owner’s Representative. The supervisor shall be the Contractor’s representative on the project and shall meet the requirements of all applicable regulations and perform the following minimum requirements.

1. Be Certified by the State of Missouri as an Asbestos Abatement Supervisor, a minimum of one year prior full time experience in asbestos abatement work and a minimum of two years experience as a supervisor, and be qualified as a Competent Person in accordance with OSHA regulation 1926.1101.

2. Be on site and supervise all abatement work in accordance with OSHA and Volume 18, Missouri Register, page 44.

3. Conduct all OSHA required air monitoring.

4. Maintain a daily log on the project documenting events, visitations, problems, equipment failures, accidents, and inspections.

5. Be responsible for implementation of first aid, safety training, respiratory protection, and ensuring all workers are trained in emergency procedures.

6. Be responsible for conducting a visual inspection of the work area prior to a visual inspection by the Owner's Certified Industrial Hygienist. Inspection shall be documented.

3.2 NEGATIVE INITIAL EXPOSURE ASSESSMENT

1. The Contractor must conduct a Negative Initial Exposure Assessment (non-friable asbestos) prior to removal of the asbestos material. The Negative Initial Exposure Assessment shall be performed by a "Competent Person" to determine whether the material may be removed and maintained in a nonfriable condition. If the material cannot be removed without becoming friable then the contractor shall comply to the requirements in this specification at no additional cost to the Owner.

2. The method of removal is the Contractor’s option. However, in the event of any of the following:
1. Visible emissions are observed

2. Sanding, grinding, cutting, or abrading of the material

3. Air samples exceed 0.1 f/cc

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

3.3 WORKER PROTECTION & TRAINING

1. The Contractor shall be responsible for providing his employees with proper respiratory protection, respiratory training, written respirator program, medical examinations, maintaining medical records, and protective clothing and equipment to comply with OSHA requirements.

2. The Contractor shall be responsible for all testing and costs incurred for complying with requirements of OSHA regulations for Personal Air Sampling.

3. All workers shall be trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and protective measures.

4. All workers shall hold valid diplomas as accredited Asbestos Abatement Workers as required by 10 CSR 10-6.250.

3.4 INDEPENDENT TESTING LABORATORY

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

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

   2. All bulk samples shall be analyzed by a testing laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

3.5 OWNER'S AIR SAMPLING PROFESSIONAL & CERTIFIED INDUSTRIAL HYGIENIST

1. It will be the Owner's responsibility to hire an Air Sampling Professional & Certified Industrial Hygienist. The Air Sampling Professional & Industrial Hygienist will also be required to perform the following duties as a minimum:
1. Approval of the Contractor's work plan and methods of abatement to meet regulatory requirements and ensure the health and safety of University faculty, staff, and students.

2. Verify that the contractor is satisfactorily performing personal air monitoring as directed by OSHA regulations.

3. Visual inspection of the work area and final clearance air monitoring.

4. Certify in writing that the Contractor's procedures, methods and practices were, to the best of my knowledge and belief, in compliance with current EPA, OSHA, State and/or applicable local regulations and that the work areas meet the requirements for final clearance testing and account of any known deviations.

5. Issue final air clearance.

3.6 EMERGENCY PROTECTION PLAN

1. The contractor shall be responsible for developing a written Emergency Protection Plan and shall maintain this plan on site. The plan shall include considerations of asbestos leakage from the site, fire, explosion, toxic atmospheres, electrical hazards, slips, falls, and heat related injury. All employees shall be instructed and trained in the procedures.

2. Emergency protection plan shall also include written notification of police, fire and medical personnel of the planned abatement activities, work schedule, and layout of work area, particularly barriers that may affect response capabilities.

3.7 LOCAL AREA PROTECTION & SITE SECURITY

1. The contractor shall be responsible for all areas of the building used by him and/or subcontractors in the performance of the work. Contractor shall exert full control over the actions of all employees and other persons with respect to the use and preservation of the existing building, except such controls as may be specifically reserved to the owner.

2. Contractor has the right to exclude from the work area all persons who have no purpose related to the work or its inspection, and shall require all persons in the work area to observe the same regulations required of Contractor's employees.

3. The contractor shall have control of site security during abatement operations in order to protect work environment and equipment. Contractor shall have the owners assistance in notifying building occupants of impending activity and enforcement of restricted access by owners employees.

