SPECIFICATIONS MANUAL
100% Construction Documents
ALW Project No. 22470

March 31, 2026

Kellogg Building Remodel

Florida State University

FSU Project #2221200

VOLUME 1 of 4

Architect

ALW

Architects Lewis + Whitlock
206 W. VIRGINIA STREET
TALLAHASSEE FL 32301
850 942 1718 | think3d.net
FLAA0003316

Consultants

BNI Engineers
H2 Engineering Inc.
Moore Bass Consulting, Inc.
Affiliated Engineers, Inc.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS
011000 - SUMMARY
012200 - UNIT PRICES
012300 - ALTERNATES
012500 - SUBSTITUTION PROCEDURES
013000 - ADMINISTRATIVE REQUIREMENTS
016000 - PRODUCT REQUIREMENTS
016116 - VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS
017000 - EXECUTION AND CLOSEOUT REQUIREMENTS
017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
018113 – SUSTAINABLE DESIGN REQUIREMENTS
019113 - COMMISSIONING

DIVISION 02 - EXISTING CONDITIONS
024100 – SELECTIVE DEMOLITION

DIVISION 03 - CONCRETE
030320 - CONCRETE WORK
030516 - UNDERSLAB VAPOR BARRIER
031000 - CONCRETE FORMING AND ACCESSORIES
032000 - CONCRETE REINFORCEMENT
033000 - CAST-IN-PLACE CONCRETE
034500 - PRECAST ARCHITECTURAL CONCRETE

DIVISION 04 - MASONRY
040100 - MAINTENANCE OF MASONRY
040511 - MASONRY MORTARING AND GROUTING
042613 - MASONRY VENEER
042110.20 – PREPARING LIME MORTAR FOR REPOINTING MASONRY
042900 - REINFORCED UNIT MASONRY
045200.20 REPOINTING MASONRY USING LIME MORTAR
047200 - CAST STONE MASONRY

DIVISION 05 - METALS
051200 - STRUCTURAL STEEL
053100 - STEEL DECK
054000 - COLD-FORMED METAL FRAMING

055000 - METAL FABRICATIONS
055213 - PIPE AND TUBE RAILINGS

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES
061000 - ROUGH CARPENTRY
062000 - FINISH CARPENTRY
064100 - ARCHITECTURAL WOOD CASEWORK
064200 - WOOD PANELING

DIVISION 07 - THERMAL AND MOISTURE PROTECTION
070553 - FIRE AND SMOKE ASSEMBLY IDENTIFICATION
071113 - BITUMINOUS DAMPPROOFING
072100 - THERMAL INSULATION
072119 - FOAMED-IN-PLACE INSULATION
074113 - METAL ROOF PANELS
074213 - METAL WALL PANELS
075419 - POLYVINYL-CHLORIDE ROOFING (PVC)
076200 - SHEET METAL FLASHING AND TRIM
077100 - ROOF SPECIALTIES
077200 - ROOF ACCESSORIES
078400 - FIRESTOPPING
079200 - JOINT SEALANTS

DIVISION 08 - OPENINGS
081113 - HOLLOW METAL DOORS AND FRAMES
081416 - FLUSH WOOD DOORS
083100 - ACCESS DOORS AND PANELS
084313 - ALUMINUM-FRAMED STOREFRONTS
084413 - GLAZED ALUMINUM CURTAIN WALLS
085114 - ALUMINUM WINDOWS
087100 - DOOR HARDWARE
088000 - GLAZING

DIVISION 09 - FINISHES
092116 - GYPSUM BOARD ASSEMBLIES
093000 - TILING
095100 - ACOUSTICAL CEILINGS
096433 - LAMINATED WOOD FLOORING
096500 - RESILIENT FLOORING

096813 - TILE CARPETING
097200 - WALL COVERINGS
~~098414 - ACOUSTIC STRETCHED-FABRIC WALL AND CEILING SYSTEM~~
098430 - SOUND ABSORBING WALL AND CEILING UNITS
099113 - EXTERIOR PAINTING
099123 - INTERIOR PAINTING
099600 - HIGH-PERFORMANCE COATINGS
099723 - CONCRETE & MASONRY COATINGS

DIVISION 10 - SPECIALTIES
101100 - VISUAL DISPLAY UNITS
101400 - SIGNAGE
102113.19 – PLASTIC TOILET APARTMENTS
102601 - WALL AND CORNER GUARDS
102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES
104400 - FIRE PROTECTION SPECIALTIES
105113 - METAL LOCKERS

DIVISION 12 - FURNISHINGS
122400 - WINDOW SHADES
123600 - COUNTERTOPS

APPENDIX
ASBESTOS ABATEMENT WORK PLAN
FLORIDA GREEN BUILDING COALITION V4 COMMERCIAL CERTIFICATION PLAN, DATED 07/02/2026

SECTION 012200
UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. List of unit prices, for use in preparing Bids.

1.02 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03 UNIT QUANTITIES SPECIFIED

1.04 MEASUREMENT OF QUANTITIES

A. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.

B. Assist by providing necessary equipment, workers, and survey personnel as required.

1.05 PAYMENT

A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.06 SCHEDULE OF UNIT PRICES

A. Item: Repointing; Section 04 52 00.20. Unit Price per suqare foot: _____

B. Item: Brick Removal and Replacement; Section 04 20 00 Unit Masonry. Unit price per square foot: _____

C. Item: Cast Stone Repair; Per documents. Unit price per square foot: _____

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 012300
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of Alternates.

1.02 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.03 SCHEDULE OF ALTERNATES

A. Alternate No. 1
   1. Remove windows (4 total - fire rated) on the 2nd floor and 3rd floor along the South Facade. This would include no demolition of the existing wall and masonry, no new reinforced opening and no new window systems. See 2nd / 3rd floor plans and elevation/sections.
      a. Base bid includes masonry wall to remain

B. Alternate No. 2 - _____.
   1. Remove new metal framed dormers (3 total) and associated windows and wall panels on the South Facade. This would include removal of existing framing to accommodate dormer and windows. See 4th floor plans / roof plan and elevation/sections.
      a. Base bid shall include removal of existing louver dormers (cast stone and louvers). New mansard infill framing and decking as well metal roofing on Mansard will be required where dormers are no longer included.

C. Alternate No. 3
   1. Remove new metal fencing and gates on the west side of the building designed to screen the electrical transformers and equipment. Brick veneer / concrete masonry and cast stone caps where shown shall remain in base bid. See site plan and details.

D. Alternate No. 4
   1. Remove decorative soffit along connector bridge at levels 1,2 and 3. Lighting shall remain.
      a. Base bid shall include painting the underside of the existing bridge structure

E. Alternate No. 5
   1. Add wood wall paneling in rooms identified on the finish schedule.
      a. Base bid shall include Level 4 painted gysum board with wall base as scheduled.

F. Alternate No. 6
   1. Add wood wall paneling in rooms identified on the finish schedule.
      a. Base bid shall include Level 4 painted gysum board with wall base as scheduled.

G. Alternate No. 7
   1. Provide wood door casing (WT-6) around door frames identified on the door schedule.
      a. Base bid shall not include door casing.

H. Alternate No. 8
   1. Provide suspended acoustic panel ceiling type APC-1 in Study Lounges on floors 2 thru 4 as shown on the reflected ceiling plans.
      a. Base bid shall include suspended wood panel ceiling type AWPC-2 in Study Lounges on floors 2 thru 4 as shown on the reflected ceiling plans.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 012300 - Alternates, for product alternatives affecting this section.

B. Section 013000 - Administrative Requirements: Submittal procedures, coordination.

C. Section 016000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
   4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   5. Waives claims for additional costs or time extension that may subsequently become apparent.
   6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must include the following:
      a. Project Information:
         1) Official project name and number, and any additional required identifiers established in Contract Documents.
      b. Substitution Request Information:
         1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
         2) Indication of whether the substitution is for cause or convenience.
         3) Issue date.
         4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
         5) Description of Substitution.
         6) Reason why the specified item cannot be provided.

7) Differences between proposed substitution and specified item.
8) Description of how proposed substitution affects other parts of work.

c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
1) Physical characteristics.
2) In-service performance.
3) Expected durability.
4) Visual effect.
5) Sustainable design features.
6) Warranties.
7) Other salient features and requirements.

d. Impact of Substitution:
1) Savings to Owner for accepting substitution.
2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Owner / Architect will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submit request for Substitution for Cause immedately upon discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

B. Substitutions will not be considered under one or more of the following circumstances:
1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
2. Without a separate written request.
3. When acceptance will require revisions to the Contract Documents.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.
1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electronic document submittal service.

B. Preconstruction meeting.

C. Progress meetings.

D. Coordination drawings.

E. Submittals for review, information, and project closeout.

F. Number of copies of submittals.

G. Submittal procedures.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format.
   1. This procedure applies to requests for information (RFIs), shop drawings, information submittals, field reports, meeting minutes, and any other document any participant wishes to make part of the project record.
   2. It is Contractor's responsibility to submit documents in allowable format.
   3. Paper document transmittals will not be reviewed.
   4. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

3.02 PRECONSTRUCTION MEETING

A. Schedule meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.

C. Agenda:
   1. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   2. Designation of personnel representing the parties to Contract, _____ and .
   3. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum Bi-weekly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect.
   4. Contractor's superintendent.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Maintenance of progress schedule.
   7. Corrective measures to regain projected schedules.
   8. Planned progress during succeeding work period.
   9. Maintenance of quality and work standards.
   10. Effect of proposed changes on progress schedule and coordination.
   11. Other business relating to work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.05 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.07 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.08 SUBMITTAL PROCEDURES

A. General Requirements:

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Sustainable design-related product requirements.

C. Re-use of existing products.

D. Transportation, handling, storage and protection.

E. Product option requirements.

F. Substitution limitations.

G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

B. Section 013329.02 - Sustainable Design Reporting - LEED v4: Reporting requirements.

C. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

D. Section 017419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 REFERENCE STANDARDS

A. C2C (DIR) - C2C Certified Products Registry; Cradle to Cradle Products Innovation Institute; Current Edition.

B. EN 15804 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products; 2012.

C. GreenScreen (LIST) - GreenScreen for Safer Chemicals List Translator; Clean Production Action; www.greenscreenchemicals.org.

D. GreenScreen (METH) - GreenScreen for Safer Chemicals Method v1.2; Clean Production Action; Current Edition.

E. ISO 14025 - Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures; 2006.

F. ISO 14040 - Environmental management -- Life cycle assessment -- Principles and framework; 2006.

G. ISO 14044 - Environmental management -- Life cycle assessment -- Requirements and guidelines; 2006.

H. ISO 21930 - Sustainability in building construction -- Environmental declaration of building products; 2007.

1.04 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

D. Sustainable Design Submittals: Items necessary to document use of sustainable construction materials, products, and practices.
   1. See Section 013329.02 for Contractor's reporting necessary for achievement of targeted LEED v4 certification level.

1.05 QUALITY ASSURANCE

A. Chain-of-Custody (COC): A procedure that tracks a product from the point of harvest or extraction to its end use, including successive stages of processing, transformation, manufacturing, and distribution.

B. Chain-of-Custody Certificates: Certificates signed by manufacturers and fabricators certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001.

C. Composite Wood and Agrifiber: Products made of wood particles and/or plant material pressed and bonded with adhesive or resin such as particleboard, medium density fiberboard (MDF), plywood, wheatboard, strawboard, panel substrates, and door cores.

D. Corporate Sustainability Report: A third-party verified report that outlines the environmental impacts of extraction operations and activities associated with the manufacturer’s product and the product’s supply chain.

E. Cradle-to-Cradle Certified: End use product certified Cradle-to-Cradle v2 Basic or Cradle-to-Cradle v3 Bronze, minimum, as evidenced by C2C (DIR).

F. Environmental Product Declaration (EPD): Publicly available, critically reviewed life cycle analysis having at least a cradle-to-gate scope.
   1. Good: Product-specific; compliant with ISO 14044.
   2. Better: Industry-wide, generic; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
   3. Best: Commercial-product-specific; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
   4. Where demonstration of impact reduction below industry average is required, submit both industry-wide and commercial-product-specific declarations; or submit at least 5 declarations for products of the same type by other manufacturers in the same industry.

G. GreenScreen Chemical Hazard Analysis: Ingredients of 100 parts-per-million or greater evaluated using GreenScreen (METH).
   1. Good: GreenScreen (LIST) evaluation to identify Benchmark 1 hazards; a Health Product Declaration includes this information.
   2. Better: GreenScreen Full Assessment.
   3. Best: GreenScreen Full Assessment by GreenScreen Licensed Profiler.
   4. Acceptable Evidence: GreenScreen report.

H. Health Product Declarations (HPD): Complete, published declaration with full disclosure of known hazards, prepared using one of the HPDC (HPD-OLT) online tools.

I. Leadership Extraction Practices: Products that meet at least one of the responsible extraction criteria, which include: extended producer responsibility; bio-based materials; FSC wood products; materials reuse; recycled content; and other programs approved by sustainability certification system used for the project.

J. Manufacturer's Inventory of Product Content: Publicly available inventory of every ingredient identified by name and Chemical Abstract Service Registration Number (CAS RN).

1. For ingredients considered a trade secret or intellectual property, the name and CAS RN may be omitted, provided the ingredient's role, amount, and GreenScreen Benchmark are given.

K. Rapidly Renewable Materials: Made from agricultural products that are typically harvested within a 10-year or shorter cycle.

L. Regional Materials: Materials that are extracted, harvested, recovered, and manufactured within a radius of 100 miles from the Project site.

M. Reused Products: Materials and equipment previously used in this or other construction, salvaged and refurbished as specified.
1. Wood fabricated from timber abandoned in transit after harvesting is considered reused, not recycled.
2. Acceptable Evidence: Information about the origin or source, from Contractor or supplier.

N. Source Location: Location of harvest, extraction, recovery, or manufacture; where information about source location is required to be submitted, give the postal address:
1. In every case, indicate the location of final assembly.
2. For harvested products, indicate location of harvest.
3. For extracted (i.e. mined) products, indicate location of extraction.
4. For recovered products, indicate location of recovery.
5. For products involving multiple manufacturing steps, provide a description of the process at each step, with location.
6. Acceptable Evidence:
a. Manufacturer's certification.
b. Life cycle analysis (LCA) performed by third-party.

O. Sustainably Harvested Wood: Solid wood, wood chips, and wood fiber certified or labeled by an organization accredited by one of the following:
1. The Forest Stewardship Council, The Principles for Natural Forest Management; for Canada visit http://www.fsccanada.org, for the USA visit http://www.fscus.org.
2. Acceptable Evidence: Copies of invoices bearing the certifying organization's certification numbers.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.

B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

B. All new exterior envelope products must be Florida Product Approved. Provide Notice of Acceptance documentation with submittals.

C. Use of products having any of the following characteristics is not permitted:
1. Made using or containing CFC's or HCFC's.
2. Made of wood from newly cut old growth timber.
3. Containing lead, cadmium, or asbestos.

D. Where other criteria are met, Contractor shall give preference to products that:
1. If used on interior, have lower emissions, as defined in Section 016116.
2. If wet-applied, have lower VOC content, as defined in Section 016116.
3. Are extracted, harvested, and/or manufactured closer to the location of the project.
4. Have longer documented life span under normal use.

5. Result in less construction waste. See Section 017419
6. Are made of recycled materials.
7. If made of wood, are made of sustainably harvested wood, wood chips, or wood fiber.
8. If bio-based, other than wood, are or are made of Sustainable Agriculture Network certified products.
9. Are Cradle-to-Cradle Certified.
10. Have a published Environmental Product Declaration (EPD).
11. Have a published Health Product Declaration (HPD).

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 012500 - Substitution Procedures.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Provide off-site storage and protection when site does not permit on-site storage or protection.

G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

H. Comply with manufacturer's warranty conditions, if any.

I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

J. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

K. Prevent contact with material that may cause corrosion, discoloration, or staining.

L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 016116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for Indoor-Emissions-Restricted products.

B. Requirements for VOC-Content-Restricted products.

C. Requirement for installer certification that they did not use any non-compliant products.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittal procedures.

1.03 DEFINITIONS

A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Flooring.
   4. Composite wood.
   5. Products making up wall and ceiling assemblies.
   6. Thermal and acoustical insulation.
   7. Free-standing furniture.
   8. Other products when specifically stated in the specifications.

B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.

C. Interior of Building: Anywhere inside the exterior weather barrier.

D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
   2. Clay brick.
   3. Metals that are plated, anodized, or powder-coated.
   4. Glass.
   5. Ceramics.
   6. Solid wood flooring that is unfinished and untreated.

1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2005 (Reapproved 2013).

C. BIFMA e3 - Furniture Sustainability Standard; Business and Institutional Furniture Manufacturers Association; 2014.

D. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; California Department of Public Health; v1.1, 2010.

E. CARB (ATCM) - Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products; California Air Resources Board; current edition.

F. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2007.

G. CHPS (HPPD) - High Performance Products Database; Current Edition at www.chps.net/.

H. CRI (GLP) - Green Label Plus Testing Program - Certified Products; www.carpet-rug.org; current edition.

I. SCAQMD 1113 - South Coast Air Quality Management District Rule No.1113; current edition.

J. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition.

K. SCS (CPD) - SCS Certified Products; current listings at www.scscertified.com.

L. UL (GGG) - GREENGUARD Gold Certified Products; current listings at http://http://productguide.ulenvironment.com/QuickSearch.aspx.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

1.06 QUALITY ASSURANCE

A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
   1. Wet-Applied Products: State amount applied in mass per surface area.
   2. Paints and Coatings: Test tinted products, not just tinting bases.
   3. Evidence of Compliance: Acceptable types of evidence are the following;
      a. Current UL (GGG) certification.
      b. Current SCS (CPD) Floorscore certification.
      c. Current SCS (CPD) Indoor Advantage Gold certification.
      d. Current listing in CHPS (HPPD) as a low-emitting product.
      e. Current CRI (GLP) certification.
      f. Test report showing compliance and stating exposure scenario used.
   4. Product data submittal showing VOC content is NOT acceptable evidence.
   5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.

B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Report of laboratory testing performed in accordance with requirements.

C. Composite Wood Emissions Standard: CARB (ATCM) for ultra-low emitting formaldehyde (ULEF) resins.
   1. Evidence of Compliance: Acceptable types of evidence are:

a. Current SCS "No Added Formaldehyde (NAF)" certification; www.scscertified.com.
b. Report of laboratory testing performed in accordance with requirements.
c. Published product data showing compliance with requirements.

D. Furnishings Emissions Standard and Test Method: BIFMA e3 Sections 7.6.1 and 7.6.2, tested in accordance with BIFMA M7.1.
1. Evidence of Compliance:
a. Test report showing compliance and stating exposure scenario used.

E. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

B. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
1. Composite Wood, Wood Fiber, and Wood Chip Products: Comply with Composite Wood Emissions Standard or contain no added formaldehyde resins.
2. Furnishings: Comply with Furnishings Emissions Standard and Test Method.
3. Inherently Non-Emitting Materials.

C. VOC-Content-Restricted Products: VOC content not greater than required by the following:
1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
2. Joint Sealants: SCAQMD 1168 Rule.
3. Paints and Coatings: Each color; most stringent of the following:
a. 40 CFR 59, Subpart D.
b. SCAQMD 1113 Rule.
c. CARB (SCM).

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

<<<<<&#8203UPDATE NOTES: SEE MASTER NOTES FOR ADDITIONAL INFORMATION.>>>>>

PART 1 GENERAL

3.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Pre-installation meetings.

