

ADDENDUM NUMBER ONE

To the Drawings and Project Manual

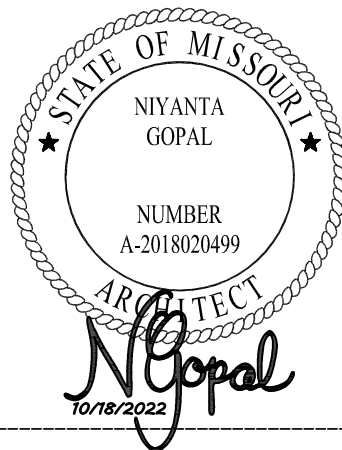
Dated: 3 October 2022

Entitled:

University Physician's Medical Building (UPMB) – 4th Floor – MOA
Clinic Renovation
MU Project No. #CP221944
At the University of Missouri
Columbia, MO
For the Curators of the University of Missouri

Prepared By:

BSA LIFESTRUCTURES
12645 Olive Blvd. Suite 227
Creve Coeur, MO 63141



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MO Registration No. A-2018020499

Addendum Dated: 18 October 2022

Project Number: 14110005

RESPONSES TO QUESTIONS

1. *Please clarify what permits if any will be required outside of the owners jurisdiction?*
 - Article 2/2.1.1
“Permits and fees are the responsibility of the Contractor under the Contract Documents, unless specifically stated in the contract documents that the Owner will secure and pay for specific necessary approvals, easements, assessments, and charges required for construction, use or occupancy of permanent structures, or for permanent changes in existing facilities.”
 - Article 3.2.2
“Since the Owner is an instrumentality of the State of Missouri, municipal, or political subdivision, ordinances, zoning ordinances, and other like ordinances are not applicable to construction on the Owner's property, and the Contractor will not be required to submit plans and specifications to any municipal or political subdivision authority to obtain construction permits or any other licenses or permits from or submit to, inspection by any municipality or political subdivision relating to the construction on the Owner's property, unless required by the Owner in these Contract Documents or otherwise in writing.”.
 - a. No Permits are required for this project outside of the Owner's jurisdiction. The Owner will facilitate and pay for the Plan Review and Building Permit issued by its third-party agent, GBA (George Butler Associates).
2. *I was looking at the specifications for the above referenced project – in looking at 22 07 19 (Plumbing Piping Insulation) on page 502 to 511, it does not seem right. The words appear to be jumbled and are not clearly legible. I attempted to re-download from the site, but the pages look the same.*
 - a. This section has been re-issued.
3. *Will there be any occupied areas on the 4th Floor during construction? There is no dust protection called out.*
 - a. No areas will be occupied. Notes have been added to sheet A100.
4. *Work on third floor will need to be coordinated with the clinic hours. Provide more work condition and infection control requirements.*
 - a. Timing of above ceiling work for the 3rd floor has been clarified in Section 1.A: Bid for Lump Sum Contract.
5. *Through floor penetration firestopping requirements?*
 - a. All existing ratings to be maintained. Penetration Firestopping requirements outlined on drawings & in specifications. Clarifying general note added to sheet A000.
6. *Who is responsible for hauling out demo materials?*
 - a. General contractor to determine who is responsible for MEP haul out.
7. *Confirm we can work without affecting floors other than 3rd Floor.*
 - a. All work will be above ceiling on the 3rd Floor and 4th Floor. Refer to plumbing general notes on sheet P000.

8. *Elevator useage?*
 - a. Utilize the north Service elevator. GC to protect existing elevator & walls to remain when utilizing service elevator.
9. *Is scanning required for new slab penetrations?*
 - a. Contractor shall X-ray concrete slabs and wall prior to core drilling to avoid damage to utilities or reinforcing steel.
10. *Clarify Bidder Question deadline & Final Addendum Delivery date.*
 - a. All bidder questions shall be received no later than Tuesday, October 25th at 5PM. A final addendum will be issued on Thursday, October 27th.