4. The contractor shall keep a minimum of two 10 lbs. type ABC fire extinguishers on site. One shall be maintained outside the work area and one inside the work area. The employees shall be trained in the operation of extinguishers.
5. Where areas cannot be isolated by existing walls and doors from employees, clients, or the public, barriers must be constructed of 1/2" plywood and 2"x4" framing 16" o.c. to isolate the area. The barriers must be installed in such a manner to prevent damage to existing walls, floors, or ceilings. Barrier may have a lockable door.

6. The contractor shall maintain the work area free from rubbish, debris, and dirt and keep a clean, safe working area.

7. The Contractor shall provide warning signage around the regulated area as required by OSHA.

8. The Contractor shall isolate any and all air supply and returns to the abatement space as required by OSHA. Contractor shall coordinate with the Owner's Representative.

9. The Contractor shall keep all areas where adhesive stripper is in use (such as mastic removal) under negative pressure and exhausted to the outside ambient air.

3.8 FINAL CLEARANCE REQUIREMENTS (FRIABLE ASBESTOS)

1. Upon completion of the abatement work, the supervisor shall perform a visual inspection of the work area. If satisfactory, the supervisor shall then request the Owner's C.I.H. or the C.I.H.'s air sampling technician to perform a visual inspection. When the Owner's C.I.H. feels the area is ready based on the results of their visual inspection, the Contractor shall apply a lockdown encapsulant. Following application of lockdown encapsulant, the Owner's C.I.H. shall perform the final clearance sampling for airborne fiber concentrations.

2. The Owner's C.I.H. or designee will perform final clearance testing per the following requirements:

   1. Aggressive sampling shall be required for all areas where removal has taken place with the exception of glove bag projects where nonaggressive sampling is permitted.

   2. P.C.M. samples analyzed on site shall be counted by an accredited registered microscopist.

   3. For areas specifically specified for clearance by Transmission Electron Microscopy, the method shall be NIOSH 7402.

3. Any work areas failing to meet the clearance requirements of this section shall be recleaned and retested at the contractor's expense until satisfactory levels are obtained.

4. The Owner's C.I.H. shall provide a written report of the air monitoring activities to the contractor within 7 days after the final clearance testing.

3.9 REESTABLISHMENT OF THE WORK AREA AND SYSTEMS

1. Reestabishment of the work area shall only occur after the contractor has received final clearance in writing from the Owner's C.I.H.
2. All damage to finishes, equipment, and/or the area affected by the abatement shall be repaired by the contractor to equal or better condition as it was prior to the work, at no cost to the owner.

3.10 WASTE DISPOSAL

1. All asbestos containing waste and/or asbestos contaminated debris shall as a minimum be double bagged in approved 6 mil. disposal bags. Each bag shall be tagged to meet requirements of NESHAPS with an asbestos caution label and a source identification label.

2. Transportation shall meet the requirements of all regulatory agencies for asbestos containing materials and shall be transported in an enclosed truck.

3. The waste disposal site shall be approved by the Missouri Department of Natural Resources for asbestos disposal. A chain of custody letter/waste shipment record and disposal receipts shall be provided to the owner for all materials disposed of.

3.11 DRAWINGS

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

3.12 REPORTS

1. Reports, when provided, are intended to be used as a basis for the type and composition of the asbestos present for both bidding purposes and for the information required for the notifications to the governing agencies.
MU EHS has completed a survey of a specific area on 2nd floor of the Ambulatory Care Unit (Building 42-092) of University of Missouri Teaching Hospital, as defined by the survey request. The area involved in the project was previously known as Same Day Surgery, on the 2nd floor above the Diabetes Center and Mason’s Eye Clinic. The survey was made to identify asbestos-containing material (ACM) which will be disturbed by the upcoming renovation; and to identify lead paint that might represent a potential worker safety hazard and/or might require special handling and waste disposal prior to the demolition or renovation.

The asbestos inspection was conducted to satisfy the requirements of 40CFR 61, subpart M, which stipulates that all buildings be “thoroughly inspected” for asbestos before the commencement of renovation or demolition activities. The asbestos inspection was conducted by Yulia Pushechnikova (Missouri Asbestos Inspector #19060, expires 5/3/18) and Pete Kohler (Missouri Asbestos Inspector #10883, expires 1/19/18) who prepared this report. The survey was conducted in July, 2017 and the report was completed on July 28, 2017.