D. Cutting and patching.

E. Cleaning and protection.

F. Demonstration and instruction of Owner personnel.

G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

H. General requirements for maintenance service.

3.02 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

3.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

C. Project Record Documents: Accurately record actual locations of capped and active utilities.

3.04 PROJECT CONDITIONS

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.

D. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

E. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

3.05 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

4.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

PART 3 EXECUTION

5.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

5.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

5.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

5.04 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

5.05 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
   2. Remove items indicated on drawings.
   3. Relocate items indicated on drawings.
   4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.

b. Provide temporary connections as required to maintain existing systems in service.

4. Verify that abandoned services serve only abandoned facilities.
5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

D. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.

E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
4. Trim existing wood doors as necessary to clear new floor finish. Refinish trim as required.

F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

G. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

H. Clean existing systems and equipment.

I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

J. Do not begin new construction in alterations areas before demolition is complete.

K. Comply with all other applicable requirements of this section.

5.06 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

5.07 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

5.08 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

5.09 DEMONSTRATION AND INSTRUCTION

A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

5.10 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

5.11 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

5.12 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect and Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

5.13 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 SUMMARY

A. Included in this Section: The requirements for progress cleaning and final cleaning of project and removal of waste, debris, and rubbish.

1.02 GENERAL

A. Contractor shall confine its operations to areas permitted by Contract Documents and keep Project site clean and free from unreasonable accumulation of excess dirt, materials, or waste caused by Contractor.

B. Corridors shall be kept clean and clear at all times. All matters related to construction shall be conducted so as to cause the least possible interference with Owner's normal use of premises, including emergency egress and operations.

PART 2 PRODUCTS

2.01 LEANING MATERIALS

A. Use cleaning materials which will not create hazards to health or property, and which will not damage surfaces.

B. Use only materials and methods as recommended by manufacturer of material or surface being cleaned.

PART 3 EXECUTION

3.01 PROGRESS CLEANING

A. During construction period keep premises and public properties under Contractor's control free from accumulations of waste materials, debris, and rubbish, caused by operations. Maintain the site in a clean and orderly condition. Clean newly installed Work as frequently as necessary through remainder of construction period.

B. Ensure adequate workers, cleaning materials, and equipment are always available.

C. Make adequate provisions to prevent dust and debris from being carried, blown, or otherwise transported outside the immediate area of operation.

D. Remove combustible materials such as paper and cardboard from the Project daily. Prevent accumulations of wastes that create hazardous conditions.

E. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing space.

F. Provide on-site containers for collection of waste materials, debris, and rubbish. Provide a collection can at each location used as an eating area. Pick up all garbage daily.

G. Remove waste materials, debris and rubbish from site and legally dispose of at legal public or private dumping areas off of Owner's property. Do not bury or burn waste materials at the site. Do not discharge volatile, harmful or dangerous materials into drainage systems.

H. Vacuum clean interior areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until building is ready for Substantial Completion or occupancy.

I. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

J. Requirements of this Section are in addition to removal of debris and cleaning specified in other sections.

K. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Properly dispose of waste and rubbish.

L. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

M. Paved Areas: Clean (“broom clean”) debris and soil from paved sidewalks, roadways and parking areas immediately following completion of earthwork activities.

3.02 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean the entire construction area and adjacent areas affected by the performance of work under this Contract.

C. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building's cleaning and maintenance program. Comply with requirements of material manufacturer and with requirements for cleaning contained in other sections of the Specifications. Where other sections are more specific or demanding, they shall govern.

D. Complete final cleaning before requesting inspection for Certification of Substantial Completion.

E. Requirements of this Section are in addition to removal of debris and cleaning specified in other sections.

F. Final cleaning includes, but is not limited to, the following:
1. Remove labels that are not required as permanent labels.
2. Clean sight-exposed interior and exterior hard-surfaced finishes, to a dust-free condition, free of fingerprints, stains, films, and similar foreign substances. Remove dust with treated dust cloths and vacuums.
3. Clean, and damp mop resilient and hard-surface floors as specified.
4. Vacuum clean carpeted and similar soft surfaces where manufacturer recommends cleaning by vacuuming.
5. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances that are noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
6. Clean and polish exposed hard and glossy surfaces.
7. Remove paint splatters, spots, stains, and foreign matter from hardware or other factory finished surfaces or surfaces not to be painted.
8. Wipe surfaces of equipment clean. Remove excess lubrication and other substances.
9. Vacuum dust and debris from the interior of casework, lockers, and similar items.
10. Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.
11. Clean food service equipment, if present, to a condition of sanitation ready and acceptable for intended food service use.
12. Clean light fixtures and lamps so as to function with full efficiency. Replace burned out electric lamps.
13. Clean debris from roofs, gutters, and downspouts systems.
14. Clean debris from new and existing drainage systems.
15. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
16. Clean concrete floors in non-occupied spaces broom clean.
17. Clean permanent filters of ventilating equipment and replace disposable filters when units have been operated during construction; in addition, clean ducts, blowers, and coils when units have been operated without filters during construction.
18. Clean all electronic detectors so as to function with full efficiency.
19. Sweep clean and wash down all exterior pavement surfaces; remove stains, spills and foreign substances including grease and oil deposited on pavement by Contractor's vehicles.

20. Clean project site, including landscape developed areas, of litter and foreign matter. Rake grounds that are neither planted nor paved, to a smooth, even-textured surface.

G. Removal of Protection: Except as otherwise indicated or requested by Owner's Representative, remove temporary protection devices and facilities which were installed during course of the work to protect previously completed work during remainder of construction period. Failure to remove protection items as specified will result in payment being withheld until removal is accomplished.

H. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the project of rodents, insects, and other pests.

I. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not bum waste materials at the site. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

J. Maintain cleaning until Contract Completion.

K. Where extra materials of value remain, dispose of these to Owner's best advantage as directed.

3.03 CONSTRUCTION WASTE MANAGEMENT

A. Definitions

B. Clean: Untreated and unpainted; not contaminated with oils, solvents, sealant (caulk), or the like.
   1. Construction Waste: An umbrella term for construction, demolition and remodeling solid waste, typically including extra building materials, rubble & material that has reached the end of its useful life for its intended use, packaging, trash & debris incidental to the project construction. Construction Waste includes salvageable, returnable, recyclable, and reusable material.
   2. Diversion Goal: Percentage of Construction Waste material (by weight or by volume) which is intended to be reused, recycled, returned or otherwise salvaged and thus diverted from landfill.
   3. Hazardous Waste: Waste that is ignitable, corrosive, toxic and/or reactive and poses substantial or potential threats to public health or the environment. Hazardous Waste is not recyclable and not included when calculating Diversion Goal or percentage and shall be disposed of according to the General Requirements.
   4. Landfill Tipping Fees: Monies paid for burying non-recyclable Waste in the landfills.
   5. Recycle: To sort, clean, treat & reconstitute or remanufacture Construction Waste materials for reuse in the same form or some altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
   6. Return: To give back reusable items or unused products to vendors for credit.
   7. Reuse: To reuse a Construction Waste material on the project site.
   8. Scrap Revenue: Monies received by the hauler for recyclable materials.
   9. Trash: Non-hazardous products or materials unable to be reused, returned, recycled, or salvaged.
   10. WasteCap TRACE: Online submittal and reporting tool for Construction waste management. Information about TRACE may be obtained at http://www.wastecap.org/resources/wastecaptrace/.

C. Diversion Goal: Divert 75% by weight or volume of total waste generated through Substantial Completion.

D. Submittals: The Contractor shall compile the following Construction Waste Management (CWM) project information:
   1. CWM Plan: Required prior to commencing demolition, construction or waste removal activities and no later than 15 days after Notice to Proceed.

2. CWM Progress Reports: Required monthly or with each Request for Payment. Progress Report shall include the quantity of each material recycled, reused, or salvaged, the receiving party, and the applicable diversion rates. Contractor shall maintain a record of related weight tickets, manifests, receipts, and invoices for review by DSF upon request.
3. CWM Final Report: At Substantial Completion, the Lead Contractor shall submit a Final Report summarizing total waste and trash quantities and rates for all Contractors over the course of the project.

E. CWM Plan: The CWM Plan shall include, but is not limited, to the following:
1. Schedule - Include milestones and key reporting dates of construction waste management.
2. Trash Materials List - Include estimated quantities and types of materials expected to be discarded as trash.
3. Diverted Materials List - Include estimated quantities and types of Construction Waste materials anticipated to be salvaged, reused, returned or recycled. Identify applicable markets for reuse and/or recycling. At a minimum, include scrap metal and all other materials required by statute or regulation to be recycled (e.g., cardboard, cans, bottles, office paper, fluorescent tubes, refrigerants, mercury, etc.). Other recyclable materials may include, but are not limited to:
   a. Aluminum Cans, Straps, and Sheet: Recycle as metal.
   b. Asphalt: Break up and transport to asphalt-to-asphalt recycling facility, or recycle on site.
4. Brick: Can be reused whole, or crushed for use as landscape cover, sub-base material or fill.
   a. Building Components and Fixtures: Windows, doors, cabinets, hardware, plumbing and electrical fixtures may be salvaged. Porcelain plumbing fixtures may be crushed for fill.
   b. Carpet and Carpet Pad: Carpet may be able to be reused or recycled if sufficient quantities are generated. Store clean, dry carpet and pad in a closed container or trailer.
   c. Ceiling Panels: Ceiling panels may be able to be recycled if sufficient quantities are generated. Sort by size, palletize, and shrink-wrap for shipment to and recycling by a ceiling tile manufacturer.
   d. Concrete, Precast Concrete: Can/may be able to crushed and graded for use as riprap, aggregate, sub-base material, or fill. Remove steel reinforcement and other metals and recycle with other metals. Neutralize alkalinity of concrete fill if planting above.
5. Concrete Block: Can be reused whole, or crushed for use as sub-base material or fill, used as concrete aggregate.
   a. Corrugated Cardboard and Paper: Separate for recycling into new paper products. Painted, waxed or muddy cardboard or paper is unsuitable for recycling and should be discarded.
   b. Dimensional Lumber, Oriented Strand Board, Plywood, Crates, and Pallets: Large pieces can be reused. Wood unsuitable for reuse may be used to manufacture particleboard and other composite wood products, chipped or shredded for use as animal bedding, landscape use, groundcover, mulch, compost, pulp, or process fuel. Painted or treated wood may not be recycled. Some recyclers have equipment to remove nails.
   c. Doors and Hardware: May be reused. Brace open end of door frames and leave door hardware attached to doors, except for removing door closers,
   d. Glass Containers: Recycle as glass.
   e. Gypsum Board: Clean Standard, Type X, and Plaster Base (standard blue board) drywall, free of tape, joint compound, paint, nails, screws, or other contaminants may be processed and spread as a soil amendment. (Gypsum wallboard WR (green),

Sheathing (brown/black), Mold Resistant Panels or Specialty Type X cannot be used due to additives unsuitable in soil amendments.)Land Clearing Brush and Logs: Can be chipped or shredded for use as ground cover, mulch, compost, pulp, or process fuel. Larger branches or logs may be used as raw material for various products or other purposes.

f. Lighting Fixtures: Separate lamps by type and protect from breakage.
g. Metals, Ferrous and Nonferrous: Separate for recycling: banding, castings, ceiling grid, copper and other metal pipe, conduit and accessories, ductwork, extruded metals, rebar and metal stud cut-offs, roofing and sheet metals, miscellaneous steel shapes, miscellaneous metal parts, structural steel.
h. Piping: If separated for reuse, reduce piping to straight lengths and store with joints, accessories and other components by type and size.
i. Vinyl: Siding, window extrusions, floor tiles, and sheet flooring may be able to be separated for recycling into new vinyl products.

6. Separation and Materials Handling Services and Equipment: Description of how Construction Waste materials will be separated, cleaned (if necessary), protected from contamination and diverted, and the entity who will perform those services.
7. Documentation Procedures: Method to collect data and document materials leaving the project site as Trash or diverted for recycling for incorporation into the CWM Progress Reports.
8. Educational and Motivational Procedures: Means and methods the Lead Contractor will employ to ensure full participation of all project construction personnel in CWM Plan activities. These might include periodic meetings, demonstrations, incentive/reward programs, etc.
9. Construction Waste Auditing Procedures: Methods of monitoring and enforcing adherence to CWM Plan.

F. Construction Waste Management Implementation

1. The Contractor is responsible for implementing the Construction Waste management requirements specified herein and shall designate a Waste Manager to coordinate and monitor the waste management activities, including coordination of separation, handling, recycling, salvage, reuse, and return methods used by all project construction personnel.
2. Subcontractors who do their own recycling shall report all applicable Construction Waste recycling and Trash amounts to the Lead Contractor as needed to support the development of the CWM Plan and Progress and Final Reports.
3. The Contractor shall also provide:
   a. Education and Instruction: Contractor shall provide on-site instruction as described in the CWM Plan to engage all construction personnel in separation, handling, recycling, salvage, reuse, and return methods throughout the project.
   b. Separation Facilities: Contractor shall lay out and identify a specific area on the site and shall provide sorting bins for separating materials for recycling, salvage, reuse, and returns. The Contractor shall clearly identify the recycling area and sorting bins with durable signs and shall keep it neat and clean to avoid contamination of materials.
   c. Acceptable sorting methods are:
      1) Sorting recyclable materials at the Project site and transporting them to recycling markets directly from the Project site.
      2) Employing haulers who make use of a materials-recovery facility or a transfer station where recyclable materials are sorted from the waste and recycled before disposing of the remainder. If using a hauler or recycling facility to sort out recyclables, verify that the hauler sorts out all construction waste loads and is not limited to those that are not acceptable at the landfill. Verify that the hauler or recycling facility recycles at least three types of materials.

END OF SECTION

SECTION 018113
SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. General: Provide the Work in accordance with the general requirements and procedures for compliance with certain prerequisites and credits needed for the Project to earn Florida Green Commercial Building Standard “FGBC Version 4” Bronze certification based on FGBC’s Florida Green Commercial Building Standard.

B. Specific requirements for FGBC are also included in other Sections.

1.02 DEFINITIONS

A. FGBC: Florida Green Building Coalition “Florida Green Commercial Building Standard.”
   1. Definitions that are a part of “Florida Green Commercial Building Designation Standard” apply to this Section. It is a voluntary, Florida-based, building rating system based on existing proven technology. It evaluates environmental performance from a "whole building" perspective over a building's life cycle, providing a definitive standard for what constitutes a “green building.”

B. Bio-Based Materials: Bio-based products must meet the Sustainable Agriculture Network’s Sustainable Agriculture Standard. Bio-based raw materials must be tested using ASTM Test Method D6866 and be legally harvested, as defined by the exporting, and receiving country. Exclude hide products, such as leather and other animal skin material. Products meeting biobased materials criteria are valued at 100% of their cost for the purposes of credit achievement calculation include incidental details not usually shown or specified, but necessary for proper installation and operation.

C. Local Manufacturing: Materials that have been manufactured within a 700-mile radius of Project site. (*Manufacturing refers to the final assembly of components into the building product that is furnished and installed by the tradesman.)

D. Local Raw Materials Extraction: Materials made from raw materials that are harvested, extracted or recovered within a 700-mile radius from the project site.

E. Durable Materials: Finishes systems and materials capable of withstanding the moisture and heat impacts of the local climate for a period of 30 years on 100% of the exposed exterior surfaces.

F. Low Maintenance Finishes: Interior and exterior finish materials that require minimal or no periodic cleaning.

G. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.

H. Recycled Content:
   1. “Post-consumer” material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
   2. “Pre-consumer” material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.
   3. Mechanical and electrical components shall not be included in this calculation. Recycled content materials shall be defined in accordance with the Federal Trade Commission document, Guide for the Use of Environmental Marketing Claims, 15 CFR 260.7 (e), available at www.ftc.gov/bcp/grnrule/guides980427.htm.

I. Volatile Organic Compounds (VOC): Any compound of carbon which participates in atmospheric photochemical reactions, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. Compounds that have negligible photochemical reactivity, listed in EPA 40 CFR 51.100(s) are also excluded from this regulatory definition. The compounds vaporize, i.e., become a gas, at normal room temperatures.

1.03 RELATED SECTIONS

A. Section 01 74 19 - Construction Waste Management

B. Section 01 91 13 – Commissioning

C. Divisions 01 through 49 sections for FGBC requirements specific to the work of each of these sections. Requirements may or may not include reference to FGBC.

1.04 SUBMITTALS

A. Submit under provisions of Division 01 Section 01 33 00 "Submittal Procedures."

B. General: Submit additional FGBC submittals required by other specification sections.

C. FGBC submittals are in addition to other submittals. If the submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated FGBC requirements.

D. Project Materials Cost Data: Provide a statement indicating the total cost for building materials used for the project, excluding mechanical, electrical, and plumbing components, and specialty items such as elevators and equipment.

E. FGBC Action Plans: Provide preliminary submittals within fourteen 14 days of the date established for the Notice to Proceed indicating how the following requirements will be met:
   1. Waste Management Plan complying with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."
   2. Recycled Content Materials List: Indicate cost, post-consumer recycled content, and post-consumer recycled content for each product having recycled content.
   3. Certified Wood Products List: Indicate each product containing certified wood, including its source and cost of certified wood products.
   4. Construction Indoor-air-quality Management Plan complying with Division 01 Section 01 57 40 "Construction IAQ Management Plan."

F. FGBC Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with FGBC action plans for the following:
   1. Waste Management Plan complying with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."
   2. Recycled content.
   3. Regional Materials
   4. Certified Wood Products

G. FGBC Documentation Submittals:
   1. Waste Management Plan: Comply with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."
   2. Recycled Content: Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include a statement indicating costs for each product having recycled content.
   3. Regional Materials: Product data indicating location and distance from the project of the material manufacturer and point of extraction, harvest, or recovery for each raw material. Include a statement indicating the cost for each regional material and the fraction by weight that is considered regional.