CHANGES TO THE PROJECT MANUAL

1. ADVERTISEMENT FOR BIDS

- a. **ADD:** Two (2) pre-scheduled on-site bidder walk-through sessions have been scheduled to allow access to the UPMB 3rd Floor, current Neurology Clinic, for above-ceiling verification purposes related to plumbing work related to the UPMB 4th Floor Renovation:
 - (a) Friday, October 21, 2022, between 3:00-4:00pm
 - (b) Monday, October 24, 2022, between 4:00-5:00pm
- (1) These sessions have been scheduled to avoid peak clinic times and occur when minimal patients are anticipated to be in clinic.
- (2) Both a MU Owner's Representative and a MUHC Facilities Representative will be present in the UPMB 3rd Floor Neurology Clinic Waiting Area with name-tag identification, to escort bidders into the clinic area for these verification purposes. Infection Control (IFC) guidelines allow careful removal of one ceiling tile at a time for observation purposes, without any other IFC devices. Observation and verification areas will be limited to those shown on the Drawings where above-ceiling related plumbing work is anticipated to occur. If a particular area is not accessible during these scheduled walk-through sessions due to a patient or clinic activity the bidder will be denied access to that area and asked to return at the second scheduled time.

2. SECTION 1A: BID FOR LUMP SUM CONTRACT

- a. **REPLACE:** Replace entire Section. Revised section expands Special Scheduling Requirements section, reformats the Bid Form, and corrects the Bid Form to allow the Bidder to fill-in the Supplier Diversity percentages they are attaining with submittal of their bid.

3. SECTION 1.E.8: HEALTHCARE CONSTRUCTION GUIDELINE
 - a. REVISE: This section is correctly listed in the Table of Contents as Section 1.E.8., however, is labeled as Section 1.E.1 and needs its label revised to Section 1.E.8.
4. SECTION 22 07 19: PLUMBING PIPING
 - a. REPLACE: Entire section re-issued due to formatting issues.

CHANGES TO THE DRAWINGS

1. DRAWING A000: GENERAL NOTES AND ABBREVIATIONS
 - a. General notes updated.
2. DRAWING A100: DEMOLITION PLAN- FOURTH FLOOR
 - a. ADD: Note X43
3. DRAWING A103: DEMOLITION REFLECTED CEILING PLAN- THIRD FLOOR
 - a. REVISE: Scope on plans to align with Plumbing Drawings.

END OF ADDENDUM NUMBER ONE

Attachments:

Section 1.A, Section 22 07 19, Drawing A000, Drawing A100, Drawing A103

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
Front Desk Reception Desk, Room L100, General Services Building

1. Bidder, in compliance with invitation for bids for construction work in accordance with Drawings and Specifications prepared by BSA LifeStructures, entitled "UPMB 4th Floor MOA Clinic Renovation", project number CP221944, dated 3 October 2022 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 provide an interior renovation of the 4th floor of the UPMB; 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 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: Provide new flooring (LVT) and rubber base in corridors as noted on drawings.
All for sum of:

_____ DOLLARS (\$_____).

(2) Additive Alternate No. 2: Provide new ceiling tiles in corridors as noted on drawings. Replace ceiling tiles only, grid shall be existing to remain.
All for sum of:

_____ DOLLARS (\$_____).

(3) Additive Alternate No. 3: Sound Masking System
All for sum of:

_____ DOLLARS (\$_____).

d. Allowance:

Bidder shall include in the base bid sum an allowance of \$10,000 for unforeseen field-directed fire-stopping, or similar scope, not included in the Construction Documents, as authorized by the owner's representative. 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.

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 Seventy (270) 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. Special scheduling requirements:

1. UPMB Occupancy - The University Physician's Medical Building (UPMB) will continue to be occupied during the course of this project but the entire 4th Floor will be vacant and considered unoccupied. All existing UPMB operations in other floors are to be maintained at all times.