Fire-rated doors are presumed to have asbestos-containing cores. As a result of the survey, no other asbestos-containing material was identified in the scope of the project.
Floor tile was analyzed by TEM; other samples were analyzed by PLM, with an additional step in the preparation of hard-to-analyze samples like adhesive black mastic (PLM NOB).

FIELD OBSERVATIONS

Roughly, the south half of the area consists of offices. Flooring is carpet squares or roll carpeting on concrete, or sheet vinyl flooring on concrete. The sheet vinyl was sampled and analyzed. It is negative for asbestos. Cove base is vinyl throughout, and is not suspect material. Flooring in rest rooms is ceramic tiles and was not sampled.

The ceiling is typically a drop ceiling system, with 2x2 acoustic ceiling tiles in a suspended metal grid. Some ceiling tiles in the Missouri Orthopedic Institute phone center are 2x4. The various sizes and styles of ceiling tiles were sampled and analyzed. The ceiling tiles do not contain asbestos.

Walls are typically gypsum board on metal studs. The sheet rock joint compound was sampled and analyzed at various locations, sufficient to be representative of the area. Sheet rock joint compound does not contain asbestos.

Above the drop ceiling, the HVAC ductwork is typically bare sheet metal and fiberglass flex-duct. Insulation on pipes is fiberglass or black neoprene. None of the insulation materials is considered suspect. No spray-on was found anywhere inside the scope of the project. The deck above this area is metal.

The north part of the project area was previously the same-day surgery operating rooms, with supporting offices, storage, and locker rooms. The main north/south corridor has sheet vinyl flooring on concrete. There is black mastic in some spots and blond mastic in some. The sheet vinyl flooring is negative for asbestos. The black mastic is also negative for asbestos. Because it is unusual for black mastic to be negative for asbestos, I collected additional samples, and repeated the analysis. The black mastic is negative for asbestos. The blond mastic is not considered suspect and was not analyzed.
The sheet goods in the operating rooms were thoroughly sampled by EHS for an earlier project, #102329, in August of 2011. The sheet vinyl, its mastic, and floor leveler found in several locations were all found negative for asbestos. During that survey, I found blond mastic in Corridor SS-C201, beneath sheet vinyl flooring. This time, I found some black mastic in the same corridor. Both varieties of mastic are negative for asbestos.

There are several parts of this north wing with 12” floor tile, laid with black mastic on concrete. The 12” floor tile was sampled in the Men’s Locker Room (SS-255), Anesthesia Workroom SS-257, and Corridor SS-C203, which is the corridor that defines the project on the northwest edge. The 12” floor tile does not contain asbestos. The mastic does not contain asbestos.

Research Lab SS-256 has orange sheet vinyl flooring, different from other floors in the area. The sheet goods are put down with clear glue. The sheet vinyl was sampled and analyzed. The flooring and the adhesive are negative for asbestos.

The ceiling is a drop ceiling system in parts, and a hard sheet rock ceiling in other areas. The sheet rock ceiling has access panels, and above both types of ceiling, I found the same materials: fiberglass and neoprene piping, fiberglass flex-duct, and no spray-on. There is no suspect material in the ceilings of this project area.

Many doors in the area are fire-rated. Fire doors are presumed to have asbestos-containing cores. If the hardware all stays intact on these doors, they can be re-purposed. If they are to be discarded, or the hardware has to be changed, it is an asbestos project, and has to be done by certified asbestos workers.