4. Certified Wood Products: Product data and chain-of-custody certificates for products containing certified wood. Include a statement indicating the cost for each certified wood product.
5. Indoor Environmental Quality:
    a. Construction indoor-air-quality management plan.
    b. Product data for temporary filtration media.
    c. Product data for filtration media used during occupancy
    d. Pre-Occupancy IAQ testing: Copy of the IAQ testing results indicating that the maximum chemical contaminant concentration requirements are not exceeded.
6. Adhesives and Sealants: Product data for adhesives and sealants used inside the weatherproofing system indicating VOC content of each product used. Indicate VOC content in g/L.
7. Paints and Coatings: Product data for paints and coatings used inside the weatherproofing system indicating VOC content of each product used. Indicate VOC content in g/L.
8. Carpet Systems: Product data for carpet and carpet cushion installed in the building interior indicating that the product complies with the CRI Green Label Plus testing program. Product data for carpet adhesives used in the building indicating VOC content in g/L.
9. Exterior Lighting Efficiency: Signed approved lighting submittal, photos of installed lighting and Watt per square foot calculations.
10. Interior Water Use Reduction: Signed approved submittal with required information of Maximum Performance rating or WaterSense Certified, gallons per flush information,
11. Protect, Monitor, & Remediate Poor IAQ
    a. Carbon Dioxide: Provide copy of approved submittal of equipment provided, plans indicating installed locations.
12. Reduce Heat Islands:
    a. Roof: Provide a roof drawing with area calculations, signed approved submittal with SRI information of roof materials and photos of installed roofing where possible.
    b. Building: Provide a cut sheet of the exterior wall coating/paint with SRI information, shading calculations, and photos of building exterior.
13. Commissioning:
    a. Fundamental Building Systems Commissioning: Submit a copy of the CxA signed contract (black out fees), OPR, BOD, Commissioning Plan and Commissioning Report. The commissioning plan should include an overview of the commissioning process, a list of systems and features, the commissioning participants and their roles, a communication and management plan, an outline of the scope of commissioning tasks, and a schedule. Where possible, include copies of the completed startup checklists. The commissioning report should contain the analysis of whether each commissioned system or component meets the design intent, specifications, was properly installed, passed the functional performance tests, was properly documented in the O&M manuals, and was covered in the operator training.
    b. Advanced Building Systems Commissioning: Submit a copy of the signed contract explaining the scope of work (contract amount may be excluded). Provide a copy of the CxA design document review report provided to the owner and design team, provide a copy of the review notes of the specifications provided to the design team, provide a copy of the owner manual for re-commissioning, and a copy of building operation review contract.
    c. Additional Building Systems Commissioning: Provide a copy of the signed contract explaining the scope of work (contract amount may be excluded) and a letter from the CxA or the building owner stating all CxA duties were completed. Also, should include a list of equipment from the CxA that they recommended for additional commissioning.
14. Stormwater Pollution Prevention Plan (SWPPP) and Florida Department of Environmental Protection (FDEP) Notice of Intent (NOI) onsite: Submit the details of the stormwater

pollution prevention plan and photos of installed stormwater pollution prevention measures.

15. FDEP Professional: Provide the name of Certified FDEP Professional and a copy of the page of the permit application identifying the FDEP individual and their contact information.
16. Indoor Air Quality (IAQ) Management Plan, During Construction: Provide a copy of the specifications indicating the use of SMACNA guidelines, a copy of the written Indoor Air Quality Management (IAQ) Plan, and photos of the IAQ procedures in place during construction.
17. Protect, Monitor, & Remediate Poor IAQ:
    a. Pre-Occupancy IAQ testing: Provide a copy of the IAQ testing results indicating that the maximum chemical contaminant concentration requirements are not exceeded.
18. Low Emitting Materials:
    a. Adhesives and Sealants: Submit all Material Safety Data Sheets (MSDS) highlighting the stated VOC emissions for each adhesive and sealant used inside the building.
    b. Paints & Coatings: Provide signed approved submittal for paints and coatings. Contractor shall maintain all Material Safety Data Sheets (MSDS) highlighting the stated VOC emissions for each paint and coating used inside the building.
    c. Carpet Systems: Provide signed approved submittal and photos of installed carpet meeting the Carpet & Rug Institute Green Label or Green Label Plus Certification Program.
    d. Healthy Flooring: Submit cut sheets of flooring selections meeting 80% of a minimum of the flooring installed shall be classified as hard or resilient and comply with GreenGuard, Floorscore, Declare, RED LIST FREE, Cradle to Cradle, Blue Angel, Greenhealth or similar health-related certification.
    e. Composite Wood and Agrifiber: Provide signed approved submittal for installed products and manufacturer catalog cut sheet for each composite wood or agrifiber product used in the building indicating that the bonding agent used in each product contains no added urea-formaldehyde. Also, provide photos of installed wood and agrifiber products.
19. Material Efficiency and Global Responsibility:
    a. Certified Wood: Submit a copy of the wood certification and the calculations showing the percentage of certified wood used in the construction of the project. Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.
20. Waste Management:
    a. Construction Waste Recycling: Provide copies of the monthly waste reports indicating diverted waste and calculate the total waste material diversion rate.
    b. Recyclable Materials: Provide cut sheets for the products calculated as a part of this credit and information about the existing recycling facilities. This credit may also be claimed if the area has an established C&D waste recycling infrastructure.
    c. Durable Materials, Exterior Finish Materials: Provide plan details identifying the exterior materials, approved submittals, and corresponding warranty certificate for exterior finish materials.
21. Local/Regional Materials:
    a. Local Manufacturing: Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.
    b. Local Raw Materials Extraction: Submit the completed materials checklist and supporting documentation of the percentages claimed including budget documentation.
    c. Resource Reuse: Submit supporting documentation and photos incorporating salvaged, refurbished, or reused materials, products, and furnishings into the project.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Contractor's Responsibilities:

1. Respond to questions and requests from Architect and the FGBC regarding FGBC credits that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until the FGBC has made its determination on the Project's FGBC certification application. Document responses as informational submittals.
    a. FGBC Status Meetings:
2. FGBC Compliance Officer, Architect and Owner’s Representative will conduct regularly scheduled meetings to review Project Status. These may be conducted concurrently with other Project Meetings required by Division 01 Section “Project Management and Coordination.”

1.06 ACTION SUBMITTALS

A. General: Refer to the FGBC scorecard, technical sections of the Specifications and this Section for responsibilities regarding documentation.
    1. The Contractor and other FGBC team members are responsible for documentation of construction-related information required for FGBC compliance.
    2. Submit additional sustainable design submittals required by other Specification Sections.
    3. Maintain copies of FGBC compliance submittals for confirmation of compliance at Project completion.

B. Sustainable design submittals are in addition to other submittals, but shall be processed at the same time as other submittals are processed.
    1. If submitted item(s) are identical to those submitted to comply with other requirements, include separate, additional copy(ies) with other submittal as a record copy of compliance with indicated FGBC requirements instead of separate sustainable design submittal. Mark additional copy "sustainable design submittal."

C. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project and cost items that comply with sustainable requirements specified, for work included under technical sections of the work. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:
    1. Plumbing.
    2. Mechanical.
    3. Electrical.
    4. Specialty items, such as elevators and equipment.
    5. Wood-based construction materials excluding components of mechanical, electrical, plumbing or specialty items such as elevators and equipment. Include statement indicating total material cost for all new, permanently-installed wood-based materials used for Project. Material costs exclude labor, equipment, overhead, and profit.

D. Sustainable Design Action Plans: Provide preliminary submittals within 14 days of date established for the Notice to Proceed for products to be incorporated in the work of this project, that comply with the following requirements.
    1. Sustainable Design Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with sustainable design action plans.

1.07 QUALITY ASSURANCE

A. Sustainable Design Program: The Contractor shall be responsible for implementing processes, programs, means and methods required to ensure compliance with sustainable design requirements and objectives of the Contract Documents, including but not limited to the following:
    1. Reviewing and vetting submittals for technical sections with respect to compliance with Sustainable Design Requirements.
    2. Product and Execution requirements specified in various sections of the project specifications.

3. Proposed FGBC credits that specifically address construction execution issues, material reporting requirements, and indoor air quality testing requirements.
4. Responsibilities of Subcontractors: Each subcontractor shall coordinate FGBC submittal requirements and process delivery of certifications and FGBC substantiation documents through the Contractor's FGBC Compliance Officer, who in turn will coordinate with the A/E Team.

B. Responsibilities of the FGBC Compliance Officer: The FGBC Compliance Officer shall perform the following services:
1. General: Take primary responsibility for organizing and managing the process of compiling requirements of the construction-related FGBC credits for which each Subcontractor is responsible, including collecting and organizing the documentation required for the Architect's submission to the FGBC upon completion of the project.
2. IAQ Program: Develop an appropriate and comprehensive Construction Indoor Air Quality (IAQ) Management Plan, as required under the FGBC Construction Indoor Air Quality Management Credit. The FGBC Compliance Officer shall be responsible for implementing construction activity pollution prevention, verifying compliance, enforcing, and documenting implementation of the Construction IAQ Management Plan. Each Subcontractor shall comply with the requirements of this program.
3. Construction Waste Management: Develop a Construction Waste Management Plan, as required under the FGBC Construction Waste Management credit for diversion of waste from landfill. The Contractor shall be responsible for verifying compliance, enforcing and documenting implementation of the Construction Waste Management Plan.
4. FGBC Compliant Materials: Assist the Subcontractors in identifying and obtaining supporting documentation for products that satisfy the specified sustainable design and specified product requirements (for example, low VOC sealants and adhesives; recycled content; regionally extracted and manufactured materials, and other items listed in this Section). Each Subcontractor shall coordinate with the FGBC Compliance Officer and provide documentation in a timely manner as required for filing by the A/E team.
5. FGBC Status Meetings: Assist the Architect in scheduling, conducting and distributing minutes of record the Architect takes at regularly scheduled FGBC status meetings consisting of members of the Contractor, Subcontractors, Architect, Commissioning Agent and the Owner.
6. Schedules and Tracking: Prepare schedules and tracking documentation for circulation to Contractor, Subcontractors, Architect, Commissioning Agent and the Owner for the purposes of organizing the sustainable design compliance responsibilities of each team member.
7. Observation and Inspection: Perform periodic on site observations and inspections of the work in progress in order to verify conformance with all required sustainable design requirements. These observations shall occur not less than once per week.
8. Documentation: Provide documentation content for the Architect's formal FGBC submission documentation, as required by the Florida Green Building Coalition to verify conformance with the FGBC rating system.

C. The services described above (by the FGBC Compliance Officer) shall not preclude nor substitute for the requirements of other dedicated sustainable design related services that the Project may require or general construction supervision required on a full or part-time basis to verify.

PART 2 PRODUCTS

2.01 SUSTAINABLE DESIGN - PERFORMANCE CRITERIA

A. Performance criteria listed below represent overall project-wide criteria. Individual sections of the Specifications contain specific thresholds selected by the Architect/Engineer in order to comply with FGBC credits targeted to achieve the FGBC Bronze certification level. The Contractor can vary from individually targeted percentages and thresholds stated in individual

sections of the Specifications, as long as the overall percentage for the FGBC credit is achieved as required to provide a FGBC Version 4 Bronze certification level.

2.02 SPECIFIC PERFORMANCE CRITERIA FOR INDIVIDUAL PRODUCTS AND SYSTEMS ARE LISTED IN EACH OF THE TECHNICAL SECTIONS. IF PRODUCT SPECIFIC PERFORMANCE CRITERIA CANNOT BE MET, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALTERNATIVE PRODUCTS WHICH ENSURE THAT THE OVERALL PROJECT WIDE PERFORMANCE WILL STILL BE ACHIEVED. ALL PRODUCT SUBSTITUTIONS MUST COMPLY WITH REQUIREMENTS OF DIVISION 01 SECTION "SUBSTITUTION PROCEDURES".

2.03 MATERIALS

A. Provide products and procedures necessary to obtain FGBC credits required in this Section. Although other Sections may specify some requirements that contribute to these FGBC credits, the Contractor shall provide additional materials and procedures necessary to obtain FGBC credits indicated.

B. Certified Wood: All hardwood used on the project must be FSC, SFI or CSA certified. Use a minimum of 50% certified of wood-based materials and products, for wood building components including, but not limited to, structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete formwork and pedestrian barriers.

C. Recyclable Materials: Use materials that at the end of their useful lifecycle can be recycled by the manufacturer into the raw materials stream of another product. The value of such products will constitute a minimum of 10% of the total value of the materials in the project. The materials selected to comply with this category must be recyclable through a structured existing program.

D. Local/Regional Materials: Use a minimum of 25% (by cost) based on project cost (div 2-10) of building materials and products that are manufactured within a 700-mile radius of the project site. Additional credits can be earned by using a minimum of 25% of materials that are manufactured within 700 miles of the project site.

E. Local Raw Materials Extraction: A minimum of 10% of the project materials are made from raw materials that are harvested, extracted, or recovered within a 700-mile radius from the project site. Earn additional points for each additional 10% of the project materials that are extracted within 700 miles of project site.

F. Recycled Content: Incorporate recycled materials (based on materials cost). Use materials with recycled content such that post-consumer and/or post-industrial recycled content constitutes a minimum of 20% of the total project cost. Earn one additional point for each additional 5% of recycled content materials. The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item.

G. Low Maintenance Finishes: Use interior and exterior finish materials that require minimal or no periodic cleaning. Use materials (on the floors, walls, and ceilings) that can be maintained in a serviceable condition with minimal periodic cleaning for 100% of the interior finishes and 50% (by surface area) of the exterior finishes of the building.

H. Physical Termite Barrier: Physical barriers must be used in addition to or in lieu or traditional termite treatments. Physical barriers include stainless steel mesh, elastomeric plumbing boots, or other means of physically sealing the slab penetrations.

I. Fire Resistant Exterior Finishes: Project must utilize fire-resistant exterior wall cladding, roof covering or sub-roof, soffit and vent materials. An exterior cladding other than wood or vinyl must be used on all exterior walls. A roof covering other than asphalt shingles or wood shakes must be used on the entire roof. Roof covering fire resistance shall exceed Code requirements by a minimum of one classification. Soffit and vent materials must be other than wood or vinyl.

2.04 LOW-EMITTING MATERIALS

A. Adhesives and Sealants: All Adhesives and Sealants shall be low Volatile Organic Compound (VOC) and meet the VOC limits below which were established by the South Coast Air Quality

Management District (SCAQMD) Rule #1168 or CDPH STD Method V1.1 AND all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51.

VOC Limit, Less Water and Less Exempt Compounds Grams per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVE	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT AND ASPHALT TILE ADHESIVES	50
DRY WALL AND PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVES	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE PLY ROOF MEMBRANE ADHESIVES	250

B. Paints & Coatings: Interior paints and coatings shall be less than 100 g/l for non-flat paint and less than 50 g/l for flat paint. For additional architectural coating VOC limits please refer to SCAQMD Rule 1113 or CARB 2007 SCM.

C. Carpet Systems: All carpet and carpet products shall meet the Carpet & Rug Institute Green Label or Green Label Plus Certification Program.

D. Healthy Flooring: 80% of a minimum of the flooring installed shall be classified as hard or resilient and comply with GreenGuard, Floorscore, Declare, RED LIST FREE, Cradle to Cradle, Blue Angel, Greenhealth or similar health-related certification.

E. Composite Wood and Agrifiber: All composite wood and agrifiber products that are ultra-low emitting formaldehyde (ULEF) or are no added urea formaldehyde (NAUF).

PART 3 EXECUTION

3.01 CONSTRUCTION WASTE MANAGEMENT

A. Construction Waste Management: Comply with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."

3.02 CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT

A. Construction IAQ Management Plan During Construction: Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."
   1. If Owner authorizes the use of permanent heating, cooling, and ventilating systems during the construction period as specified in Division 01 Section 01 50 00 "Temporary Facilities and Controls", install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.
   2. Replace all air filters immediately prior to occupancy.

3.03 PRE-OCCUPANCY IAQ TESTING

A. Perform IAQ testing over a minimum 4-hour period for a minimum of at least one (1) test per 25,000 sqft within the breathing zone, which is between 3’0” and 6’ 0” above the finished floor. Test and remediate building prior to occupancy using procedure consistent with the United States Environmental Protection Agency’s current Protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445.

Test for the following contaminants and maximum concentration:

CONTAMINANT	MAXIMUM CONCENTRATION
FORMALDEHYDE	50 PARTS PER BILLION
PARTICULATES (PM10)	50 MICROGRAMS PER CUBIC METER
TOTAL VOLATILE ORGANIC COMPOUNDS (TVOC)	500 MICROGRAMS PER CUBIC METER
* 4-PHENYLCYCLOHEXENE (4-PCH)	6.5 MICROGRAMS PER CUBIC METER
CARBON MONOXIDE (CO)	9 PARTS PER MILLION AND NO GREATER THAN 2 PARTS PER MILLION ABOVE OUTDOOR LEVELS.

*This test is only required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing material are installed as part of the base building systems.

3.04 CONSTRUCTION WASTE RECYCLING

A. Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage a minimum of 50% of construction, demolition, and land-clearing waste. Calculations can be done by weight or volume but must be consistent throughout. Earn additional points for increased diversion of waste.

END OF SECTION

SECTION 01 9113

GENERAL COMMISSIONING REQUIREMENTS

PART 1 - 1.0 GENERAL

1.1 SUMMARY

A. This section includes the general requirements that apply to the implementation of the commissioning process for this project. Commissioning (Cx) is a quality-oriented process for achieving, verifying, and documenting that the performance of the facilities, systems and assemblies meet defined objectives and criteria.

B. The commissioning process does not limit the responsibilities of the Contractor or the Design teams to provide a fully functional facility.

C. Related Sections
   1. Division 22 Plumbing
   2. Division 23 Heating, Ventilation, and Air Conditioning (HVAC)
   3. Division 25 Integrated Automation
   4. Division 26 Electrical

1.2 REFERENCES

A. ASHRAE Guideline 0 – 2019

B. FGBC Florida Green Building Coalition Version 4

1.3 DESCRIPTION

A. The commissioning process is based on ASHRAE Guideline 0-2019, and requirements of the FGBC Version 4.

B. Installations are observed at various stages of construction and systems are functionally tested under various conditions, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, safety modes, power failure, etc.

C. Components are verified and documented to be installed and responding in accordance with Owner requirements and contract documents.

D. Functional tests are executed after Cx checklists are complete.

E. The Commissioning plan describes the commissioning roles and responsibilities for the team. They include but are not limited to:
   1. Commissioning Team:
      a. Participate in the Cx process.
      b. Attend Cx kick-off meeting and other Cx Team meetings.
   2. Cx Authority
      a. Direct the Cx process
      b. Provide Cx Plan, Cx Checklist, Functional Performance Tests (FPT), action item list and final Cx report.
      c. Lead the Cx Team meetings
      d. Assist with the development of the Cx schedule.

e. Perform field visits and document installation

3. Contractor:
   a. Attend Cx kick-off meeting and other Cx Team meetings
   b. Include requirements for Cx activities in each subcontract.
   c. Facilitate coordination of Cx activities.
   d. Manage Cx communication with sub-contractors.
   e. Incorporate Cx activities and milestones into master construction schedule. Coordinate with CxA.
   f. Manage the completion, submission, and review of Checklist and other documentation. Forward completed checklist to CxA at least 10 workdays prior to the scheduled testing date.
   g. Ensure corrective actions are taken for deficiencies, punch-lists, and other identified actionable items.
   h. Document responses and corrective actions for Cx action items and punch-lists.
   i. Provide CxA with required documentation from Cx activities and submittal request.
   j. Schedule, coordinate and assist CxA in seasonal or deferred testing and deficiency corrections required by specifications.
   k. Provide upon request, documentation such as manufacturer and model number, manufacturer's printed installation and detailed start-up procedures, full sequences of operation, O&M data, performance data, any performance test procedures, control drawings, and details of Owner contracted tests.

4. Sub-contractors:
   a. Attend Cx kick-off meeting and other Cx Team meetings
   b. Assist with the development of the Cx schedule.
   c. Complete and sign Cx Checklist in cooperation with the Contractor and submit with supporting documentation. Provide individuals or manufacturer's representatives with specific knowledge of completion of work.
   d. Ensure installation work is complete, is in compliance with Contract Documents, Checklist are complete and systems are ready for functional testing.
   e. Provide certified and calibrated instrumentation required to take measurements of system and equipment performance during functional testing.
   f. Execute inspections, tests, and functional testing as described in contract documents and Cx Plan. Demonstrate and manipulate systems and equipment to show proper operation.
   g. Provide documents such as trending, calibrations, testing, history, start-up, flushing, installation, etc. as needed for CxA review and documentation.