2. Utility Outages - Any and all utility outages in portions of the UPMB outside of the defined UPMB Ground Floor project area, required to complete any work shall be reviewed in advance with the Owner's Representative and then submitted at least seven (7) calendar days in advance as a request for approval by the Owner's Representative and then scheduled accordingly.

3. Construction Access & Staging - All construction access shall be from the north, or rear service-side of the UPMB via the northwest Stair and adjacent Service Elevator. No construction access is permitted from the south, or front public-side of the UPMB without pre-approval from the Owner's Representative. Refer to Construction Access and Staging Drawing. The Owner will provide an oversized dumpster for shared use by UPMB Occupants and the Contractor for this project. Contractor shall coordinate use and keep Owner's Representative apprised as to when dumpster needs emptied due to construction debris and periods of anticipated heavy construction usage.

4. Work Hours - Work hours for this project are considered as Monday-Friday, 7:00am - 5:00pm. Other work hours are acceptable if submitted, reviewed, coordinated, scheduled and approved at least 48-hours in advance with the Owner's Representative.

5. Excessive Noisy Work - There is a Neurology Clinic located on the UPMB 3rd Floor that will maintain its occupancy throughout the duration of this project.

a. The Neurology Clinic's normal business hours are from 8:00am - 5:00pm.

b. Noisy Work on the UPMB 4th Floor must be avoided during the following days/times. This is due to the specialty ALS/muscular dystrophy and migraine clinic schedule on UPMB 3rd Floor.

Mondays: Noisy work preferred during PM, but AM can be accommodated.

Tuesdays: 9am-3pm

Wednesdays: 8am-4:40pm

Thursdays: 8am-4:40pm

Friday: Noisy work preferred during PM, but AM can be accommodated.

- c. In Summary: Noisy work is preferred on Monday and Friday afternoons.
- d. Alternatively, Noisy Work can be scheduled and sequenced to occur after normal business hours when the clinic is closed, when submitted, reviewed, and approved by the Owner's Representative at least 48-hours in advance.

6. Work Occurring on Floors Below (3rd, 2nd, 1st and/or Ground Floors) – Generally, all necessary work to occur on floors below the 4th Floor shall be reviewed, submitted, approved and scheduled to occur after normal business hours at least 48-hours in advance with the Owner's Representative.

Certain minor access and/or work that needs to occur on any floors below may be allowed to occur during normal business hours upon review, approval and advance scheduling with the Owner's Representative.

7. Infection Control Provisions – Infectious Control (IFC) provisions are not required for the UPMB 4th Floor work area since the floor is considered completely vacated and non-occupied during the contract period.

Any work on the other UPMB Floors, including necessary above-ceiling work on the UPMB 3rd Floor for installation and reworking of plumbing systems shall practice all MU Health Care IFC provisions if work occurs during the UPMB 3rd Floor – Neurology Clinic business hours and/or while the clinic is occupied.

8. UPMB 3rd Floor above-ceiling work for installation and reworking of plumbing systems shall be coordinated, scheduled and approved by the Owner's Representative at least 14-calendar days in advance, to occur after-hours and only between Friday from 4:00pm through Sunday at 4:00pm. The Contractor shall additionally indicate which portions or areas of the 3rd Floor are to be included when scheduling this work as multiple areas may be undertaken during a single after-hours weekend and/or work scheduled to occur on multiple after-hours weekends.

If all above-ceiling work occurs during after-hours when the clinic is closed and unoccupied, MUHC IFC provisions may be waived so long as Contractor takes reasonable care to contain construction activities within existing rooms where possible (ie, keep doors closed), and minimize migration of dust in open areas and corridors.

The Owner's internal cleaning team will be coordinated to perform a final cleaning and make-ready of the 3rd Floor clinic areas between Sunday at 4:00pm through 9:00pm on each of these occurrences.

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.