The air handler for this space is in a separate building, to the north of the cooling towers between the east garage and the new Patient Care Tower. The north air handler, S2-7, serves the area of the project. The air handler has no external insulation. Ductwork is foil-faced fiberglass or bare sheet metal. Associated piping is fiberglass or black neoprene. The room has a bare concrete floor and walls. The deck above is metal with no spray-on present. I did not find any suspect material in the mechanical room.
<table>
<thead>
<tr>
<th>SAMPLE ID</th>
<th>LOCATION/DESCRIPTION</th>
<th>ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>170714-01</td>
<td>University Hospital, SS-205A, sheet vinyl flooring, faux wood</td>
<td>7% synthetic, 93% non-fibrous</td>
</tr>
<tr>
<td>170714-02</td>
<td>SS-200, sheet rock joint compound</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170714-03</td>
<td>Corridor SS-C205, 12” white floor tile</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170714-03A</td>
<td>Black mastic from tile above</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170714-04</td>
<td>Corridor SS-C202, pink sheet vinyl flooring</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170714-04A</td>
<td>Adhesive from sample above</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170714-05</td>
<td>SS-228D, sheet rock joint compound</td>
<td>28% perlite, 72% non-fibrous</td>
</tr>
<tr>
<td>170714-05A (sheet rock panel)</td>
<td>Sheet rock from sample above</td>
<td>78% cellulose, 22% non-fibrous</td>
</tr>
<tr>
<td>170717-01</td>
<td>SS-200, 2x2 ceiling tile, recessed, gray body</td>
<td>29% cellulose, 38% mineral wool, 29% perlite, 4% non-fibrous</td>
</tr>
<tr>
<td>170717-02</td>
<td>SS-200, above drop ceiling, gray caulk on sheet rock</td>
<td>6% wollastonite, 94% non-fibrous</td>
</tr>
<tr>
<td>170717-03</td>
<td>SS-208, sheet rock joint compound</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170717-03A</td>
<td>Sheet rock tape from sample above</td>
<td>100% cellulose</td>
</tr>
<tr>
<td>170717-03B</td>
<td>Sheet rock board from sample above</td>
<td>77% cellulose, 23% non-fibrous</td>
</tr>
<tr>
<td>Date</td>
<td>Sample Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>170717-04</td>
<td>Corridor SS-C207, 2x2 ceiling tile</td>
<td>28% cellulose, 37% mineral wool, 28% perlite, 7% non-fibrous</td>
</tr>
<tr>
<td>170717-05</td>
<td>SS-217, 2x4 ceiling tile, recessed</td>
<td>29% cellulose, 38% mineral wool, 29% perlite, 4% non-fibrous</td>
</tr>
<tr>
<td>170717-06</td>
<td>SS-217, sheet rock</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170717-07</td>
<td>SS-228, sheet rock joint compound</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170717-07A</td>
<td>Vinyl wallpaper from sample above</td>
<td>36% synthetic fibers, 64% non-fibrous</td>
</tr>
<tr>
<td>170717-07B</td>
<td>Wallpaper adhesive from sample above</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170717-07C</td>
<td>Sheet rock tape from sample above</td>
<td>100% cellulose</td>
</tr>
<tr>
<td>170717-08</td>
<td>SS-237, soffit hanging from ceiling, sheet rock joint compound</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170717-08A</td>
<td>Sheet rock from sample above</td>
<td>17% cellulose, 7% glass fibers, 76% non-fibrous</td>
</tr>
<tr>
<td>170718-01</td>
<td>Corridor SS-C200, sheet vinyl flooring</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170718-01A</td>
<td>Black mastic from sample above</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170718-02</td>
<td>Corridor SS-C201, sheet vinyl flooring</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170718-03</td>
<td>SS-255, 12” tan floor tile</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170718-03A</td>
<td>Black mastic from sample above</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170718-04</td>
<td>Corridor SS-C203, 12” tan floor tile</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170718-04A</td>
<td>Black mastic from sample above</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Results</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>170724-01</td>
<td>Corridor SS-C201, north end, black mastic beneath sheet vinyl flooring</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170726-01</td>
<td>SS-257, 12” tan floor tile</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170726-01A</td>
<td>Black mastic from sample above</td>
<td>100% matrix material, no asbestos detected</td>
</tr>
<tr>
<td>170726-02</td>
<td>SS-256, orange sheet vinyl flooring</td>
<td>100% non-fibrous</td>
</tr>
<tr>
<td>170726-02A</td>
<td>Clear adhesive from sample above</td>
<td>100% non-fibrous</td>
</tr>
</tbody>
</table>

**ASBESTOS SUMMARY:** There are twenty six (26) fire-rated doors in the scope of the project, which are presumed to have asbestos-containing cores.

**ADDITIONAL HAZARDOUS MATERIALS REPORT**

In addition to the material listed above, the following items will need to be removed from the project area:

**HAZARDOUS WASTE**
- Forty three (43) door closers
- Fourteen (14) thermostats

**UNIVERSAL WASTE**
- Three hundred fifty six (356) four foot fluorescent light bulbs, and their fixtures
- Fifty four (54) two foot fluorescent light bulbs, and their fixtures
- Seven (7) smoke detectors
- Fifteen (15) exit signs

**RECLAIM/RECYCLE**
- One drinking fountain

MU EHS Resource Recovery Center (882-3736) can offer assistance with disposing of this material.
LEAD SURVEY REPORT

As a result of the lead survey, lead-containing materials were identified.

Operating Room #1 (SS-272) has lead shielding in the wall cavities.