F. Systems to be commissioned:
   1. HVAC
      a. Air Systems
      b. Chilled Water
      c. Heating Hot Water
   2. Building Automation
   3. Plumbing
      a. Domestic Water
      b. Domestic Hot Water
   4. Electrical
      a. Lighting

b. Electrical Distribution

1.4 DEFINITIONS

A. Acceptance Phase – Phase during which system functionality is demonstrated by the installer and documented by the Cx Authority.

B. BAS – Building Automation System

C. Building Envelope: The assembly of floor, wall/skin, and roof system components that are designed and intended to reduce the transfer of thermal energy and water vapor and to help eliminate water intrusion.

D. Construction Phase – Installation of systems prior to functional testing.

E. Commissioning (Cx) Process – A quality focused process for enhancing the delivery of a project. The process includes focuses upon verifying and documenting that the facility and all of its systems and assemblies are planned, designed, installed, tested, operated and maintained to meet the Owner's Project Requirements.

F. CxA - Commissioning Authority is the consultant who facilitates the Cx program and directs and coordinates day-to-day Cx activities.

G. Cx Alloy – A cloud-based Commissioning software utilized by the CxTeam to manage the Cx process and documentation.

H. Cx Checklist – (also known as "pre-functional checklist or PFC's) is the list of items to inspect and elementary component tests that verify proper installation of equipment. The primary purpose of the Cx Checklist is to document static conditions and procedures prior to initial operation (e.g., belt tension, oil levels, labels affixed, gages in place, sensors calibrated, programming complete, etc.). It is a coordinated document representing the efforts of the various installing subcontractors.

I. Cx Plan - A manual providing documentation of roles and responsibilities and provides structured means of scheduling, coordination, and documentation for the Cx process.

J. Cx Team – The Cx A, Contractor, sub-contractors, and Owner.

K. Deficiency: Condition of a component, piece of equipment, or system that is not in compliance with Contract Documents.

L. FPT - Functional Performance Tests (aka functional test scripts) documents the dynamic function and operation of equipment and systems.

M. Issues Log – Items or issued identified by CxA (or other Owner reps) during construction or testing, that require contractor response. Independent of "punch-list", the primary role of the issues log is to track the resolution or closure of deficiencies, recommendations, clarifications, documentation, etc.

N. Start-up Plan – An organized plan to ensure systems and equipment are started and maintained properly during construction phase activities.

O. Systems Manual – An Owner focused, and FGCB required document for operating and maintaining the commissioned systems throughout the life of the facility. The Systems Manual is intended to be a usable information resource containing all of the information related to the systems, assemblies, and Commissioning Process in one place with indexes and cross references. The Systems manual is organized by "systems" not by specifications and includes design, operation, maintenance parameters, Cx test, etc.

P. TAB – Test, Adjust and Balance.

Q. Training Plan – A FGBC required documented, structured approach to Owner training.

R. Trending: Monitoring and recording controls points of systems as a function of time using building automation system.

S. Occupancy and Operations Phase – Warranty phase. (typically for one year)

1.5 SUBMITTALS

A. Startup Plan:
   1. Planned delivery dates for major material and equipment, and expected lead times
   2. Milestones indicating possible restraints on work by other trades or situations
   3. Start dates of individual work items
   4. Duration of individual work items
   5. Workflow process to start equipment
   6. Startup procedures including flushing, filtering, pre-testing, etc.
   7. Indoor Air Quality Control
   8. Trade coordination required to minimize dust
   9. Provide vendor specific start up documentation
   10. Coordination of equipment controlled and monitored
   11. Temporary controls

B. Completed Cx Checklist
   1. Complete Cx checklist prior to FPT execution
   2. Submit an executed Cx Checklist, via Cx Alloy, for each piece of equipment/system to be commissioned.

C. Systems Manual
   1. Organize manual by systems and submit in original electronic format (scanned documentation is not allowed)
   2. Include a table of contents, bookmarks and the following information:
      a. Owner's Project Requirements
      b. TAB Report
      c. Final Commissioning Process Report
      d. System (Provide the following for each commissioned system)
         1) Basis of Design
         2) Setpoints and schedules
         3) Manufacturer Start-up and Installation Manuals
         4) Manufacturer Operations and Maintenance Manuals
         5) System Schematics and single line diagrams
         6) Verified Record Drawings
         7) Test Results (not otherwise included in Cx Record)
         8) Periodic Maintenance Information for computer maintenance management system
         9) Training information
         10) Commissioning Report

D. Training Plan
   1. Organized list of specific equipment or systems that require training
   2. Separate agenda for each training session including but be not limited to:
      a. Construction Document and submittal review of systems
      b. Installation and as-built conditions
      c. Theory of operation
      d. Demonstration of operation
      e. Operation and Maintenance Document
      f. Servicing and Maintenance Schedules
      g. Interlocks and Safeties
      h. Troubleshooting & Repairs
   3. Manufactures recommended classroom training and schedule

E. User Workstation Planning Session Plan for each subject.
   1. Graphics Generation
   2. Point naming
   3. Alarm management

F. Integration Plan
   1. Network architecture and communications concepts/diagrams. Network architecture includes but is not limited to:
      a. Nodes
      b. Switches and Routers
      c. Integrated systems and/or sub-systems
      d. Dedicated I/O locations
   2. Coordination of vendor protocol and pointlist submission. Include an integration matrix detailing systems and protocols to be used.
   3. Workflow processes to integrate systems
   4. Include communication hardware, software, and protocols to implement full systems integration.
   5. Identify proposed enhancements or deviations from project documents. Include specific drawings or specifications impacted.
   6. Provide coordination efforts to accommodate complete integration of systems including:
      a. Vendor protocol requirements
      b. Vendor pointlist
   7. Submit communication risers for controllers and all integrated systesm.
   8. Submit maintenance schedules for all controller, valves, dampers, and instrumentation.

1.6 QUALITY ASSURANCE

A. Review the Cx Plan the plan for responsibilities and expectations during the Cx process.

B. During Construction and Acceptance Phase:
   1. Coordinate Cx activities with the Cx Team
   2. Confirm equipment installation and start up is completed prior to functional testing.
   3. Ensure Cx Checklist are completed prior to functional testing
   4. Demonstrate FPT with, and to the satisfaction of CxA.
   5. Manage and correct issues identified by CxA

6. Performs FPT retests as needed to verify correction of any deficiencies

1.7 SYSTEM STARTUP

A. Start equipment according to manufactures recommendation.

B. Document system start up time and date.

C. Document person(s) performing startup.

D. Protect equipment from construction dust & debris.

1.8 SCHEDULING

A. Coordinate and communicate commissioning activities with Owner, and CxA. Commissioning milestones include, but are not limited to:
   1. In-ground infrastructure inspections (i.e. grounding)
   2. Roof on
   3. Permanent power on
   4. Generator testing
   5. Permanent domestic water on
   6. Permanent chilled water on
   7. Duct pressure test
   8. Pipe pressure test
   9. HVAC start up
   10. TAB Start
   11. TAB completion
   12. Checklist completion
   13. Functional Acceptance Testing

B. Coordinate and communicate other activities such as inspections, meetings, and schedule changes to the CxA.

C. Ensure commissioning activities are incorporated into project schedule. Coordinate with CxA.

1.9 WARRANTY

A. During Occupancy and Operations Phase phase, a review of building performance as well as seasonal testing shall occur. Provide appropriate personnel for opposite seasonal testing and occupancy phase observations and testing.

B. Repair replace and correct, to the satisfaction of the Owner, any commissioning action items found during warranty period.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

A. Provide all specialized tools, test equipment, and instruments required to execute startup, checkout, and FPT of systems and equipment being commissioned.

B. Test equipment shall be of sufficient quality and accuracy to test and/or measure system performance according to specified tolerances and have calibrated per the respective specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to start of any work, check, verify, and coordinate work with Cx Plan, drawings, manufactures recommended installation/start-up, and specifications.

B. Promptly request clarification and instruction or report any conflicts, inadequate conditions or missing information in the Cx documents.

C. Respond to action items and field reports as noted by CxA. Provide action taken or solutions to each item.

3.2 FIELD QUALITY CONTROL

A. Cx Checklist:
   1. Complete Cx Checklist to document systems are installed according to contract documents and manufactures recommendations.
   2. Conduct a complete performance test for all systems to assure compliance with the contract documents.
      a. Any components on systems found defective or not performing satisfactorily shall be readjusted and retested after necessary corrective measures are performed.
      b. Corrective measures may include modification or addition of equipment and devices, control strategies and/or software program.
   3. Submit Cx Checklist, via Cx Alloy, prior to formal demonstration of FPT to the CxA.
   4. Schedule demonstration of FPT with CxA at least 10 days in advanced.

B. Repair, reprogram or replace any equipment or work that fails test.

C. Respond to, and take corrective action on deficiency items or non-conformance issues noted and reported to Cx team as an action list or punch list item. Document the following via Cx Alloy:
   1. The corrective action taken to remedy issue
   2. The date the corrective action was taken
   3. A picture of corrected issue
   4. Initials, or name of person responding to the issue
   5. RFI number if applicable

D. Notify and coordinate with CxA, observation of field test such as duct pressure test, pipe pressure testing, flushing, balancing, etc.

3.3 DEMONSTRATION

A. Coordinate FPT activities.

B. Provide competent person (vendor or manufactures representative) to demonstrate functional performance of each system being commissioned.

C. Utilizing CxA provided FPT, demonstrate to the CxA, the operation of each system being commissioned.
   1. Take actions as needed, to expedite testing and minimize unnecessary delays, while not compromising integrity of procedures.
   2. Implement corrective measure of any issues identified during FPT.

D. Coordination and Scheduling:

1. Integrate Cx activities into the project construction schedule. Include milestone deadlines for completion of Cx Checklist and durations for FPT of each system.
2. CxA will witness and document FPT of systems which as demonstrated by the Contractor or its sub contractor. Designated sub-contractor or vendor responsible for dynamic operation of a system or device shall demonstrate system functionality to CxA.

E. Manage the resolution of discrepancies, punch-list, issues, action items, etc. identified during the Cx process.

END OF SECTION

SECTION 024100
SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of built site elements.

B. Selective demolition of building elements for alteration purposes.

C. Abandonment and removal of existing utilities and utility structures.

1.02 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.03 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of 10 years of documented experience.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 SCOPE

A. Remove items indicated in drawings, for salvage, relocation, recycling, and disposal.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Use of explosives is not permitted.
   3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   4. Provide, erect, and maintain temporary barriers and security devices.
   5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.

E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

G. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

H. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Dismantle existing construction and separate materials.
   2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.03 EXISTING UTILITIES

A. Protect existing utilities to remain from damage.

B. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

C. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

D. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

E. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

F. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Separate areas in which demolition is being conducted from other areas that are still occupied.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

C. Protect existing work to remain.
   1. Repair adjacent construction and finishes damaged during removal work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove from site all materials not to be reused on site; comply with requirements of Section 017419 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 030320
CONCRETE WORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes cement concrete pavement for the following applications:

1. Driveways and roadways.
2. Parking lots.
3. Curbs and gutters.
4. Walkways.
5. Exterior topping slabs

B. Related Sections

1. Refer to Division 32 Unit Paving for brick pavers requiring installation coordination.
2. Refer to Division 31 Earthwork for granular fill below slabs.
3. Refer to Division 07 for below-slab waterproofing membranes were noted on the plans.

1.2 SUBMITTALS

A. Product Data: For each manufactured material and product indicated.

B. Design Mixes: For each concrete mix indicated.

C. Material certificates.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.

PART 2 - PRODUCTS

PART 3 - STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

B. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

C. Plain Steel Wire: ASTM A 82, as drawn.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening steel reinforcement. Manufacture bar supports according to CRSI's "Manual of Standard Practice.

3.2 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type I or II.

1. Fly Ash: ASTM C 618, Class F or C.

2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Aggregate: ASTM C 33, uniformly graded, from a single source.

C. Water: ASTM C 94.

D. Admixtures: Certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures, as follows:
   1. Air-Entraining Admixture: ASTM C 260.
   2. Water-Reducing Admixture: ASTM C 494, Type A.

E. Curing Materials:
   1. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.
   2. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
   3. Water: Potable.
   4. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
   5. Clear Solvent-Borne Liquid-Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
   6. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
   7. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B.

F. Related Materials:
   1. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

3.3 CONCRETE MIXES AND MIXING

A. Concrete Mixes: Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, with the following properties:
   1. Compressive Strength (28 Days): 3000 psi.
   2. Maximum Water-Cementitious Materials Ratio: 0.50.
   3. Slump Limit: 4 inches.
   4. Air Content: 4.5 to 7.5 percent.

B. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd. (0.60 kg/cu. m).

C. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.

D. Project-Site Mixing: Not acceptable.

PART 4 - EXECUTION

4.1 INSTALLATION

A. Surface Preparation: Proof-roll prepared subbase and remove loose material from surface.

B. Forms: Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations.

C. Reinforcement: Accurately position and support reinforcement, and secure against displacement. Set wire ties with ends directed into concrete.
   1. Install welded wire fabric in lengths as long as practicable; lap at least one full mesh, and lace splices with wire.

D. Joints: Locate and install construction, isolation, contraction, and expansion joints as indicated.

E. Concrete Placement: Comply with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete. Place concrete in a continuous operation within planned joints or sections.

1. Moisten subbase to provide a uniform dampened condition at time concrete is placed.
2. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping according to recommendations in ACI 309R.
3. Screed and initial-float concrete surfaces with darby or bull float before excess moisture or bleed water appears on the surface.
4. Protect concrete from cold or hot weather during mixing, placing, and curing.

F. Pavement Tolerances: Comply with tolerances in ACI 330.1, "Specification for Plain Concrete Parking Lots."

4.2 FINISHES AND CURING

A. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared, and the concrete surface has stiffened sufficiently to permit operations. Float surfaces to true planes with gaps below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/4 inch (6 mm). Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

B. Curing: Begin curing after finishing concrete, but not before free water has disappeared from concrete surface. Cure concrete by one or a combination of the following methods:

C. Moisture cure concrete by water, continuous fog spray, continuously wet absorptive cover, or by moisture-retaining-cover curing. Keep surfaces continuously moist for not less than seven days.

4.3 JOINTS

A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.

1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
2. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
3. Provide tie bars at sides of pavement strips where indicated.
4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
5. Use epoxy bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 40 feet maximum, unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.

3. Terminate joint filler less than 1/2 inch (12 mm) or more than 1 inch (25 mm) below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

E. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.

a. Radius: 3/8 inch (10 mm).

F. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

1. Radius: 3/8 inch (10 mm).

4.4 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this Section.

B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.

C. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 030320

SECTION 030516
UNDERSLAB VAPOR BARRIER - STEGO

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sheet vapor barrier under concrete slabs on grade.

1.02 RELATED REQUIREMENTS

A. Section 01749 Construction Waste Management and Disposal.

B. Section 018133 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2024.

B. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).

PART 2 PRODUCTS

2.01 MATERIALS

A. Underslab Vapor Barrier:
   1. Water Vapor Permeance: Not more than 0.010 perms, maximum.
   2. Thickness: 15 mils.
   3. Product:
      a. Stego Industries LLC; Stego Wrap Vapor Barrier (15-mil): www.stegoindustries.com/#sle.

B. Accessory Products: Vapor barrier manufacturer's recommended tape, adhesive, mastic, etc., for sealing seams and penetrations in vapor barrier.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surface over which vapor barrier is to be installed is complete and ready before proceeding with installation of vapor barrier.

3.02 INSTALLATION

A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.

B. Install vapor barrier under interior slabs on grade; lap sheet over footings and seal to foundation walls.

C. Lap joints minimum 6 inches.

D. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.

E. No penetration of vapor barrier is allowed except for reinforcing steel and permanent utilities.

F. Repair damaged vapor retarder before covering with other materials.

END OF SECTION

SECTION 031000 –

CONCRETE FORMING AND ACCESSORIES

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. This Section includes, but is not limited to, the design, engineering, construction and removal of formwork required for cast-in-place concrete as shown on the drawings and specified herein.

B. Related Sections include, but are not limited to, the following:

1. Section 033000 “Cast-In-Place Concrete” for finishes.
2. Section 034120 “Precast Prestressed Joists and Soffit Beam System” for field installed formwork.

C. Work Installed and Furnished by Others:
1. Install built-in anchors, inserts, and bolts for connection of other materials; sleeves, thimbles, and dovetail anchor slots, plates, frames, seats and all other embedded items including Owner furnished items.
2. Coating of forms and other surfaces as required by this Section.

1.3 DEFINITIONS

A. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

B. Form-Facing Material: The temporary form materials that come in direct contact with the concrete as part of the formwork components in supporting the concrete while the concrete is setting and gaining sufficient strength to be self-supporting. The most common materials are steel, aluminum, and wood.

1.4 ACTION SUBMITTALS

A. Product Data: Submit, for record only, not for approval, data for each type of product and material indicated including others as requested by Architect. Substitutions for specified items or manufacturers are to be submitted in accordance with Section 1 and will be subject to approval, rejection or other appropriate action.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating percentage of postconsumer and preconsumer recycled content and cost.
2. Product Certificates: For indigenous materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project, means of transportation, and cost for each indigenous material.

C. Formwork Shop Drawings: Prepare shop drawings in compliance with ACI SPEC-301 and ACI PRC-347. If requested by the Architect, submit shop drawings showing general construction of forms for concrete permanently exposed to view; including jointing, special form joints or reveals, location and pattern of form tie placement, and other items that visually affect exposed concrete. Architect's review is for general architectural applications and features only. Formwork design for safety, structural adequacy and efficiency is Contractor's responsibility.

D. Shoring and reshoring shop drawings, including for precast prestressed concrete framing: Submit signed and sealed shop drawings prepared by a Delegated Engineer experienced in such work and licensed in the State of **Florida**. The drawings shall conform to ACI SPEC-301 and ACI PRC-347 and contain, as a minimum, the location, size and type of all shoring, reshoring, mud sills, blocking, temporary lateral bracing and other accessories necessary to safely support and brace the structure during construction. The drawings shall also show the sequence of installation, load relief and removal. Use a safety factor of 2 for metal shores and 3 for wood shores. Submit drawings to the Architect, Engineer, Special Inspector and Building Official for record only. Shoring and reshoring design and construction is the sole responsibility of the Contractor and his Engineer.

1. Design structural members to support form facing materials without deflection. Design camber into formwork as required to compensate for anticipated deflections due to weight and pressures of fresh concrete and construction loads for longspan members without intermediate supports.
2. Prior to each concrete pour, the Delegated Engineer who prepares the shoring and reshoring drawings or his authorized representative shall inspect the shoring and reshoring. He shall provide a field report of each inspection to the Contractor and Special Inspector prior to leaving the site. Upon completion of the project, he shall submit a signed and sealed statement to the Architect and Special Inspector that this work was performed in accordance with his plans and specifications.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For the form-release agent, signed by manufacturer.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Delegated Engineer Qualifications: A licensed engineer who is legally qualified to practice in the State of Florida and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for formwork and shoring and reshoring installations that are similar to those indicated for this Project in material, design, and extent.

C. Codes and Standards: Comply with the following, unless more stringent provisions are indicated:

1. Florida Building Code, 8th Edition.
2. ACI SPEC-117, "Specifications for Tolerances for Concrete Construction and Materials."
3. ACI SPEC-301, "Specifications for Concrete Construction."
4. ACI CODE-318, "Building Code Requirements for Structural Concrete."
5. ACI PRC-347, "Guide to Formwork for Concrete."
6. ACI SP-4, "Formwork for Concrete."
7. American Forest and Paper Association, "National Design Specifications for Wood Construction."
8. American Plywood Association (APA), "Plywood Design Specification" (Form Y-510); "Concrete Forming: (Form V345)
9. National Institute of Standards and Technology (NIST), "Voluntary Product Standard PS 1-07 for Construction and Industrial Plywood" (Form V995).