Work to be performed	Subcontractor Name,	City, State
Mechanical	_____	_____
Plumbing	_____	_____
Electrical	_____	_____

6. SUPPLIER DIVERSITY PARTICIPATION GOALS

a. The Contractor shall have as a goal, subcontracting with Minority Business Enterprise (MBE) of Ten Percent (10%), with Service Disabled Veteran Owned Business (SDVE) of Three Percent (3%); and with Women Business Enterprise (WBE), Disadvantage Business Enterprise (DBE), and/or 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 Supplier Diversity participation level:

MBE PERCENTAGE PARTICIPATION: _____ (%)
 SDVE PERCENTAGE PARTICIPATION: _____ (%)
 WBE, DBE, and/or VETERAN PERCENTAGE PARTICIPATION: _____
 _____ (%)

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 Sixty (60) 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.

Authorized Signature	Date
Printed Name	Title
Company Name	
Mailing Address	
City, State, Zip	
Phone No.	Federal Employer ID No.
Fax No.	E-Mail Address
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

SECTION 22 07 19 - PLUMBING PIPING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes insulating the following plumbing piping services:
 - 1. Domestic cold-water piping.
 - 2. Domestic hot-water piping.
 - 3. Domestic recirculating hot-water piping.
 - 4. Roof drains, overflow roof drains, and rainwater leaders.
- B. Related Sections:
 - 1. Division 22 Section "Hangers and Supports for Plumbing Piping and Equipment".
 - 2. Division 22 Section "Domestic Water Piping".

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied, if any).

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
- B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
 - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
- C. Comply with the following applicable standards and other requirements specified for miscellaneous components:
 - 1. Supply and Drain Protective Shielding Guards: ICC A117.1.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.6 COORDINATION

- A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Division 22 Section "Hangers and Supports for Plumbing Piping and Equipment."
- B. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.
- C. Coordinate installation and testing of heat tracing.

1.7 SCHEDULING

- A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.
- B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

- A. Comply with requirements in "Piping Insulation Schedule, General," "Indoor Piping Insulation Schedule," articles for where insulating materials shall be applied.
- B. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.
- D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
- E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- F. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Aeroflex USA, Inc.; Aerocel.
 - b. Armacell LLC; AP Armaflex.

c. K-Flex USA; Insul-Lock, Insul-Tube, and K-FLEX LS.

G. Fiberglass, Preformed Pipe Insulation:

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Johns Manville; Micro-Lok.
 - b. Knauf Insulation.
 - c. Owens Corning; Fiberglas Pipe Insulation.
2. 450 Deg F Materials: 1-piece rigid molded glass fiber. Comply with ASTM C 547, with factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

2.2 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

B. Flexible Elastomeric Adhesive: Comply with MIL-A-24179A, Type II, Class I.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Aeroflex USA, Inc.; Aero seal.
 - b. Armacell LLC; Armaflex 520 Adhesive.
 - c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-75.
 - d. K-Flex USA; R-373 Contact Adhesive.
2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. ASJ Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-82.
 - b. Eagle Bridges - Marathon Industries; 225.
 - c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-20.
 - d. Mon-Eco Industries, Inc.; 22-25.
2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.3 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.
 - 1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-80/30-90.
 - b. Vimasco Corporation; 749.
 - 2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
 - 3. Service Temperature Range: Minus 20 to plus 180 deg F.
 - 4. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
 - 5. Color: White.

2.4 SEALANTS

- A. ASJ Flashing Sealants:
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-76.
 - 2. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 3. Fire- and water-resistant, flexible, elastomeric sealant.
 - 4. Service Temperature Range: Minus 40 to plus 250 deg F.
 - 5. Color: White.
 - 6. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 7. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.5 FACTORY-APPLIED JACKETS

- A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
 - 1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
 - 2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.