The EPA and the U.S. Department of Housing and Urban Development (HUD) consider lead-based paint as containing a lead concentration equal to or greater than 1.0 milligram per square centimeter (mg/cm²) or 0.5% lead by weight, as defined by Title X of the 1992 Housing and Community Development Act. The US Consumer Product Safety Commission considers paint with up to 600 ppm of lead to be “Lead Free”.

Finished surfaces were tested for lead, using a Niton XRF analyzer. The XRF was checked before the survey and found to be in calibration. The survey was made by Pete Kohler (Missouri Lead Inspector #00783, expires 5/17/19.) The lead survey was conducted on July 26-28, 2017.

OSHA has found that certain work, including aggressive disturbance of the painted surface, may result in lead levels exceeding the Action Level or the Permissible Exposure Limit (PEL)- even when the concentration is below 1 mg/cm².

Lead shielding was identified within the wall cavity of Operating Room #1 (SS-272) and its service closet (SS- 271). The lead shielding should be collected and recycled. The other operating rooms were found not to contain lead shielding.

Glazed ceramic tiles in the operating rooms and parts of the locker rooms gave high lead readings. The glaze and the clay body itself contain lead. Because of these high lead readings, it was determined to have this material tested for toxicity leaching characteristics (TCLP). It was decided to test for the eight RCRA metals This analysis came back showing both colors of ceramic tile are below the EPA action levels. The ceramic tile does not need to be collected separately, and can be disposed of as general demolition/construction debris, and sent to a sanitary landfill. The TCLP analysis is included at the end of the report.
The X-ray viewing window in SS-272 contains lead. This window may be disposed of as general construction debris, and sent to a sanitary landfill.

**LEAD SAMPLING TABLE**

Lead readings are in mg/cm².

### SS-200

Ceiling:
- White soffit- .03

Walls:
- white sheet rock- .01, .04, .01, .03

Doors:
- varnished wood- .01
- white metal frame- .01, .02, .07

Windows:
- Veneer frame- .02, .04, .07

### SS-208

Walls:
- Yellow sheet rock- .01, .01

### SS-211

Walls:
- White sheet rock- .01, .02

### SS-217

Walls:
- Yellow sheet rock - .01, .04, .01, .03

Doors:
- Varnished wood - .04

Floor:
- Faux wood sheet vinyl - .10, .06

SS-C207

Walls:
- White wallpaper - .05, .04, .03, .06

Doors:
- White metal frame - .01, .02, .03, .05
  - Varnished wood - .49, .01, .08, .06, .06

SS-213

Walls:
- Red wallpaper - .01
  - White wallpaper - .05, .06

Doors:
- Varnished wood - .04

SS-229

Walls:
- White wallpaper - .03, .07, .04, .06

SS-228C

Walls:
- Tan sheet rock - .04, .05, .01, .01, .05
• White vinyl strip protector-.08, .02
• White plastic corners-.13, .06, .08
• Column wallpaper-.09, .06

Doors:
• Varnished wood-.04
• Brown metal frame-.03, .05, .01, .02

Floors:
• Faux wood sheet vinyl-.13, .06, .08

SS-228
Veneer trim-.05, .03

SS-231A
Walls:
• White wallpaper-.06
• Red wallpaper-.06

SS-231C
Red wallpaper-.04, .01

SS-237
White wallpaper-.07, .03, .06

SS-238
Walls:
• Blue wallpaper-.23, .24, .18
• White wallpaper-.06

SS-233
Walls:
• Tan metal lockers-.04, .06
• Red wallpaper-.05, .05

SS-C201

Ceiling:
• White sheet rock-.01
• Blue plastic crown molding-.03

Walls:
• Multi-color wallpaper-.13, .10, .07, .11, .09, .08
  • Ceramic tile- **11.93**
• Electric box-.02

Doors:
• Varnished wood-.02, .02, .01, .02, .02, .04
• Pale blue metal frames-.07, .04, .03

SS-249

Walls:
• Pink sheet rock-.05, .09, .07
• Veneer cabinets-.11, .06, .05
• Lockers-.01, .01, .04
• White shower tile- **12.02, 10.7**