1.7 JOB CONDITIONS AND COORDINATION OF TRADES

A. General: It is the Contractor's sole responsibility to coordinate with all trades for the setting of sleeves, anchor bolts, dovetail slots, inserts, frames, flashing, reglets, pipes, ducts and other embedded items and provide all openings required for installation of other work in accordance with the Contractor's shop drawings and the Contract Documents.

B. Structural Integrity: Provide no sleeves or openings in structural members unless shown on the structural drawings or approved by the Architect.

C. Inspection: Architect may inspect formwork at any time and may reject formwork if forms do not conform to the lines, levels, and tolerances as required in this Section, the shop drawings or the Design Drawings. If formwork is rejected, the Contractor must repair or replace the rejected portion with no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Stable Soil: In the event stable soil is encountered and straight-line embankments can be maintained, concrete foundations may be placed into accurately excavated earth trenches, free from water, debris, or loose dirt. Excavations shall be minimum 2" wider and longer than specified.

2.2 RELATED MATERIALS

A. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

B. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

D. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of the exposed concrete surface.
2. Furnish ties that, when removed, will leave holes not larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

E. Accessories: Provide necessary anchors, form ties, shores, construction joints, scaffolds, and bracing as required to install forms. Provide construction joints, control joints, expansion joints and waterstops where indicated on the drawings.

1. Form Joint Gasket: Closed cell rubber sponge. Take care that form joints are sealed from leakage of cement paste and moisture.
2. Material to form drips, reveals, rustification strips or weep holes shall be extruded plastic.

PART 3 - EXECUTION

3.1 INSTALLATION OF FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI SPEC-301 and ACI PRC-347, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI SPEC-117.

C. Limit concrete surface irregularities, designated by ACI PRC-347 as abrupt or gradual, as follows:

1. Surface Finish-1.0: ACI SPEC-117 Class D, 1 inch for permanently concealed rough-formed finished surfaces.
2. ACI SPEC-117 Class C, 1/2 inch: Other rough-formed finished surfaces.
3. Surface Finish-2.0: ACI SPEC-117 Class B, ¼ inch for rough-formed finished surfaces intended to receive plaster.
4. Surface Finish-3.0: ACI SPEC-117 Class A, 1/8 inch for smooth-formed finish surfaces exposed to public view.

D. Construct forms tight enough to prevent loss of concrete mortar.

1. Minimize joints.
2. Exposed Concrete: Symmetrically align joints in forms.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

F. Do not use rust-stained steel form-facing material.

G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

I. Chamfer exterior corners and edges of permanently exposed concrete.

J. At construction joints, overlap forms onto previously placed concrete not less than 12 inches.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

L. Construction and Movement Joints:

1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders as indicated on the drawings.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings.

a. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

M. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

N. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

O. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
2. Clean embedded items immediately prior to concrete placement.

3.3 EARTH FORMS

A. Hand trim sides and bottom of earth forms. Remove loose soil and rocks and compact to specified density prior to placing reinforcing or concrete. Moisten sides and bottom immediately prior to concrete placement. Comply with OSHA's "Trench Safety Act".

3.4 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Leave formwork, for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved the strength and age listed in the Structural Notes.

1. Determine compressive strength of in-place concrete by testing representative field or laboratory-cured test specimens according to ACI SPEC-301.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. The Architect's approval is required for reusing forms for exposed surfaces. Apply new form-release agent.

D. Reuse forms to greatest extent possible without damaging structural integrity of concrete and without damaging aesthetics of exposed concrete. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.5 SHORES AND RESHORES

A. Comply with ACI CODE-318, ACI SPEC-301, and recommendations in ACI PRC-347 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshores to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

Shores must be readily adjustable so that settlement during concrete placement may be taken up at once.

3.6 FIELD QUALITY CONTROL

A. Contractor and Construction Manager are responsible for quality of formwork installed, including alignment, surface conditions, etc.

END OF SECTION 031000

SECTION 032000 –

CONCRETE REINFORCING

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. This Section includes, but is not limited to, concrete reinforcement bars, welded-wire reinforcing and necessary accessories.

1.3 ACTION SUBMITTALS

A. Product Data: Submit, for record only, not for approval, data for each type of product and material indicated including others as requested by Architect. Indicate manufacturing process used for steel reinforcing. Substitutions for specified items or manufacturers are to be submitted in accordance with Division 1 and will be subject to approval, rejection or other appropriate action.

B. Sustainable Design Submittal:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

2. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project, means of transportation, and cost for each regional material.

3. Environmental Product Declaration (EPD): For each product.

4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

5. Manufacturer Inventory: Corporate sustainability report for each manufacturer.

C. Steel Reinforcement Shop Drawings: Complete details of fabrication, bending, and placement, prepared according to ACI PRC-315, "Guide to Presenting Reinforcing Steel Design Details” and ACI MNL-66 “ACI Detailing Manual”. Include bar sizes, length, material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports of concrete reinforcement.

1. Do not reproduce Structural Drawings for use as shop or placement drawings without prior approval of the Architect.

D. Construction Joint Layout: Indicate proposed construction joints required to build the structure.

1. Location of construction joints is subject to approval of the Architect.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1. Reinforcement To Be Welded: Welding procedure specification in accordance with AWS D1.4.

B. Material Certificates: Signed by manufacturers and the Contractor certifying that the steel reinforcement and reinforcement accessories comply with requirements of the Contract Documents. Unidentifiable steel is prohibited.

C. Material Test Reports: For the following, from a qualified testing agency:

1. Steel Reinforcement:

a. For reinforcement to be welded, mill test analysis for chemical composition and carbon equivalent of the steel in accordance with ASTM A706.

2. Mechanical splice couplers.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Comply with the following, unless more stringent provisions are indicated:

1. Florida Building Code, 8th Edition.
2. ACI SPEC-117, "Specifications for Tolerances for Concrete Construction and Materials."
3. ACI SPEC-301, "Specifications for Concrete Construction."
4. ACI PRC-315, “Guide to Presenting Reinforcing Steel Design Details.”
5. ACI CODE-318, “Building Code Requirements for Structural Concrete.”
6. “CRSI Manual of Standard Practice.”

B. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.4.

C. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage and to avoid damaging coatings on steel reinforcement.

1. Deliver reinforcement to the job site bundled, tagged and marked. Use durable metal or embossed plastic tags indicating bar size, lengths, and reference information corresponding to markings shown on placement drawings. Do not store reinforcement in contact with earth.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Recycled Content: Provide manufacturer documentation for recycled content, indicating postconsumer and preconsumer recycled content.

B. Reinforcing Bars: ASTM A615, Grade 60, deformed.

C. Low-Alloy-Steel Reinforcing Bars: ASTM A706, deformed.

D. Headed-Steel Reinforcing Bars: ASTM A970.

E. Plain-Steel Welded-Wire Reinforcement: ASTM A1064, plain, fabricated from as-drawn steel wire into flat sheets. Rolls are not acceptable.

2.2 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire, all plastic bar supports, or CRSI Class 2 stainless-steel bar supports.
2. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.
3. For welded wire fabric in slabs on grade use precast slab bolsters, concrete brick or sand plate chairs spaced no farther than 3’-0” c/c.

B. Mechanical Splices for Reinforcing Steel: Reinforcing bar splicing system designed to develop minimum 1.25 Fy of the reinforcing bars in both tension and compression, conforming to ACI CODE-318. Splicing system shall be listed by the International Code Council (ICC). Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the following:

1. Screw-lock bar coupling sleeve system.

    a. Dayton Superior Bar Lock Coupling System.
    b. Erico Lenton Lock Mechanical Rebar System.

C. Reinforcing Dowel Replacement: Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the following:

1. Dayton Superior Taper-Lock Form Saver.
2. Erico Lenton Form Saver.

D. Steel Tie Wire: ASTM A1064, annealed steel, not less than 00508 inch in diameter.

E. Zinc Repair Material: ASTM A780, zinc-based solder, paint containing zinc dust, or sprayed zinc.

2.3 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

B. Shop bend and fabricate reinforcing bars to conform with shapes and dimensions indicated on drawings. In case of errors, do not bend or straighten reinforcement without prior approval of Structural Engineer. Make all bends cold.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection of In-Place Conditions:

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.2 INSTALLATION OF STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover specified on the drawings. Do not tack weld crossing reinforcing bars.

C. Preserve clearance between bars of not less than 1”, not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.

D. Provide concrete coverage in accordance with ACI CODE-318.

E. Tie bars and bar supports together with 16-gauge wire and set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

F. Splices: Locate only where indicated on the drawings or approved shop drawings except with prior approval of Engineer

1. For standard splices, lap ends, placing bars in contact, and tightly wire tie. See drawings for lap lengths.
2. Stagger splices in accordance with ACI CODE-318.
3. Mechanical Splice Couplers: Install in accordance with manufacturer's instructions.
4. Do not weld splices unless indicated on drawings.

G. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging (3’-0” o.c. max.). Lap edges and ends of adjoining sheets at least two mesh spacings. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with 16-gauge wire.

H. Provide template for all column dowels.

I. Do not bend bars embedded in hardened or partially hardened concrete without approval from the Structural Engineer.

J. Do not weld reinforcing bars unless specifically shown. Where shown comply with AWS D1.4. Bars to be welded shall conform to ASTM A706.

3.3 JOINTS

A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement.
2. Continue reinforcement across construction joints unless otherwise indicated.
3. Do not continue reinforcement through sides of strip placements of floors and slabs.

3.4 INSTALLATION TOLERANCES

A. Comply with ACI SPEC-117.

END OF SECTION 032000

SECTION 033000 –

CAST-IN-PLACE CONCRETE

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. This Section includes, but is not necessarily limited to, concrete, concrete materials, mix design, placement procedures, curing and finishes.

B. Related Sections include, but are not necessarily limited to, the following:

1. Section 031000 “Concrete Forming and Accessories”.
2. Section 032000 “Concrete Reinforcing.”
3. Section 312000 "Earthmoving" for drainage fill under slabs-on-grade, including grade beams and pile caps.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash slag cement, other pozzolans, and silica fume.

B. Water/Cementitious Materials (w/cm): The ratio by weight or mass of water to cementitious materials.

1.4 ACTION SUBMITTALS

A. Product Data: Submit, for record only, not for approval, data for each type of product and material indicated including admixtures, patching compounds, waterstops, joint systems, curing compounds, and others as requested by Architect.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

2. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.

3. Laboratory Test Reports: For curing and sealing compounds, indicating compliance with requirements for low-emitting materials.

C. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments. Substantiating data to be no older than one year from date of submittal for each mix design.

1. Indicate amounts of mix water to be withheld for later addition at Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:

1. Installer:

a. ACI Flatwork Technician certifications.
b. Written evidence that flatwork placer/finisher has not less than (3) years continuous experience and a minimum of (5) projects in the successful placement and finishing of concrete slabs with flatness and levelness requirements equal to or higher than those specified for this project.
c. Written evidence of 10 projects that Installer has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Material Certificates: Signed by manufacturers and contractor certifying that each of the following items complies with requirements of the Contract Documents:

1. Cementitious materials and aggregates.
2. Admixtures.
3. Floor and slab treatments.
4. Waterstops.
5. Curing materials.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.
9. Repair materials.
10. Epoxy joint filler.
11. Joint filler strips.
12. Bearing pads.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in the successful manufacturing ready-mixed concrete products complying with ASTM C94 requirements for production and delivery, facilities and equipment.
1. Manufacturer must be F.D.O.T. certified.

C. Codes and Standards: Comply with the following, unless modified by requirements in the Contract Documents:

1. Florida Building Code, 8th Edition.
2. ACI SPEC-117, "Specifications for Tolerances for Concrete Construction and Materials."
3. ACI PRC-211.1 “Selecting Proportions for Normal-Density and High Density Concrete - Guide.”
4. ACI SPEC-301, "Specifications for Concrete Constrution.”
5. ACI SPEC-304, “Guide for Measuring, Mixing, Transporting, and Placing Concrete.”
6. ACI SPEC-305.1, “Specification for Hot Weather Concreting.”
7. ACI SPEC-306.1, “Standard Specification for Cold Weather Concreting.”
8. ACI SPEC-308.1, “Specification for Curing Concrete.”
9. ACI PRC-309, “Guide for Consolidation of Concrete.”
10. ACI PRC-311.4, “Guide for Concrete Inspection.”
11. ACI CODE-318, “Building Code Requirements for Structural Concrete.”

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94 and ACI SPEC-301.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI SPEC-301 unless modified by the requirements in the Contract Documents.

2.2 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.3 CONCRETE MATERIALS

A. Regional Materials: Verify concrete is manufactured within 500 miles of Project site from aggregates that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

B. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

C. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
1. Portland Cement:

a. ASTM C150, Type I/II
b. Slabs on Grade: Type I or Type II with a C3A content less than 8%.

2. Slag Cement: ASTM C989, Grade 100 or 120.

D. Pozzolans:

1. Fly Ash: ASTM C618, Class **C** or **F**.

E. Blended Hydraulic Cement: ASTM C595, Type IP, portland-pozzolan cement.

F. Blended Hydraulic Cement: ASTM C595, Type IL, Portland-limestone cement.

G. Normal-Weight Aggregate: Provide aggregates from a single source.

1. Fine Aggregate: Natural quartz sand or manufactured sand from local stone aggregates conforming to ASTM C33, produced from F.D.O.T. approved sources, with fineness modulus not less than 2.4, and having a proven service record.
2. Coarse Aggregate: Clean, washed, sound, crushed natural stone products produced from F.D.O.T. approved sources. Free from salt, clay, mud, loam or other foreign matter. Conform to ASTM C33; sizes No. 67 (3/4 inch) or No. 57 (1 inch), No. 8 or No. 89 (3/8 inch), and No. 467 (1 1/2 inch). Use largest size practical for members being cast.
a. Class: Negligible weathering region, class per ASTM C33. [1N]

H. Lightweight Aggregate: ASTM C330, expanded clay, shale or slate produced by the rotary kiln process.

1. Nominal Maximum Aggregate Size: 3/8 inch

I. Water: Potable and complying with ASTM C94.

2.4 CONCRETE ADMIXTURES

A. General: Provide admixtures produced by acceptable manufacturers and used in compliance with the manufacturer’s printed directions. Use only admixtures which have been incorporated

and tested in the accepted mixes, unless otherwise authorized in writing by the Architect. Do not use admixtures which increase the shrinkage properties of concrete, and are free of chlorides, fluorides, or nitrates, except for those attributable to the water used in manufacturing. Submit substantiating data, if requested.

B. Calcium Chloride: Do not use calcium chloride in concrete. Do not use any admixtures which contribute free chloride ions to the concrete mix.

C. Air-Entraining Admixture: ASTM C260.

D. Water-Reducing Admixture: ASTM C494, Type A.

E. Set-Retarding Admixture: ASTM C494, Type B.

F. Set-Accelerating Admixture: ASTM C494, Type C

G. Water-Reducing, Set-Retarding Admixture: ASTM C494, Type D.

H. Water-Reducing, Set-Accelerating Admixture: ASTM C494, Type E.

I. High-Range Water-Reducing Admixture: ASTM C494, Type F.

J. High-Range Water-Reducing, Set-Retarding Admixture: ASTM C494, Type G.

K. Shrinkage-Reducing Admixture: ASTM C494, Type S.

2.5 WATERSTOPS

A. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers for adhesive bonding to concrete.

1. Available Products:

a. Volclay Waterstop-RX; Colloid Environmental Technologies Co.

2.6 VAPOR RETARDERS

A. Sheet Vapor Retarder, Class A: ASTM E1745: Include manufacturer's recommended adhesive or pressure-sensitive tape.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Fortifiber Building Systems Group; Moistop Ultra 15.
b. ISI Building Products; Viper VaporCheck II 15-mil.
c. Raven Industries Inc.; VaporBlock VB15.
d. Reef Industries, Inc.; Griffolyn 15 Mil.
e. Stego Industries, LLC; Stego Wrap Vapor Barrier (15-Mil)
f. W.R. Meadows, Inc.; Perminator 15-mil.

2.7 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Master Builders Solutions; MasterKure ER 50.
b. Euclid Chemical Company (The); an RPM company; Eucobar.
c. Laticrete International, Inc.; L&M E-Con.
d. Nox-Crete Products Group; Monofilm.
e. SpecChem, LLC; Spec Film.

B. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, (or Type 2) Class B, dissipating. The film must chemically break down in a 4 to 6 week period after application.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Anti-Hydro International, Inc; A-H Curing Compound #2 DR WB.
b. ChemMasters, Inc; Safe-Cure Clear DR.
c. Euclid Chemical Company (The) an RPM company; Kurez DR VOX.
d. Lambert Corporation; AQUA KURE - CLEAR.
e. Laticrete International, Inc.; L&M CURE R.
f. TK Products; DC WB Dissipating Cure 2519.
g. W.R. Meadows, Inc; 1100-CLEAR.

C. Liquid Membrane-Forming Cure and Seal Compound: VOC Compliant, conforming to ASTM C309, Type 1, Class B and ASTM C1315, Type 1, Class A or B. The compound shall be a clear styrene acrylate type, 25% solids content minimum, and have test data from an independent testing laboratory indicating to a maximum moisture loss of .040 grams per square cm. When applied at a coverage rate of 200 sq. ft. per gallon.

1. Products: Subject to compliance with requirements, provide one of the following:

a. ChemMasters, Inc; Polyseal WB.
b. Euclid Chemical Company (The); an RPM company; Super Diamond Clear VOX.
c. Kaufman Products, Inc; Krystal 25 Emulsion.
d. Lambert Corporation; Crystal Clear Seal 1315 WB.
e. Laticrete International, Inc.; L&M Dress & Seal WB 25.
f. Metalcrete Industries; Metcure 30.
g. Nox-Crete Products Group; Cure & Seal 250E.
h. Right Pointe; Right Sheen WB30.
i. SpecChem, LLC; Cure & Seal WB 25.
j. TK Products; TK-Bright Kure & Seal 1315 VOC.
k. Vexcon Chemicals Inc.; StarSeal 1315.
l. W.R. Meadows, Inc; Vocomp-30.

2. Verify products comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Absorptive Cover: AASHTO M182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

E. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

F. Water: Potable or complying with ASTM C1602.

2.8 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber or ASTM D1752, cork or self-expanding cork.

B. Bonding Agent: ASTM C1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy-Bonding Adhesive: ASTM C881, two-component, 100% solid, epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements. Use Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.9 CEMENT GROUT AND DRYPACK

A. Prepackaged Non-Shrink Non-Metallic Non-Gaseous Grout: ASTM C1107, Grade B or C at a fluid consistency (flow cone) of 20 to 30 seconds. Grout shall be bleed free and attain 7500 psi compressive strength in 28 days at fluid consistency. Use for structural repairs.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. BASF Corporation; Masterflow 928.
    b. Euclid Chemical Company (The) an RPM company; NS Grout.
    c. Five Star Products, Inc.; Fluid Grout 100.
    d. Fosroc; Conbextra HF.
    e. Lambert Corporation; Vibropruf #11.
    f. Laticrete International, Inc; L&M Crystex.
    g. Sika Corporation; Sikagrout 212.