2.6 TAPES

- A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. ABI, Ideal Tape Division; 428 AWF ASJ.
 - b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0836.
 - c. Compac Corporation; 104 and 105.
 - d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.
 2. Width: 3 inches.
 3. Thickness: 11.5 mils.
 4. Adhesion: 90 ounces force/inch in width.
 5. Elongation: 2 percent.
 6. Tensile Strength: 40 lbf/inch in width.
 7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

2.7 SECUREMENTS

- A. Bands:
1. Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ITW Insulation Systems; Gerrard Strapping and Seals.
 - b. RPR Products, Inc.; Insul-Mate Strapping and Seals.
 2. Wing seals are primarily used for fastening bands together. Closed seals are occasionally used for large, 84-inch- (2130-mm-) diameter applications and where fastening bands are used with springs. Wing seals are reusable; closed seals are not.
 3. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304; 0.015 inch thick, 1/2 inch wide with wing seal.
 4. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 1/2 inch wide with wing seal.
- B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.
- C. Wire: 0.062-inch soft-annealed, stainless steel.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. C & F Wire.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.

1. Verify that systems to be insulated have been tested and are free of defects.
2. Verify that surfaces to be insulated are clean and dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

G. Keep insulation materials dry during application and finishing.

H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

I. Install insulation with least number of joints practical.

J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.
2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

L. Install insulation with factory-applied jackets as follows:

1. Draw jacket tight and smooth.
 2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
 3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 2 inches o.c.
 - a. For below-ambient services, apply vapor-barrier mastic over staples.
 4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.
- M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.
- P. For above-ambient services, do not install insulation to the following:
1. Vibration-control devices.
 2. Testing agency labels and stamps.
 3. Nameplates and data plates.
 4. Cleanouts.
- Q. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- R. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.
1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.
- ### 3.4 GENERAL PIPE INSULATION INSTALLATION
- A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.
- B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:
1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
 2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces

with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.

3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.
6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below-ambient services and a breather mastic for above-ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
8. Stencil or label the outside insulation jacket of each union with the word "union." Match size and color of pipe labels.

3.5 INSTALLATION OF FLEXIBLE ELASTOMERIC INSULATION

- A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- B. Insulation Installation on Pipe Fittings and Elbows:
 1. Install mitered sections of pipe insulation.
 2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- C. Insulation Installation on Valves and Pipe Specialties:
 1. Install preformed valve covers manufactured of same material as pipe insulation when available.
 2. When preformed valve covers are not available, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
 3. Install insulation to flanges as specified for flange insulation application.
 4. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.6 INSTALLATION OF FIBERGLASS INSULATION

- A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

C. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

3.7 PIPING INSULATION SCHEDULE, GENERAL

- A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.
- B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:
1. Drainage piping located in crawl spaces.
 2. Underground piping.
 3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.
- C. Cold Surfaces: For piping surfaces operating below surrounding ambient temperature, all piping surfaces including but not limited to pipe, flanges, fittings, valves of every kind, strainers, unions, and other appurtenances shall be insulated and shall include uninterrupted vapor barrier to avoid potential condensation.

3.8 INDOOR PIPING INSULATION SCHEDULE

A. Domestic Cold Water:

1. NPS 1 and Smaller: Insulation shall be the following:
 - a. Flexible Elastomeric: 3/4 inch thick.

-
2. NPS 1-1/4 and Larger: Insulation shall be the following:
 - a. Flexible Elastomeric: 1 inch thick.
 - B. Domestic Hot and Recirculated Hot Water:
 1. NPS 1-1/4 and Smaller: Insulation shall be one of the following:
 - a. Fiberglass, Preformed Pipe Insulation, Type I: 1 inch thick.
 2. NPS 1-1/2 and Larger: Insulation shall be one of the following:
 - a. Fiberglass, Preformed Pipe Insulation, Type I: 1-1/2 inch thick.
 - C. Stormwater and Overflow:
 1. All Pipe Sizes: Insulation shall be one of the following:
 - a. Flexible Elastomeric: 1 inch thick.
 - D. Roof Drain and Overflow Drain Bodies:
 1. All Pipe Sizes: Insulation shall be one of the following:
 - a. Flexible Elastomeric: 1 inch thick.