Floors:
• 2” ceramic shower tile- **2.27**, .01, .04, .04, .01
• Epoxy-.02, .09

SS-252

Walls:
• Pink stall dividers-.45, .05, .35

Floors:
• Pink tile- **7.74, 10.21**
Doors:
- White frame - .01, .04

**SS-253**

Walls:
- Veneer cabinets - .01
- Pink sheet rock - .01, .01

Doors:
- White frame - .03, .01
- Varnished wood - .05, .01

Floors:
- Pink ceramic tile: **12.07, 8.26**

**SS-255**

Walls:
- Tan lockers - .01, .01, .02

Floors:
- White shower tile: **12.01**

**SS-258**

Doors:
- Varnished wood - .04
- Frame - .01, .01

**SS-261A**
Walls:
- White sheet rock - .05, .04
- Blue sheet rock - .02

Doors:
- Varnished wood - .02, .02

SS-266

Walls:
- Ceramic tile - 10.17, 12.96, 12.70, 10.97

Doors:
- Varnished wood - .58, .01

SS-270

Walls:
- Ceramic tile - 13.93, 10.95, 10.25

Rooms between 270 and 272

Walls:
- Ceramic tile - 11.33, 12.54

SS-272

Ceiling:
- Sheet rock - .03, .01, .01

Walls:
- Ceramic tile - 10.27, 9.81, 11.25

Doors:
- White metal frame - .01, .04
Window:

- Shield glass - 16.76

Floor

- White vinyl - .06, .04

Walls

- **white sheet rock**- 0.05, 0.02, 0.01, 0.01

- **varnished door**- 0.05, 0.01

- **blue metal door frame**- 0.04, 0.03

**SS-257**

- Varnished door- 0.06, 0.03

- **blue metal door frame**- 0.04, 0.03

**SS-264**

- **white sheet rock walls**- 0.03, 0.04, 0.05

**SS-265**

- **tan sheet rock walls** – 0.04, 0.05, 0.01, 0.05

**SS-226**

- **tan wallpaper**- 0.04, 0.04, 0.03

- **red wallpaper**- 0.04, 0.04
**SS-227**
- tan wallpaper- 0.01, 0.04, 0.06
- red wallpaper- 0.04, 0.04

**SS-266**
- sheet vinyl floor (on concrete)- 0.10, 0.01, 0.43, 0.46

**SS-268**
- sheet vinyl floor (on concrete)- 0.01, 0.05, 0.47, 0.42

**SS-270**
- sheet vinyl floor (on concrete)- 0.01, 0.05, 0.47, 0.65

**SS-272**
- sheet vinyl floor (on concrete)- 0.41, 0.51, 0.47
- sheet rock ceiling- 0.38, 0.50, 0.42
- entry door (below 4 foot height)- 0.06, 0.02, 1.18, 1.65

**SS-271**
- sheathing inside sheet rock wall- 21.83

**SS-272 (readings in parts per million)**
- back of 4” ceramic tile (unglazed) – 13,900 ppm, 9772 ppm, 8297 ppm

**SS-266 (readings in parts per million)**
- back of 4” ceramic tile (unglazed)- 5755 ppm, 6463 ppm, 6551 ppm

**LEAD SUMMARY**
- Lead sheathing in Operating Room #1 (SS-272)
  - Four thousand one hundred twenty five (4125) square feet within walls of SS-272 and Service Closet SS-271

- Three (3) square feet of high-lead glass in viewing window of X-ray booth in SS-272
- Sixteen thousand five hundred (16,500) square feet of white ceramic tile in Operating rooms, service closets, and locker rooms

- One thousand one hundred eighty five (1,185) square feet of pink ceramic tile in the locker rooms

The lead sheathing should be removed and reclaimed or recycled. The lead window can be disposed of as demolition debris. The ceramic tile can be disposed of as demolition debris.
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Project:  
The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation

Project Number:  
CP171051

CONSULTANT:  
The Clark Enersen Partners  
816-474-8237  
hadley.stolte@clarkenersen.com

PROJECT MANAGER:  
Brad Rackers, MU Campus Facilities

CONSTRUCTION PROJECT MANAGERS:  
Ross Reinkemeyer, MU Campus Facilities

MUHC CLIENT:  
Daniel Zumwalt, MU Healthcare Architect

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation
AGENDA

- General Information for Bidders
- Brief Project Description
- Questions / Answers
- Tour of Jobsite
GROUND FLOOR

Main Fire Alarm Panel

New Branch Power from PCT Main Electrical Room

FIRST FLOOR

New Mechanical & Electrical Equip.