B. Cement Grout: Mix one part Portland cement, 2-1/2 parts fine aggregate, and enough water and liquid bonding agent in a 50/50 mix for required consistency depending on use. Consistency may range from mortar consistency to a mixture that will flow under its own weight. Use for leveling, preparing setting pads of beds, for filling non-structural voids, and similar uses. Do not use for grouting under bearing plates or structural members in place.

C. Drypack: Mix one part Portland cement, 2 parts fine aggregate, and enough water and liquid bonding agent in a 50/50 mix to hydrate cement and provide a mixture that can be molded with hands into a stable ball (a stiff mix). Do not mix more than can be used in 30 minutes. Use for patching tie holes and large surface defects in concrete.

2.10 SLAB REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.

2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C109.

B. Repair Topping: Traffic-bearing, cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations. For use on slabs not receiving finishes.

1. Cement Binder: ASTM C150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C109.

2.11 CONCRETE MIXTURES

A. Concrete for all parts of the concrete work shall be homogenous, and when hardened, possess the required strength, durability, water tightness, appearance, resistance to deterioration and abrasion, and other qualities as specified or required.

B. Mix proportioning: Proportion concrete according to ACI PRC-211.1. Trial mixes shall be designed by the testing laboratory approved by Architect or designed by the producer and witnessed and tested by the testing laboratory, in accordance with ACI SPEC-301 Section 4. Proportioning on the basis of field experience with complete statistical data, not more than one year old from date of submittal and spanning no less than 60 calendar days, to confirm mixes is acceptable.

C. Provide concrete which will develop ultimate compressive strength at 28 days equal to that noted on drawings and listed below.

A. Concrete Grades:

Mix No.	Strength	Air Optional/No	Aggregate Size	W/C or W/(C&P)*
1	3000	O	57	0.64
2	3000	N	57	0.64
3	3000	O	89	0.62
4	4000	O	57	0.54
5	4000	N	57	0.54
6	4000	O	89	0.52
7	4000	O	89 Lt. Wt.	0.48

* Water-Cementitious Ratio: Concrete mixes are required to comply with both the minimum strength and maximum water-cementitious ratios indicated above. Maximum W/C or W/(C&P) is required as an indication of overall concrete quality and may well produce strengths higher than the minimum required.

A. Concrete Use:

Element	Mix No.	Exposure Class*
1. Spread / Wall Footings	1, 2, 4, 5	S0
3. Slab on Grade	1	F0, S0
4. Columns and Poured Walls	6	F0
5. Elevated Slabs and Beams	6	F0
6. Pumped Elements, Tie Beams, Tie Columns	6	F0
7. Slabs on Steel Deck	7	F0

* Letter in Exposure Category denotes Exposure Class:
F:Freezing and thawing.
S: Sulfate.
W: Concrete in contact with water.
C: Corrosion protection of reinforcement.

B. Lightweight Concrete: Proportion mix in accordance with ACI PRC-211.2 and as specified. Design mix to produce strength and modulus of elasticity as noted on drawings, with a splitting tensile strength factor (Fct) of not less than 5.5 for 3000 psi concrete and a dry weight of not less than 109 lbs. or more than 115 lbs. after 28 days. Limit shrinkage to 0.03 percent at 28 days.

C. Design Slump:

1. General: 4 inches.
2. Concrete Containing High Range Water Reducer: 2 to 3 inches before addition of HRWR, 8 inches after.
3. Slump Tolerance: Plus/minus 1 inch.
4. Slump Of Corrosion Inhibited Concrete: 7 ±2, inch with the use of HRWR.

D. Chloride Ion Content for Corrosion Protection: Determine the chloride content of the component concrete materials, excluding admixtures, and provide this information to the Architect when submitting mix design. Design mixes will not be approved when the sum of chloride content of component materials indicates that the concrete mix derived from those materials will have a water soluble chloride ion content exceeding 0.1% for concrete exposed to the elements and 0.2% for concrete protected from the elements, when percent is determined by weight of cement. When the source of any component material for the concrete is changed or when the design mix is altered, a chloride content determination test shall be made immediately. Resubmit the altered design mix for approval by the Architect.

E. Cementitious Materials: Minimum Portland cement content of any concrete mix containing slag cement is 280 lbs., for all other concrete mixes, minimum portland cement content is 423 lbs. Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Provide concrete mixes having a fly ash content of 15% to 20%, by weight, of cementitious material.

F. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an entrained air content of 3 to 5 percent, except, 1 to 3 percent entrapped air for concrete to receive a hard trowel finish, (floor slabs), unless otherwise indicated.

O. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in all structural concrete.
2. Use water-reducing and retarding admixture when ambient temperature is 85 degrees F or higher and/or low humidity, or other adverse placement conditions exist.
3. Use high range water-reducing admixture in pumped concrete, walls 8” thick and less, at areas of reinforcing steel congestion, and as required for placement and workability, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.40.

P. Adjustment to Concrete Mixes: Mix design adjustments may be requested by contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.

2.12 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94, and furnish batch ticket information.

B. Mixing and Delivery Time: When air temperature is between 95 and 100 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 100 degrees F, reduce mixing and delivery time to 60 minutes.

1. Concrete Containing Corrosion Inhibitor: Reduce mixing and delivery time to one hour.

C. Provide batch ticket for each ready-mixed batch discharged and used in the Work, indicating Project identification name and number, date, mix type and number, batch time, mix time, quantity, and amount of water added and amount of water withheld at the plant. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 VERIFICATION OF CONDITIONS:

A. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor bolts, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges".
2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated.
4. Do not provide sleeves or openings in structural members unless shown on the structural drawings or approved by the Architect.

3.4 INSTALLATION OF VAPOR RETARDER

A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders in accordance with ASTM E1643 and manufacturer's written instructions. Use below interior floor slabs and as indicated on the Contract Documents.

1. Lap joints 6 inches and seal with manufacturer's recommended tape.
2. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
3. Protect vapor retarder during placement of reinforcement and concrete.

    a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

B. JOINTS

B. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

C. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Provide dowels as shown on drawings or as required by Architect. Do not continue reinforcement through sides of strip placements of slabs.
2. For members 5" thick or more, form keys from preformed galvanized steel, plastic keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete. Submit detail to Architect for review.

3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs. Allow 4 hours (minimum) between when column or wall is cast and when concrete supported by column or wall is cast.
5. Space vertical joints in walls at 40 feet o.c. U.O.N. on drawings. Place control joints at 40 feet o.c. between construction joints U.O.N. on drawings. If locations are not shown, locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces. In beams and girders use epoxy-bonding adhesive at locations when fresh concrete is placed against hardened or partially hardened concrete surfaces.

D. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated on drawings. If requested, the contractor shall prepare and submit to the Architect a joint layout. Construct contraction joints as follows:

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades using the “Soff-Cut” early entry dry-cut saws. Cut 1/8 inch wide and 1/4 to 1/3 of slab depth deep joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks. This is usually within 2 hours of final finish at each control joint but not more than 8 hours after completion of concrete pour.
2. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

E. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
2. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

F. Coordinate construction and control joints with requirements of finish material joints.

3.5 WATERSTOPS

A. Self-Expanding Strip Waterstops: Install in construction joints at locations indicated, according to manufacturer's written instructions, adhesive bonding or mechanically fastening and firmly pressing into place. Install in longest lengths practicable.

3.6 CONCRETE PLACEMENT

A. Complete the following before placing concrete:

1. Excavate and compact subgrade, arrange for compaction testing, spray termite treatment on grade, place vapor barrier and remove excess water.

2. Secure all formwork. Verify that shoring and reshoring has been inspected and accepted by Delegated Engineer. Moisten wood forms except where form coatings are used.
3. Accurately locate all steel reinforcement, conduits, outlet boxes, anchors, hangers, sleeves, bolts, expansion joint materials and other embedded items and secure against shifting during concrete placement or consolidation.
4. Accurately locate bearing pads on true, level, and uniform surfaces and secure against shifting during concrete placement.
5. Cooperate with other trades and verify that their work is installed.
6. Repair any damage to vapor retarder.
7. Notify testing agency to test concrete.
8. Ensure that all required inspections are performed.

B. Comply with ACI SPEC-301, ACI PRC-304, ACI PRC-308 and ACI CODE-318.

C. Jobsite Tempering: Place concrete within 1-1/2 hours after introduction of water to mix. Submit time stamped batching tickets upon delivery of concrete to job site.

1. Do not add water to ready-mix concrete except as provided in ASTM C94, Paragraph 12.7. When so allowed, limit addition of water to amount withheld at plant as indicated on batch ticket. Water shall be added prior to initial discharge of concrete. No water may be added once concrete placement has started. Addition of water may only be authorized by Architect, the concrete producer's quality control representative, a preapproved representative of Contractor, or the Special Inspector.
2. Concrete produced with high range water reducer may only be tempered with additional high range water reducer.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

1. Maximum height of concrete free fall is 4 feet. Columns up to **8** [**10**] feet in height may be poured in one lift. Concrete in columns and walls over **8** [**10**] feet may be poured full height with the use of drop chutes or tremies or up to a maximum of 16 feet if HRWR admix concrete is used.

E. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI PRC-309.
2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.
3. Concrete in columns and walls shall be cast at least twenty-four hours before horizontal members they support are cast. Exception: Concrete in tie columns and grout in masonry cells shall be cast at least four hours before beams or slabs are cast on top of masonry.

F. Deposit and consolidate concrete for slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using highway bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

G. Pumping: Slumps in excess of six (6) inches at the pump will not be permitted except for concrete produced with HRWR. If placing by means of pump, a specifically designed concrete mix shall be submitted to the Architect for review. No pump lines smaller than 4 inches will be permitted. Exception: A 3” pump line may be used for 8” wide beams and columns cast on top of or between masonry walls or for filling masonry cells.

H. Cold-Weather Placement: Comply with ACI SPEC-306.1 and as follows: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures. Cold weather is defined as a period when, for more than three (3) consecutive days, the average daily air temperature is less than 40 degrees F and the air temperature is not greater than 50 degrees F for more than 1/2 of any 24-hour period. The average daily air temperature is the average of the highest and lowest temperatures occurring during the period from Midnight to Midnight.

1. When air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F at point of placement.
2. Provide protected and heated environments for onsite storage of test cylinders.
3. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
4. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators.
5. Temporary heat devices shall be operated with special care to protect against concentrations of heat, or direct contact with combustion gases. All surfaces within the enclosure shall be kept wet for curing.

I. Hot-Weather Placement: Place concrete according to recommendations in ACI SPEC-305.1 and as follows, except concrete temperature shall not exceed 100 degrees F:

1. Cool ingredients before mixing to maintain concrete temperature below 100 degrees F at time of placement.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.
4. Use Type D water reducing admixtures when ambient temperature exceeds 85 degrees F or other adverse placing conditions exist.

J. Do not place concrete in exposed conditions when it is raining unless adequate protection is provided.

3.7 FINISHING FORMED SURFACES

A. Rough-Formed Finish ACI SPEC-301 Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding 1/4" rubbed down or chipped off. Use for concrete surfaces not exposed to view in the finished work.

B. Smooth-Formed Finish ACI SPEC-301 Surface Finish SF-3.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch in height.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or staining.
2. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished concrete:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Wall Surfaces Exposed to Public: Provide elastomeric form liner or steel forms for cast-in-place concrete wall surfaces exposed to the general public.

E. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI PRC-302.1 for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Slope surfaces to drains.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.

1. Apply scratch finish to surfaces indicated and to surfaces to receive concrete floor topping or mortar setting beds for ceramic or quarry tile, portland cement terrazzo, and other bonded cementitious floor finishes.

C. Float Finish: Begin floating when bleed water has disappeared and when concrete has stiffened sufficiently to permit operation of power driven floats. Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI SPEC-117 tolerances for conventional concrete.

1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. When concrete is still plastic, slightly scarify surface with a fine broom.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

G. Floor Flatness and Levelness: Finish surfaces to the following tolerances according to ASTM E1155 for a randomly trafficked floor surface and measured within 72 hours and before supporting formwork or shoring is removed:

1. Scratch finish or Non-Critical Floors, such as Mechanical Rooms, Non-Public Unfinished Areas, Parking Slabs: Specified overall values of flatness, F_F 20; and levelness, F_L 15; with minimum local values of flatness, F_F 15; and levelness, F_L 10.
2. Float Finish: Specified overall values of flatness, F_F 25; and levelness, F_L20; with minimum local values of flatness, F_F 17; and levelness, F_L 15.
3. Carpeted Slabs: Specified overall values of flatness, F_F 25; and levelness, F_L 20; with minimum local values of flatness, F_F 17; and levelness, F_L 15.
4. Thin or No Floor Covering: Specified overall values of flatness F_F 35; and levelness, F(L) 25; with minimum local values of flatness, F_F 24; and levelness, F_L 17; for suspended slabs.
5. Specified overall values of flatness, F_F 45; and levelness, F_L 35; with minimum local values of flatness, F_F 30; and levelness, F_L 24.
6. Specified Overall Value (SOV): F_F 50; and, F_L 25 with minimum local value (MLV): F_F 40 and F_L 17.

H. Floor Flatness and Levelness Acceptance: The Architect may authorize the testing agency to verify that the specified F_F and F_L numbers have been achieved for any slab pours except for

unshored or sloped construction. F_F and F_L Minimum Local Area is defined as any bay delineated by columns. Slabs that do not meet the specified F_F or F_L numbers shall be removed and replaced. Alternatively, the Contractor may propose repairs to the slab or a credit to the Project.

3.9 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

E. Base Plates and Foundations: Use specified non-shrink, non-metallic grout. Where applicable, grout at least 3 days prior to casting concrete on supported structure.

3.10 CONCRETE PROTECTION AND CURING

A. General: Comply with ACI SPEC-308.1 and ACI SPEC-301. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI SPEC-306.1 for cold-weather protection and with recommendations in ACI SPEC-305.1 for hot-weather protection during curing.

B. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including slabs, concrete floor toppings, and other surfaces.

D. Cure concrete according to ACI SPEC-308.1, by one or a combination of the following methods:

1. Curing Compound: Apply to all concrete surfaces that are not permanently exposed. Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Provide a second coat applied at 90 degrees to initial application within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
2. Curing and Sealing Compound: Apply to permanently exposed concrete surfaces. Apply uniformly in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after

initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

4. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

   a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
   b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project

3.11 TOLERANCES

A. Conform to ACI SPEC-117.

3.12 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. If reinforcing steel is exposed, remove concrete to provide a minimum of 3/4” clearance all around. Prior to patching allow the Architect and Threshold Inspector adequate time to review prepared areas. Clean, dampen with water, and brush-coat prepared surfaces with bonding agent or slurry coat. Fill and compact with dry pack grout or non-shrink non-metallic grout before bonding agent has dried. Fill form-tie voids with cement grout, dry pack grout or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

C. Repairing Unformed Surfaces: Test unformed surfaces, such as slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean square cuts and expose steel reinforcement with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with dry pack grout or non-shrink non-metallic grout. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

D. Perform structural repairs of concrete, not covered herein, only with Architect's and Structural Engineer’s approval, using repair procedures they recommend.

E. Other repair materials and installation not specified above may be used, subject to Architect's approval.

3.13 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.

B. Testing Services: Sample concrete after all water and admixtures have been added. Testing of composite samples of fresh concrete obtained according to ASTM C172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 50 cu. yd. or fraction thereof of each concrete mix placed each day.

2. Slump: ASTM C143; one test at point of placement for each composite sample. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231, pressure method, for normal-weight concrete; ASTM C173, volumetric method, for structural lightweight concrete; one test for each composite sample.
4. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 degrees F and below and when 85 degrees F and above, and one test for each composite sample.
5. Density (Unit Weight): ASTM C138, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
6. Compressive Strength Test Specimens: ASTM C31
    a. Cast and laboratory cure one set of four standard cylinder specimens for each composite sample. For pumped concrete, take sample at point of placement.
7. Compressive-Strength Tests of Laboratory Cured Specimens: ASTM C39; test one specimen at 7 days for information and three at 28 days for acceptance. If one of the first two 28-day tests falls below specified strength, test the remaining specimen at 56 days.

C. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests (3 sets of 2 cylinders each) equals or exceeds specified compressive strength and no compressive-strength test (1 set of 2 cylinders) value falls below specified compressive strength by 10% (when f'c > 5000 psi) or 500 psi (when f'c < 5000 psi), whichever is less.

D. Strength tests that are not satisfactory indicate questionable concrete. The testing agency and Contractor shall submit to the Architect a report of the questionable concrete plus the two test reports immediately prior to and after (5 reports total) for evaluation.
1. If the questionable concrete is not accepted by the Architect, the testing agency shall take core tests per ACI SPEC-301 and ASTM C42 minimum diameter of cores is 4 inches. Concrete will be considered structurally adequate if average of 3 cores is at least 85% f'c and no single core is less than 75% f'c.
2. Concrete not considered adequate by core testing shall be removed and replaced or load tested per ACI CODE-318.

E. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for each test.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42 or by other methods as directed by Architect.

G. The contractor may be required to pay all costs of additional testing or evaluation of questionable concrete and provide a credit to the Owner for acceptance of questionable concrete.

H. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Contract Documents.

3.14 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

B. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION 033000

SECTION 034500
PRECAST ARCHITECTURAL CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural precast concrete stair treads.

B. Supports, anchors, and attachments.

C. Grouting under panels.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

C. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2007b (Reapproved 2014).

D. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.

E. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

F. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.

G. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.

H. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.

I. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2014.

J. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.

K. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2010.

L. ASTM C989/C989M - Standard Specification for Slag Cement for Use in Concrete and Mortars; 2014.

M. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2014.

N. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars; 2001 (Reapproved 2007).

O. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

P. AWS D1.4/D1.4M - Structural Welding Code - Reinforcing Steel; 2011.

Q. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products; 2013.

R. PCI MNL-120 - PCI Design Handbook - Precast and Prestressed Concrete; 2010, Seventh Edition.

S. PCI MNL-122 - Architectural Precast Concrete; 2007.

T. PCI MNL-123 - Design and Typical Details of Connections for Precast and Prestressed Concrete; 1988, Second Edition.

U. PCI MNL-135 - Tolerance Manual for Precast and Prestressed Concrete Construction; 2000.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work of this section.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's information on accessory products, including pigments, admixtures, inserts, plates, etc.

C. Shop Drawings: Indicate layout, unit locations, configuration,unit identification marks,reinforcement, connection details, support items,location of lifting devices, dimensions, openings, and relationship to adjacent materials. Provide erection drawings.
   1. Include details of mix designs.

D. Samples: Submit two samples, __12__x__12__ inch in size, illustrating surface finish, color and texture.

E. Fabricator's Qualification Statement: Provide documentation showing precast concrete fabricator is accredited under IAS AC157.

F. Sustainable Design Reporting: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete, mix design(s) used showing the quantity of Portland cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.

1.06 QUALITY ASSURANCE

A. Fabricator Qualifications:
   1. Firm having at least 5 years ofdocumented experience in production of precast concrete of the type required.
   2. Plant certified under Precast/Prestressed Concrete Institute Plant Certification Program; product group and category A1 - Architectural Precast Concrete.

B. Welder Qualifications: Qualified within previous 12 months in accordance with AWS D1.1/D1.1M and AWS D1.4/D1.4M.

C. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.07 MOCK-UP

A. Provide mock-up of each item to be installed.

B. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Handling: Lift and support precast units only from support points.