END OF SECTION 22 07 19



1 FOURTH FLOOR DEMOLITION PLAN
1/8" = 1'-0"

KEYNOTE LEGEND	
REFER TO 4000 FOR GENERAL NOTES	
X01	EXISTING SPACE TO REMAIN, NO WORK.
X03	REMOVE EXISTING VALVE BOX, REF MEP DRAWINGS.
X05	REMOVE EXISTING DOOR, FRAME, HEADER AND HARDWARE IN ITS ENTIRETY. PREPARE OPENING TO BE INFILLED WITH NEW WALL CONSTRUCTION. REFER TO ARCHITECTURAL DIMENSION PLANS FOR ADDITIONAL INFORMATION.
X06	REMOVE EXISTING FLOORING AND BASE IN THEIR ENTIRETY. PREPARE FLOOR SLAB TO RECEIVE NEW FLOOR FINISH. PREPARE WALL TO RECEIVE NEW BASE. REFER TO INTERIOR FINISH PLANS FOR ADDITIONAL INFORMATION.
X07	REMOVE EXISTING CASEWORK IN ITS ENTIRETY.
X08	REMOVE EXISTING CASEWORK IN ITS ENTIRETY. PREPARE WALL TO RECEIVE NEW WALL FINISH. REFER TO INTERIOR FINISH PLANS FOR ADDITIONAL INFORMATION.
X10	EXISTING FIRE EXTINGUISHER CABINET TO REMAIN, PROTECT.
X11	REMOVE EXISTING PLUMBING FIXTURE.
X13	REMOVE EXISTING CEILINGS AND SOFFITS. REMOVE ALL WALL MOUNTED EQUIPMENT AND CEILING MOUNTED EQUIPMENT. RETURN ALL EQUIPMENT TO OWNER. PREPARE WALLS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X14	REMOVE EXISTING DRYWALL AND PATCH AS REQUIRED TO ACCOMMODATE NEW ELECTRICAL AND DATA. AND IN WALL BACKING FOR WALL MOUNTED COMPUTER ONLY. PROTECT ALL FINISHES AND EQUIPMENT IN EXISTING SPACE.
X15	REMOVE PORTION OF EXISTING WALL TO ACCOMMODATE NEW OPENING. COORDINATE WITH NEW WORK PLAN AND OPENING DETAILS.
X16	REMOVE EXISTING RECOUNTABLE PARTITION.
X17	EXISTING DRINKING FOUNTAIN TO REMAIN. REMOVE DRYWALL AS REQUIRED TO PROVIDE WATER BOTTLE FILLER PER PLUMBING DRAWINGS.
X18	REMOVE PORTION OF EXISTING WALL TO CREATE NEW OPENING. REFER TO DIMENSION PLAN FOR LOCATION & ADDITIONAL INFORMATION.
X19	REMOVE EXISTING FIRE EXTINGUISHER & BRACKET.
X20	EXISTING WINDOW/SILL TO BE REMOVED. PREPARE TO RECEIVE NEW WINDOW/SILL PER ARCHITECTURAL DRAWINGS.
X21	LIGHT SWITCH TO BE RELOCATED/SHIFTED TO ACCOMMODATE NEW OPENING. REF ELEC. DRAWINGS.
X23	REMOVE EXISTING FULL HEIGHT CABINET AND SOLID SURFACE SIDESPLASH ONLY ADJACENT TO FULL HEIGHT CABINET. PROTECT EXISTING CASEWORK TO REMAIN.
X24	EXISTING WALL COVERING TO REMAIN.
X25	REMOVE EXISTING WALL COVERING THROUGHOUT CORRIDOR. PREP WALLS FOR NEW PAINT.
X26	REMOVE EXISTING RESILIENT FLOOR AND INTEGRAL COVE BASE IN ITS ENTIRETY. PREPARE FLOORS AND WALLS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X27	REMOVE EXISTING RESILIENT FLOORING AND RESILIENT COVE BASE IN ITS ENTIRETY. PREPARE FLOORS AND WALLS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X28	REMOVE EXISTING TILE WAINSCOTING AND TILE FLOORING IN ITS ENTIRETY. REMOVE ALL ASSOCIATED TILE ACCESSORIES. PREPARE FLOORS AND WALLS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X29	REMOVE EXISTING CARPET TILE IN ITS ENTIRETY. REMOVE EXISTING RESILIENT COVE BASE IN ITS ENTIRETY. PREPARE FLOORS AND WALLS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X30	REMOVE ALL EXISTING FINISHES IN ITS ENTIRETY. PREPARE FLOORS AND WALLS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X31	REMOVE EXISTING CARPET WHERE INDICATED. PREPARE FLOORS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X32	REMOVE EXISTING WALL COVERING. PREP WALLS FOR NEW PAINT.
X34	REMOVE ALL EXISTING WALL COVERING IN ITS ENTIRETY.
X35	REMOVE EXISTING TILE FLOORING IN ITS ENTIRETY. REMOVE ALL ASSOCIATED TILE ACCESSORIES. PREPARE FLOORS TO RECEIVE NEW FINISHES. REFER TO INTERIOR FINISH DRAWINGS.
X36	REMOVE RESILIENT BASE IN ITS ENTIRETY.
X41	REMOVE EXISTING MED GAS ZONE VALVE BOX WALL PANEL. REF PLUMBING DRAWINGS.
X43	PROVIDE INFECTION CONTROL PROVISIONS & LUST PROTECTION AT EXISTING ACCESS POINTS TO FLOOR.