Demolition & new work in First Floor Plenum

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation
The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation

- Electrical Room
- Laboratory Renovation
- Telecomm. Room

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation
The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation

Office Areas
Restrooms
Breakroom / Lockers
Storage
D.I. Water
Cold Room
Clinical Laboratories
Pneumatic Tube Stations

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation
ADD ALTERNATE No. 1

- Additive Alternate No. 1: Resinous Epoxy Flooring:
  - EPX-1 in lieu of RSF-1 in all laboratory spaces
  - See sheet F1.11 for Room Finish Schedule

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation
ADD ALTERNATE No. 2

- **Additive Alternate No. 2: Moveable Laboratory Casework:**
  
  - Mobile Carts
  - Suspended Base Cabinets
  - Laboratory Tables
  - Power & Data attached to carts
  
  - See sheet LF0.21 for types of casework in add alternate

ADD ALTERNATE No. 3

- **Additive Alternate No. 3: Exterior Windows:**
  
  - New Exterior Windows
  - Modify steel stud framing at exterior wall
  - Patch existing EIFS at perimeter of windows
  - New topcoat at existing east exterior wall
  - Roller shades at all new openings
  
  - See sheet A2.10 for exterior elevation and wall section
ADD ALTERNATE No. 4

- Additive Alternate No. 4: Unit Skylight:
  - Replace the existing unit skylight with a new unit skylight
  - See sheet A1.30 for Roof Plan

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation

Mechanical Items

Demo
Second Floor work is complete demolition except for a few exhaust ducts and plumbing vents.
First floor work is being done in an occupied area and work will occur after hours.

HVAC/Plumbing
Coordination Drawings for all trades will be required submittals.
The DI water system has been designed around Culligan, who currently services the hospital. Contact is David Barnard. The DI system will be a tight fit in new closet space so a proper plan needs to be in place. Please note alarm needs to be placed in IR Chem. space.

Mechanical Rooms
Tying into existing chilled water system.
Creating a new heating water system using low pressure steam in place.
Condensate for steam-fed equipment will need to be tunneled below floor to existing pit for gravity drainage.
Will need to tie existing heating coils on 1st floor into new heating water system- so a planned shut-down for those zones needs to take place.
The existing control panel in the southeast needs to be removed and the single point moved to a new controller.
The existing compressor to the southeast is planned to stay operational and serve single piece of new lab equipment.

Roof
Refer to plans for fans that need to be removed and fans that stay operational.

The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation
## Electrical Items

**Demo**

**Phasing:**
- Equipment loads will be on new Dist. Panel “1EQDPL1”
- Existing panel “OPHTMP” can be tapped to temporarily feed “1EQDPL1”
- Panels “ED” & “MCC-E1” can be removed to make space for the new transformers and panels
- With new transforms and panels in place “1EQDPL1” can be switched over to be fed from the source per the one-line.

Protect all existing low voltage cabling that serves the existing 2nd floor research suite to the NW
All other power & auxiliary systems devices and lighting will be removed from our space

**Lighting**

- All new LED fixtures & controls
- Lab spaces have occupancy sensors, but sensors are only used for control of mechanical units
- Occupancy / Vacancy sensors in other spaces are used for both control of lights as well as mechanical units.

**Power & Auxiliary systems:**

- New mechanical equipment connections in first floor mechanical room and roof
- All new devices for power, fire alarm, low voltage
- Card access: Rough-in for devices and pull owner provided cabling

**Telecommunications:**

- Contractor will install all junction boxes and conduits. Cabling is owner provided Contractor installed. Owner will terminate, install jacks, faceplates, and test all cabling.
- See telecom sheets for quantities of cables and device locations

*The University of Missouri Teaching Hospital – Ambulatory Surgery Unit Lab Space Renovation*
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### UNIVERSITY OF MISSOURI
### PREBID MEETING ATTENDANCE RECORD

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**PROJECT NUMBER:** CP171051  
**DATE:** August 24, 2017

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SICRAL Contracting  
1331 Monroe  
IL, MO 65101  
573-843-5977 chris@sicralcontracting.com | Yes | N | N | N | N | N | N | N |
| KEITH TEMMEN  
Hulett Heating  
400 Big Bear  
Columbia, MO 65202  
573-449-3196 ktemmen@hulettheating.com | N | Yes | N | N | N | N | N | N |
| DANIEL ZUMWALT  
MUHC - PSC  
573-882-7154 Zumwalt@health.missouri.edu | N | | | | | | | |

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Page 1 of 1