B. Protect units to prevent staining, chipping, or spalling of concrete.

PART 2 PRODUCTS

2.01 PRECAST UNITS, GENERAL

A. Precast Architectural Concrete Units: Comply with PCI MNL-120, PCI MNL-122, PCI MNL-123, PCI MNL-135, and ACI 318.
   1. Design Loads: Static loads, anticipated dynamic loading, including positive and negative wind loads, thermal movement loads, and erection forces as defined by applicable code.
   2. Calculate structural properties of units in accordance with ACI 318.
   3. Accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
   4. Provide connections that accommodate building movement and thermal movement and adjust to misalignment of structure without unit distortion or damage.

2.02 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi).

1. Epoxy coated in accordance with ASTM A775/A775M.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.

B. Other Cementitious Materials:
   1. Fly Ash or Natural Pozzolans: Comply with ASTM C618.
   2. Ground Granulated Blast Furnace Slag: ASTM C989/C989M.
   3. Silica Fume: Comply with ASTM C1240.

C. Fine and Coarse Structural Aggregates: ASTM C33/C33M.

D. Lightweight Structural Aggregate: ASTM C330/C330M.

E. Color Additives: Pure, concentrated mineral pigments specifically intended for mixing into concrete and complying with ASTM C979/C979M.
   1. Color(s): As selected by Architect from manufacturer's full range.

F. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

G. Air Entrainment Admixture: ASTM C260/C260M.

H. Grout:
   1. Non-shrink, non-metallic, minimum 10,000 psi, 28 day strength.

2.04 ACCESSORIES

A. Precast Concrete Treads, Risers and Coping.
   1. Products:
      a. Tectura Designs, a division of Wausau Tile Inc; Precast Concrete Treads and Risers: www.tecturadesigns.com/#sle.

2.05 FABRICATION

A. Fabricate in compliance with PCI MNL-117 and PCI MNL-135.

B. Fabricate and handle epoxy-coated reinforcing bars in accordance with ASTM D3963/D3963M.

C. Use rigid molds, constructed to maintain precast unit uniform in shape, size, and finish.

D. Maintain consistent quality during manufacture.

2.06 FABRICATION TOLERANCES

A. Comply with PCI MNL-117 and PCI MNL-135, except as specifically amended below.
   1. Maximum Variation From Nominal Face Dimensions: Plus or minus 3/32 in.
   2. Maximum Variation From Square or Designated Skew: Plus or minus 1/8 inch in 10 feet.
   3. Maximum Variation from Thickness: Plus or minus 1/8 in.
   4. Maximum Bowing of Members: Plus or minus length/360.

2.07 SOURCE QUALITY CONTROL

A. Provide testing and analysis of concrete mix.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building structure, anchors, devices, and openings are ready to receive work of this section.

3.02 PREPARATION

A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.

3.03 ERECTION

A. Erect units without damage to shape or finish. Replace or repair damaged panels.

B. Erect units level and plumb within allowable tolerances.

C. Align and maintain uniform horizontal and vertical joints as erection progresses.

3.04 TOLERANCES

A. Erect members level and plumb within allowable tolerances. Comply with PCI MNL-135, except as specifically amended below.
   1. Plan Location from Building Grid Datum: Plus or minus 3/8 in.
   2. Top Elevation from Nominal Top Elevation: Plus or minus 3/8 inch.
   3. Exposed Joint Dimension: Plus or minus 3/16 inch.
   4. Maximum Jog in Alignment of Matching Faces or Edges: Plus or minus 3/16 inch.
   5. Differential Bowing or Camber as Erected Between Similar Adjacent Members: Plus or minus 3/16 inch.

END OF SECTION

SECTION 040100
MAINTENANCE OF MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Replacement of units required for repair.

B. Retrofitting masonry veneer accessories.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 024100 - Selective Demolition.

D. Section 040511 - Masonry Mortaring and Grouting.

E. Section 042000 - Unit Masonry.

1.03 PRICE AND PAYMENT PROCEDURES

A. See Section 012200 - Unit Prices for additional unit price requirements.

B. Brick Replacement: By the square foot.

C. Repointing: By the square foot.

PART 2 PRODUCTS

2.01 MASONRY ACCESSORIES

A. Retrofit Weeps:
   1. Cylindrical polypropylene, 3/8 inch diameter by depth of brick, anchored in drilled hole in mortar joint with manufacturer's recommended two-part epoxy bonding agent.
   2. Installation tool and temporary weep rods.
   3. Product: MTI Retrofit Weep.

B. Veneer Cavity Drainage Plane:

2.02 MASONRY MATERIALS

A. Mortar and Grout: Section 040511.

B. Brick: Section 04 26 13.

PART 3 EXECUTION

3.01 EXAMINATION

A. Ensure that existing construction and new work are ready to receive work of this section.

3.02 PREPARATION

A. Protect elements from damage due to restoration procedures.

B. Remove and store removable items located in areas to be restored, including fixtures, fittings, finish hardware, and accessories; reinstall upon completion.

C. Separate existing areas from restoration areas to prevent damage.

D. Close off adjacent occupied areas with dustproof and weatherproof partitions.

E. Protect roof membrane and flashings from damage with 1/2-inch plywood laid on roof surfaces over full extent of work area and traffic route.

3.03 INSTALLATION

A. Install in accordance with manufacturer's written instructions.

B. Retrofit Weeps:
   1. Ensure masonry cavity is clean of dust and debris.

2. Drill 3/8 inch diameter holes in mortar joints at not more than 16 inches on center at weep elevation.
3. Remove dust and debris.
4. Apply bonding agent to exterior of weep and insert weep into prepared hole using weep installation tool. Position exterior of weep slightly inset from exterior surface of veneer.
5. Ensure weep device extends into masonry cavity.
6. Insert retrofit weep rods into weep devices 2 inches nominal.
7. Remove retrofit weep rods after materials have set up.

C. Veneer Cavity Drainage Plane:
1. Install veneer cavity drainage on interior-facing masonry surface and bottom of masonry cavity. Install corrugations toward masonry, facer toward interior of building.
2. Field fabricate sheets as necessary.

3.04 REBUILDING

A. Cut out damaged and deteriorated masonry. Do not damage adjacent remaining materials.

B. Support structure as necessary in advance of cutting out units.

C. Where loose or unsound adjoining masonry is encountered, notify Architect, obtain Architect's approval, and remove or remediate as directed by Architect.

D. Build in new masonry units as specified in other sections.

E. Ensure that anchors are located and installed as indicated in contract documents and manufacturer's instructions.

F. Install tuckpoint retrofit weeps in mortar bed joints in accordance with manufacturer's instructions.

G. Install built-in masonry to match and align with existing work, with joints and coursing true and level and faces plumb and true to line. Build in openings, accessories, and fittings.

3.05 CLEANING

A. Immediately remove stains, efflorescence, or other excess resulting from work of this section.

B. Remove excess mortar, smears, and droppings as work proceeds and upon completion.

C. Clean surrounding surfaces.

END OF SECTION

SECTION 040511
MASONRY MORTARING AND GROUTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mortar for masonry.

B. Grout for masonry.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 040100 - Maintenance of Masonry: Bedding and pointing mortar for masonry restoration work.

D. Section 042723 - Cavity Wall Unit Masonry: Installation of mortar and grout.

1.03 REFERENCE STANDARDS

A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

B. ASTM C91/C91M - Standard Specification for Masonry Cement; 2012.

C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2018.

D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2011.

E. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.

F. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).

G. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019.

H. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.

I. ASTM C476 - Standard Specification for Grout for Masonry; 2010.

J. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2012.

K. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2010.

L. ASTM C1019 - Standard Test Method for Sampling and Testing Grout; 2013.

M. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar; 1992a (Reapproved 2008).

N. ASTM E518/E518M - Standard Test Methods for Flexural Bond Strength of Masonry; 2010.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.

C. Reports: Submit reports on mortar indicating compliance of mortar to property requirements of ASTM C270 and test and evaluation reports per ASTM C780.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of the contract documents.

1.06 PRECONSTRUCTION TESTING

A. Testing will be conducted by an independent test agency, in accordance with provisions of Section 014000 - Quality Requirements.

B. Mortar Mixes: Test mortars prebatched by weight in accordance with ASTM C780 recommendations for preconstruction testing.
   1. Test results will be used to establish optimum mortar proportions and establish quality control values for construction testing.

C. Grout Mixes: Test grout batches in accordance with ASTM C1019 procedures.
   1. Test results will be used to establish optimum grout proportions and establish quality control values for construction testing.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.08 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

A. Use only factory premixed packaged dry materials for mortar and grout, with addition of water only at project site.
   1. Exception: If a specified mix design is not available in a premixed dry package, provide equivalent mix design using standard non-premixed materials.

B. Mortar Mix Designs: ASTM C270, Property Specification.
   1. Masonry below grade and in contact with earth: Type S.
   2. Exterior Masonry Veneer: Type N.
   3. Exterior, Non-loadbearing Masonry: Type N.
   4. Exterior Repointing Mortar: Type O with maximum 2 percent ammonium stearate or calcium stearate per cement weight.

C. Grout Mix Designs:
   1. Bond Beams and Lintels: 3,000 psi strength at 28 days; 8-10 inches slump; provide premixed type in accordance with ASTM C 94/C 94M.
      a. Fine grout for spaces with smallest horizontal dimension of 2 inches or less.
   2. Engineered Masonry: 3,000 psi strength at 28 days; 8-10 inches slump; provide premixed type in accordance with ASTM C 94/C 94M.
      a. Fine grout for spaces with smallest horizontal dimension of 2 inches or less.

2.02 MATERIALS

A. Packaged Dry Material for Mortar for Unit Masonry: Premixed masonry cement and mason's sand; complying with ASTM C387/C387M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Type: Type N.
   2. Color: as selected by Architect to match existing masonry..
   3. Manufacturers:
      a. Amerimix, an Oldcastle brand; AMX 500: www.amerimix.com/#sle.

B. Packaged Dry Material for Mortar for Repointing: Premixed Portland cement, hydrated lime, and graded sand; capable of producing Type O mortar in accordance with ASTM C270 with the addition of water only.
   1. Color: Mineral pigments added as required to produce approved color sample.
   2. Manufacturers:
      a. Amerimix, an Oldcastle brand; AMX 420: www.amerimix.com/#sle.

C. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
   1. Type: Fine.
   2. Manufacturers:
      a. Amerimix, an Oldcastle brand; AMX 600: www.amerimix.com/#sle.

D. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
   1. Color(s): As selected by Architect from manufacturer's full range.
   2. Manufacturers:
      a. Solomon Colors; Solomon Colors Concentrated A, H, and X Series: www.solomoncolors.com/#sle.

E. Water: Clean and potable.

2.03 MORTAR MIXING

A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.

B. Maintain sand uniformly damp immediately before the mixing process.

C. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio; mix in accordance with manufacturer's instructions, uniform in coloration.

D. Do not use anti-freeze compounds to lower the freezing point of mortar.

E. If water is lost by evaporation, re-temper only within two hours of mixing.

2.04 GROUT MIXING

A. Mix grout in accordance with ASTM C94/C94M.

B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

2.05 PRECONSTRUCTION TESTING

A. Testing will be conducted by an independent test agency, in accordance with provisions of Section 014000 - Quality Requirements.

B. Mortar Mixes: Test mortars prebatched by weight in accordance with ASTM C780 recommendations for preconstruction testing.
   1. Test results will be used to establish optimum mortar proportions and establish quality control values for construction testing.

C. Grout Mixes: Test grout batches in accordance with ASTM C1019 procedures.
   1. Test results will be used to establish optimum grout proportions and establish quality control values for construction testing.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install mortar and grout to requirements of section(s) in which masonry is specified.

B. Work grout into masonry cores and cavities to eliminate voids.

C. Do not install grout in lifts greater than 16 inches without consolidating grout by rodding.

D. Do not displace reinforcement while placing grout.

E. Remove excess mortar from grout spaces.

3.02 GROUTING

A. Perform all grouting by means of low-lift technique. Do not employ high-lift grouting.

B. Low-Lift Grouting:

1. Limit height of pours to 12 inches.
2. Limit height of masonry to 16 inches above each pour.
3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.

3.03 FIELD QUALITY CONTROL

A. An independent testing agency will perform field tests, in accordance with provisions of Section 014000 - Quality Requirements.

B. Test and evaluate mortar in accordance with ASTM C780 procedures.

C. Test and evaluate grout in accordance with ASTM C1019 procedures.

SECTION 042613
MASONRY VENEER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clay Facing Brick.

B. Flashings.

C. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

B. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing; 2017.

C. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, and mortar.

C. Samples: Submit four samples of facing brick units to illustrate color, texture, and extremes of color range.

1.05 FIELD CONDITIONS

PART 2 PRODUCTS

2.01 UNIT MASONRY - GENERAL

2.02 BRICK UNITS

A. Manufacturers:
   1. Palmetto Brick- Flash Smooth, Wallace, S.C.

2.03 MORTAR AND GROUT MATERIALS

A. Mortar and Grout: Matching existing.

2.04 REINFORCEMENT AND ANCHORAGE

A. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
   1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
   2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
   3. Vertical adjustment: Not less than 3-1/2 inches.

2.05 FLASHINGS

A. Metal Flashing Materials: Copper, as specified in Section 076200.

2.06 ACCESSORIES

A. Weeps: Polyester mesh.
   1. Type: Extruded propylene with honeycomb design.
   2. Color(s): As indicated on drawings.
   3. Color(s): As selected by Architect from manufacturer's full range.

B. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Brick Units:
   1. Bond: As indicated for different locations.

3.03 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.04 WEEPS/CAVITY VENTS

A. Install weeps in veneer walls at 24 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

3.05 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.

C. Install cavity mortar control panels at locations of thru-wall flashing, complying with manufacturer's installation instructions.

3.06 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 36 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.07 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:

C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.

3.08 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

3.09 CLEANING

A. Remove excess mortar and mortar smears as work progresses.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.10 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

SECTION 042110.20
PREPARING LIME MORTAR FOR REPOINTING MASONRY

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.02 SUMMARY

A. This procedure includes guidance on removing and replacing deteriorated brick masonry. It should be used in conjunction with the procedure on repointing historic masonry. For guidance on repointing, see 0452002 "Repointing Masonry Using Lime Mortar".

1.03 PROJECT / SITE CONDITIONS

A. Environmental Requirements:
   1. Do not proceed with brick replacement under adverse weather conditions, or when temperatures are below or above manufacturer's recommended limitations for installation; Proceed with the work only when forecasted weather conditions are favorable for proper cure.
   2. Wet Weather: Do not apply or mix mortar on outside surfaces with standing water or outside during rain.
   3. Cold Weather, winter construction is not allowed without consent of SHPO; Winter construction when surface temperature of masonry is below 40o F. or air temperature is predicted to be below 40o F within 48 hours. See #6 below.
   4. Hot Weather: The surface temperature of the work, not the ambient temperature, should not be higher than 100o F.; Mortar mixing should be done only in the shade; Cover mortar with water-misted burlap in hot weather to reduce evaporation; Pointing work should be done in the shade; Work around the building during the day so that the fresh work will be shielded from direct sunlight to reduce evaporation rate. High temperatures can cause flash setting of cements and rapid evaporation of water in the mix, leading to lack of development of final strength by the cement.
   5. All materials must be kept above 40o F.
   6. Special Precautions and Notes: Do not allow masonry to freeze until mortar is thoroughly dry and hardening almost complete (approx. three days time); The setting of lime mortar is very much slower than that of cement mortar because the curing requires the absorption of carbon dioxide to form hard lime carbonates; It is a very lengthy process, so do not expect it to become hard immediately, especially at the core of large masses of masonry.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Salvaged Brick: Approved by SHPO, sound, crack free, clean brick without face chips larger than 1/2 inch, salvaged from removal of removed face brick work of same type.

B. Replacement Brick: Approved by SHPO.

C. Brick slips: Approved by SHPO.

D. Mortar to match existing (see 041000.3 "Preparing Lime Mortar for Repointing Masonry").

2.02 EQUIPMENT

A. Trowel

B. Joint tools

C. Chisel

D. Hawk

E. Hammer

F. Stiff bristle brushes

PART 3 - EXECUTION

3.01 EXAMINATION

A. Deterioration of brick due to moisture is evident as spalling, erosion, cracking, peeling paint, and deteriorated mortar joints.

B. Some causes of brick deterioration include:
   1. Rising damp
   2. The accumulation of dissolved acids carried by rainwater and condensation
   3. Soluble salts crystallizing in the pores of the brick face
   4. Alternate freezing and thawing
   5. The accumulation of dirt and air-borne particles on the exterior surface

3.02 PREPARATION

A. Surface Preparation:
   1. Wet brick having absorption rates greater than 0.025 oz. per sq. inch per minute.
      a. On the flat side of a brick, deposit water on an area approximately the size of a 25-cent coin.
      b. If the water disappears in less than 30 seconds, wet the bricks.
   2. Absorptive brick should be thoroughly soaked in the pile each afternoon prior to the day they are to be used.
   3. Cover the bricks with tarps or heavy paper to prevent evaporation.
   4. Wet brick as necessary during the day; Sprinkle the brick pile with a hose for a period long enough for water to run down the side of the pile; Use wetting methods which ensure that each masonry unit is nearly saturated but surface dry when laid; (DO NOT wet stone masonry units).
   5. Repair flashing if necessary.
   6. Where fresh masonry joins existing work, clean the exposed surface of the set masonry by removing loose brick and mortar and wet lightly to obtain the best possible bond with the new work.

3.03 ERECTION, INSTALLATION, APPLICATION

A. Replacing Deteriorated Masonry with Brick slips: The use of brick slips should be limited to replacement of individual bricks or to small areas of brickwork.

   NOTE: Brick slips are brick facings about 1 inch thick. They are used when damage to adjacent sound brickwork is likely to occur if full-size replacement is attempted.
   1. Cut out the deteriorated masonry to a regular shape.
   2. Clean the cavity of loose mortar and other debris by hand using a chisel and stiff bristle brushes.
   3. Solidly set the slip in a bed of mortar.

B. Replacing Deteriorated Units with Full-Size Bricks:
   1. Carefully remove deteriorated brick units by hand using a hammer and chisel.
   2. Rebuild back-up and substrate as required to replace any unsound material that was removed.
   3. Clean the cavity of loose mortar and other debris by hand using a chisel and stiff bristle brushes.
   4. Lightly wet the exposed brick surfaces.
   5. Lay brick units with completely filled bed and head joints; Butter ends with sufficient mortar to fill head joints and shove into place.

NOTE: Lay masonry plumb and true following the coursing and patterns of the adjacent existing sound construction; Level off work at required heights and form beds to build-in salvaged or moved materials.

6. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.
7. Blend new work into existing work smoothly with no lines of demarcation and no change of pattern or coursing.
8. Rake all joints in replacement work to receive tuck pointing; Joints up to 3/8" in width shall be raked to a depth of 1/2"; Joints 3/8" in width shall be raked to a depth of 1".
9. Brush all excess mortar from the wall surface frequently during the work; Protect all existing surfaces from mortar dripping and splashing.

3.04 ADJUSTING / CLEANING

A. Clean off adjacent surfaces which have been spattered during the course of the work. Rinse immediately with clean, clear water.

B. Wipe all excess mortar as the work progresses. Dry brush at the end of each day's work.

C. After mortar is thoroughly set and cured, remove loose mortar and dirt from new masonry surfaces.

D. Wash down the masonry surface with clean, clear water.

END OF SECTION

SECTION 042900 –

REINFORCED UNIT MASONRY

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. This Section includes grouted, reinforced masonry consisting of grout and reinforcing steel.