BSA

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Health Care

MU PROJECT NO. - CP221944
**UNIVERSITY PHYSICIANS
MEDICAL BUILDING
(UPMB) - 4TH FLOOR -
MOA CLINIC RENOVATION**
1020 Hitt St, Columbia, MO 65212

BID SET

MARK	DATE	DESCRIPTION
A	10/19/2022	ADDENDUM 01

I hereby certify these drawings and/or specifications have been prepared by me, or under my supervision, I further certify that to the best of my knowledge these drawings and/or specifications are as required by and in compliance with the Building Codes of the University of Missouri.



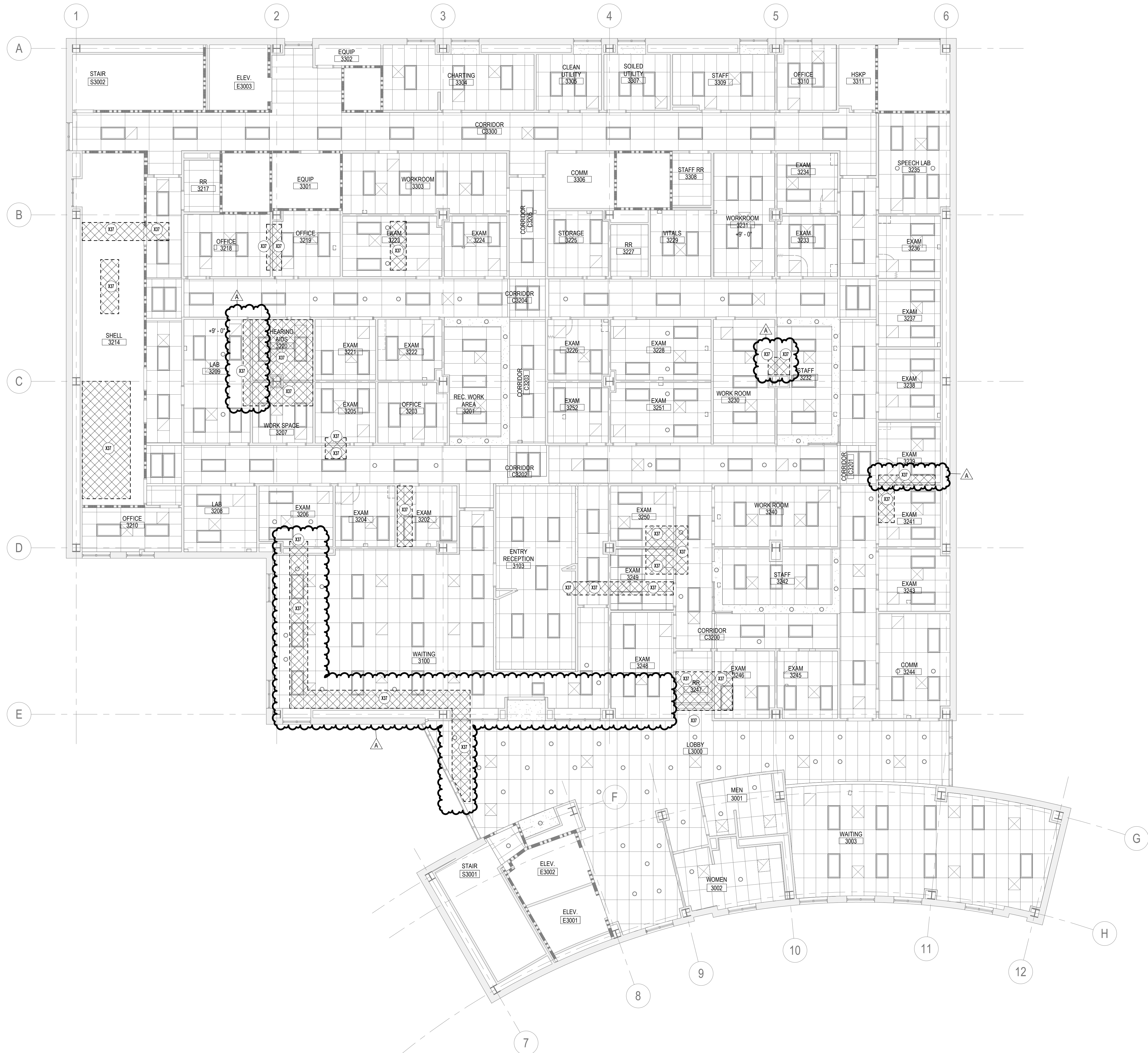
DEMOLITION PLAN - FOURTH FLOOR

DATE: 3 OCTOBER 2022
BSALS PROJECT NO.: 14110005

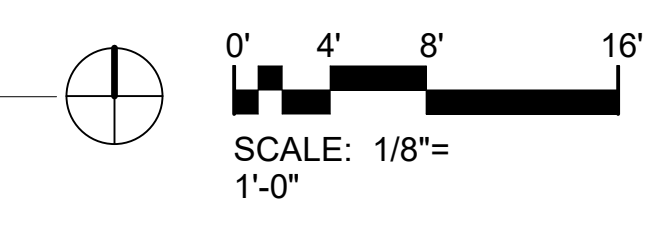
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Author: Niyanta Gopal
Checked: Niyanta Gopal
Approved: Niyanta Gopal

KEYNOTE LEGEND	
REFER TO A000 FOR GENERAL NOTES	
X37	CEILING WITHIN THIS OCCUPIED AREA TO BE TEMPORARILY REMOVED FOR SCOPE OF UNDERFLOOR PLUMBING DEMO/NEW WORK. AS INDICATED BY HATCHED REGION. REFER TO PLUMBING DRAWINGS AND COORDINATE EXTENT. ALL CEILINGS EXISTING CONDITIONS TO BE MAINTAINED. PATCH/PAINT GYP. BD. CEILINGS AS REQUIRED. REPLACE DAMAGED TILES & GRID AS REQUIRED. PROTECT ALL LIGHT FIXTURES AND DIFFUSERS. WORK TO BE SCHEDULED WITH OWNER.



1 THIRD FLOOR REFLECTED CEILING PLAN
REFERENCE
1/8" = 1'-0"



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DEMOLITION REFLECTED
CEILING PLAN- THIRD
FLOOR

DATE 3 OCTOBER 2022
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 APPROVED: Admin