B. Related Sections:

1. Section 032000 "Concrete Reinforcement" for reinforcing steel.
2. Section 033000 "Cast-In-Place Concrete" for concrete.
3. Section 042000 "Unit Masonry" for all other elements of masonry construction.

1.3 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Unit Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE AND PRECONSTRUCTION TESTING REQUIRMENTS

A. Provide structural unit masonry that develops indicated net-area compressive strengths at 28-days. Contractor shall determine the net-area compressive strength of masonry based on 1.4B or 1.4C. Mortar for unit masonry shall comply with ASTM C270. Contractor shall meet ASTM C270 requirements based on the Property or Performance Specification.

B. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

1. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

    a. Concrete Masonry Unit Test (Property and Proportion Specification): For each type of unit required, according to ASTM C140 for compressive strength.
    b. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C780.

c. Mortar Test (Property Specification): For each mix required, according to ASTM C109 for compressive strength.
d. Mortar Test (Property Specification): For each mix required, according to ASTM C780 for compressive strength.
e. Grout Test (Compressive Strength) (Property and Performance Specification): For each mix required, according to ASTM C1019.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Section 013100 “Project Management and Coordination.”

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Sustainable Design Submittals:

1. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.

C. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.

2. Reinforcing Steel: Show fabrication and installation details Reinforcing Steel. Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show bar sizes, schedules, bent bar diagrams and other arrangements as required for fabrication and placement. Show elevations of reinforced walls.

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:

1. Grout mixes complying with material and compressive strength requirements of ASTM C476 for fine grout. Include description of type and proportions of grout ingredients and design slump.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency

B. Material Certificates: For each type and size of the following:

1. Masonry units.
   a. Include material test reports substantiating compliance with requirements
   b. Include data and calculations establishing average net-area compressive strength of units.

2. Cementitious materials. Include brand, type, and name of manufacturer.
3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
4. Grout mixes. Include description of type and proportions of ingredients
5. Reinforcing bars.
6. Joint reinforcement.
7. Anchors, ties, and metal accessories.

C. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Test according to ASTM C109 for compressive strength, ASTM C1506 for water retention, and ASTM C91 for air content.
2. Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirements.

D. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

E. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.8 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C1093 for testing indicated.

B. Masonry Standard: Comply with the **Florida** Building Code, **8th** Edition and ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.10 FIELD CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Refer to Section 042000 “Unit Masonry” for masonry materials and accessories and grout materials not included in this section.

2.2 MANUFACTURERS

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges, accepted for these characteristics, from single source manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.3 CONCRETE MASONRY UNITS

A. Regional Materials: Verify CMUs are manufactured within 500 miles of Project site from aggregates that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

B. CMUs: ASTM C90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2,000 psi.
2. Density Classification: Lightweight for walls in building, Normal weight for site walls.

C. Shapes: Provide shapes indicated and as follows, with exposed surfaces, matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for corners, jambs, sashes, control joints, lintels, bond beams and other special conditions.

2.4 CONCRETE AND MASONRY LINTELS

A. General: Provide one of the following:

1. Provide precast lintels made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcing bars indicated or required to support loads indicated. Cure precast lintels by the same method used for concrete masonry units.
2. Provide prefabricated or built-in-place masonry lintels. Use specially formed bond beam units with reinforcing bars placed as indicated and filled with fine grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.5 MORTAR AND GROUT MATERIALS

A. Regional Materials: Manufacture, extract, harvest, or recover aggregate for mortar and grout within 500 miles of Project site.

B. Portland Cement: ASTM C150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

C. Hydrated Lime: ASTM C207, Type S.

D. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

E. Mortar Cement: ASTM C1329.

F. Aggregate for Mortar: ASTM C144

G. Aggregate for Grout: ASTM C404 for fine grout.

H. Water: Potable.

2.6 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615, Grade 60. Shop fabricate bent bars.

B. Masonry Joint Reinforcement, General: ASTM A 951.

1. Interior Walls: Mill- galvanized, carbon steel.
2. Exterior Walls: Hot-dip galvanized, carbon, ASTM A 153 with a coating thickness of 1.50 oz/sf steel.
3. Wire Size for Side Rods: 0.148-inch diameter.
4. Wire Size for Cross Rods: 0.148-inch diameter.
5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
6. Provide in lengths of not less than 10 feet**,** with prefabricated corner and tee units.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Ladder type with single pair of side rods complying with ASTM A951.

D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication.

1. Provide units with either two loops or four loops as needed for number of bars indicated.

2.7 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site

C. Mortar for Unit Masonry: Comply with ASTM C270 Proportion or Property Specification. Provide the following types of mortar for applications stated unless another type is indicated.

1. For masonry retaining earth, use Type M.
2. For all other masonry, use Type S.

D. Grout for Unit Masonry: Comply with ASTM C476 with a minimum compressive strength of 2500 psi in 28 days.

1. Use fine grout with a slump of 8 to 10 inches as measured according to ASTM C143.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Verify that foundations are within tolerances specified.
2. Verify that reinforcing dowels are properly placed.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Refer to Section 042000 “Unit Masonry” for general installation requirements of unit masonry.

B. Build chases and recesses to accommodate items specified in this and other Sections.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to the opening.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units which are not in multiples of 8 inches. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Allow wet masonry units to dry prior to placement.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2-inch maximum.

7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, reinforcement, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern: Unless otherwise indicated, lay masonry in one-half running bond with vertical joint in each course centered on units in courses above and below, unless otherwise indicated on Drawings. Interlock each course at corners.

C. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

D. Place clean units while the mortar is soft and plastic. Remove and relay in fresh mortar any unit disturbed to the extent that initial bond is broken after initial positioning.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

G. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

H. Design, provide and install bracing that will assure stability of masonry during construction. Include provisions to project against wind or other natural or construction forces that might collapse or otherwise damage a partially or completely built masonry wall in a partially completed structure.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow masonry units as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

3.6 MASONRY JOINT REINFORCEMENT

A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch. Lap reinforcement a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Space reinforcement not more than 8 inches o.c. in foundation walls.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at corners and wall intersections by using prefabricated “L” and “T” sections.

D. Cut and bend reinforcing units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:

1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 16 inches o.c. or as indicated on the drawings.

3.8 ANCHORING MASONRY TO CONCRETE

A. Anchor masonry to concrete where masonry abuts or faces concrete to comply with the following:

1. Provide an open space not less than 1/2 inch wide between masonry and concrete unless otherwise indicated. Keep open space free or mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors at 16 inches o.c. vertically and 36 inches.

3.9 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Install backer-rod in head joints and apply sealant after concrete masonry is complete.

3.10 LINTELS

A. Provide concrete or masonry lintels where shown and where openings of more than 24 inches are shown. Reinforce and grout lintels as shown on the Drawings.

B. Install steel lintels where indicated.

C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.11 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements during construction.

1. Construct formwork to conform to shape, line, and dimensions shown. Make it sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements of ACI 530.1/ASCE 6/TMS 602 and as follows:

1. Place reinforcement and accessories as indicated.
2. Support and fasten reinforcement together to prevent displacement by construction loads or by placement of grout.
3. Clean reinforcement by removing mud, oil, or other materials that will reduce the bond at the time grout is placed. Reinforcement with tightly bound rust and/or mill scale is acceptable without cleaning provided the dimensions and weights, including heights of deformations, of the cleaned sample are not reduced.
4. Place all reinforcement prior to grouting. Tie vertical reinforcement to dowels at base of masonry with tie wire and thread masonry units over or around reinforcement. Support vertical reinforcement at 10 feet o.c. Extend vertical bars the specified lap length above top of pour and support bar in proper position at top of grout pour. Where vertical bars are placed after laying masonry, place wire loops extending into cells as masonry is laid and loosen before mortar sets. After insertion of bar, pull loops and bar to proper position and tie free ends.
5. Do not bend reinforcement after it is embedded in grout.
6. Splice bars only where indicated. Provide 48 bar diameter lap splices, unless otherwise noted. Place bars in contact and wire tie. Bars spliced by noncontact lap splices shall be spaced 6 inches apart (maximum).

7. Bar placement tolerance is ±1/2 inches perpendicular to wall and 2 inches along wall. The clear distance between parallel bars that are not contact lap spliced shall be not less than 1 inch in walls and 1-1/2 inches in columns and pilasters. Maintain ¼ inch clear between bars and any face of masonry.

C. Laying Masonry Walls: Construct masonry walls as follows:

1. Lay masonry units to top of grout pour prior to placing grout. Maximum grout pour height is 12 feet or top of bond beam, whichever is lower.
2. Construct wall such that vertical cells to be grouted are aligned and unobstructed openings for grout are 3 inches x 4 inches (minimum). Construct grout spaces free of mortar droppings, debris, loose aggregates, and any material deleterious to grout; or, clean the cells prior to grouting. Remove masonry protrusions extending 1/2 inch or more into cells to be grouted.
3. Do not lay masonry until grouted masonry below is cured.
4. In bond beams, use special units or modify regular units to allow placement of horizontal bars. Place small mesh, expanded metal lath or wire screening in mortar joints under bond beam courses over cells of non-reinforced vertical cells.

D. Cleanouts: Provide cleanout openings at each vertical bar at the base of walls in which one of the following applies:

1. Grout pour height exceeds 5 feet.
2. Vertical bars are not otherwise fastened to prevent displacement. In this case, use cleanout to securely tie bar in position.
3. To remove dust, dirt, mortar droppings, loose pieces of masonry and other foreign materials from cell and top of support in cells to be grouted.

Construct cleanout by cutting opening in face shell. Construct cleanouts with openings of sufficient size to permit removal of debris and tying of bars. Minimum size is 3 inches x 3 inches. After cleaning and inspection, close cleanout opening and brace closure to resist grout pressure.

E. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.

1. Comply with requirements of ACI 530.1/ASCE 6/TMS 602.
2. Place grout within 1 1/2 hours from introducing water in the mixture and prior to initial set.
3. Confine grout to the areas indicated.
4. Place grout by pumping into grout spaces unless alternate methods are acceptable to the Architect.
5. Place grout continuously in lintels and bond beams. Grout walls in lifts not exceeding 5 feet or the elevation of top of bond beam, whichever is lower.
6. If grout pour during one day exceeds 5 feet, grout in lifts 5 feet each or less, with not less than 30 minutes and not more than 1 hour between lifts.
7. Terminate grout 1-1/2 inches below bond beam course or where cell above is to be grouted.
8. Place grout in bond beam course before filling vertical cores above bond beam.
9. Consolidate grout with mechanical vibrators having a 3/4 inch diameter head. Vibrate each lift and reconsolidate after 10 minutes. Grout pours 12 inches high or less may be puddled in lieu of mechanical vibration.

3.12 FIELD QUALITY CONTROL

A. Testing: Owner will engage a Testing Agency to perform tests and prepare reports. Allow access to scaffolding and work areas, as needed to perform tests. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

1. Begin masonry construction only after the Testing Agency has verified proportions of site-prepared mortar.

B. Testing Frequency: Four grout cubes will be sampled and tested for compressive strength per ASTM C1019 for each 5000 sq. ft. of wall surface.

3.13 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained or otherwise damaged or that do not match the adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Remove all mortar fins larger than 1/2 inch within cells to be reinforced.

END OF SECTION 042900

SECTION 045200.20
REPOINTING MASONRY USING LIME MORTAR

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.02 SUMMARY

A. This procedure includes guidance on repointing stone masonry using lime mortar.

B. Repointing is the process of removing deteriorated mortar from a masonry joint and replacing old mortar with new, sound mortar.

C. This process is sometimes referred to as "tuck pointing", though "tuck pointing", is actually a decorative treatment rather than a method of repair. True tuck pointing is the process of adding a finish layer of mortar, occasionally tinted, to the outer portion of a newly laid joint.

D. Major reasons for mortar joint failures include:
   1. Weathering action,
   2. Settling,
   3. Temperature cycles,
   4. Poor original design and materials, and
   5. Lack of exterior maintenance.

E. For guidance on preparing lime mortar, see 041000.30.

1.03 SUBMITTALS

A. Manufacturers' literature describing packaged items.

B. Source and screen analysis of bulk aggregate.

C. Mortar sample: Submit, for verification and approval, a sample of each type of mortar used, in form of 6" long by 1/2" wide sample strips of mortar set in aluminum or plastic channels.
   1. Provide record of mortar mix, composition and field procedures to be followed.

1.04 QUALITY ASSURANCE

A. Mock-ups: Raking and Repointing Sample Work:
   1. Test/Sample Area and Owner Approval:
      a. Initially perform sample joint raking and repointing on each of a 100 sq. ft. test of stone, brick, and terra cotta areas as approved by Owner.
      b. Demonstrate proficiency with joint raking tools and ability to not damage masonry units with either hand or power tools.
      c. Mix and cure test batch of repointing mortar and place in joints; repeat test mix
         1) until mortar color is approved. Test mortar should be matched, dried and approved before placing in joints.
      d. Demonstrate workmanship of repointing procedures and joint finishing.
      e. Gain written approval from RHPO for test area before proceeding with remaining work.
   2. Joint Raking Method: Rake joints by hand ONLY using special joint cleaning chisels and hammer.
   3. Repointing Method: Repoint joints by hand ONLY using approved pointing trowels. NO "BAGGING" OR CAULKING GUN POINTING METHODS APPROVED.

1.05 PROJECT / SITE CONDITIONS

A. Environmental Conditions: Perform repointing only when the temperature is between 40o F and 80o F. If the temperature is below 40 o F the mortar sets too slowly, and there is a good chance

of freezing before it fully sets. If the temperature is above 80o F, the mortar will set too quickly, and there is a strong chance of excessive loss of water prior to adequate setting.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Repointing Tools: Available from good hardware stores, building material suppliers or mail-order catalogues.
   1. The Stanley Gold-blatt Tool Co.
   2. Marshalltown Trowel Co.
   3. Masonry Specialty Co.

2.02 MATERIALS

A. Lime mortar (See 04100-03-S for materials and procedures in preparing lime mortar)

B. Clean, potable water.

2.03 EQUIPMENT

A. Trowels: range in length from 10-12 inches

B. Chisel:
   1. Joint chisels or a standard mason's chisel with a 1-1/2 in. blade and a long narrow handle
   2. Floor chisels

C. Hammer
   1. 5# stone dressing hammer
   2. 2# striking hammer
   3. No-Bounce" hammer
   4. Full size and one half size brick hammers

D. Joint Tools: (see 2.01 MANUFACTURERS above)
   1. 3/8"-1/4" raised beaded tool
   2. 3/8"-1/4" beaded striking tool
   3. 1/2" raised beaded tool with offset handle
   4. 1/2" flat joint iron
   5. Pointing tool should be about 1/16" narrower than the joint being filled to achieve good compaction

E. Hawks: Plywood or steel hawk (mortar board)

F. Brushes:
   1. Natural bristle brushes
   2. Stiff bristle brushes (no wire)

G. Spray bottle

2.04 MIXES

A. See 04 10 00.30 for lime mortar mixes

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine all existing exterior mortar joints. If the answer to any of the following questions is yes, then the building's joints are deteriorated and need repointing:
   1. Are mortar joints eroded back more than 1/4" from the masonry face?
   2. Are there cracks running vertically or horizontally through the mortar?
   3. Are mortar bonds broken or pulled away from the masonry?
   4. Has mortar fallen out of joints?
   5. Is mortar excessively soft, powdery or crumbling?
   6. Is pointing badly-stained?

B. Typical exterior damage due to mortar deterioration includes open joints, efflorescence, spalling and loosened masonry units.

C. Typical interior damage due to mortar deterioration includes failing plaster and stained wall paper.

D. A professional pointer experienced in old masonry is required for any of the following areas or conditions:
   1. Chimneys need repointing
   2. Window lintels must be rebuilt
   3. Masonry is loose or missing
   4. Work must be done from scaffolds or extension ladders
   5. The original mortar joints were "beaded"-tooled with a raised, round-profiled joint that projects out from the wall

3.02 PREPARATION

A. Preparing the Joints:
   1. Clean area of loose dirt and debris using a stiff bristle brush and remove all extraneous fastenings and devices.
   2. Install necessary protection of adjacent building materials, property and persons from joint cleaning work and dirt.
   3. Control dust and dirt from raking work; dampen area being worked; and use curtains to limit spread of dust from joint raking and cutting operations.

B. Joint Cutting and Raking:
   1. Cut and rake old mortar from existing joints by hand using a hammer and chisel.
      NOTE: Power chisels and power saws should not be used.
   2. Place the chisel in the center of the joint and pound it with a striking hammer or "No-Bounce" hammer until the mortar disintegrates.
   3. Rake out the loose material to a depth of about 1 inch and never to a depth less than their width. Leave a clean, square face at the back of the joint to provide optimum contact with the new mortar.
      CAUTION: Avoid overcutting ends of vertical joints, widening joints or cutting into bedding faces of masonry units.
   4. While raking out joints, remove all metal fittings such as nails, brackets and clips on both horizontal and vertical surfaces.
   5. Carefully clean out the prepared face with a soft or stiff bristle brush, or blow the joints clean with low-pressure compressed air (40-60 psi).
      a. Thoroughly flush out joint with clean, clear water.

3.03 ERECTION, INSTALLATION, APPLICATION

A. Filling Joints:
   1. Dampen masonry surfaces and joints to control suction and evaporation before placing repointing mortars.
      NOTE: There should be no free water present which may cause voids in the mortar.
   2. Using a pointing tool, push the mortar into the joint from a board and iron with the maximum possible pressure; The mortar should be applied in layers, each to a maximum thickness of 3/8".
      NOTE: The pointing tool should be about 1116" narrower than the joint being filled to achieve good compaction. In some cases, the joints will beso thin that a standard pointing tool will need to be ground down to fit the joint.
   3. Thoroughly compact each layer of mortar and allow to set until thumb-print hard before applying the next layer of mortar.

4. Fill the joints so that they are slightly recessed from the masonry face. Avoid leaving a joint which is visually wider than the actual historical appearance
5. Continuously keep all excess and spilled mortar brushed off the faces of masonry units, ledges and other surfaces before it sets or stains the work.

B. Joint Finishing:
1. Begin when mortar attains "thumb print" hardness.
2. Tool the joint to match the old mortar.
   NOTE: It is important to tool the joint at the right stage; if the joint is too soft, the color will be lighter than expected and hairline shrinkage cracks are likely to occur; if the joint is too hard when tooled, dark streaks may appear (tool burning) and good closure of the mortar against the masonry will not be achieved. Excessive tooling may bring lime and fine aggregates to the surface, creating a visual change in the texture and a surface subject to early deterioration.
3. To produce a roughened texture, lightly spray the mortar with water after the initial set, stipple the mortar with a stiff bristle brush or dab the mortar with coarse sacking.
4. Protect finished work from direct sun and rain until the face has dried and hardened.

3.04 ADJUSTING / CLEANING

A. Cleaning Up:
1. Use masking and drop cloths to prevent mortar stains on adjacent work and ledges.
2. Keep work areas clean and free from mortar drips, spills and residue of waste mortars or wash-off.
3. Clean off excess mortar as work proceeds using masonry brushes before mortar sets.
4. Wash completed repointing work when finished mortar joints are set with clean water and masonry brushes, scrubbing only as required to clean mortar stains off masonry without scouring the units and joint faces.
5. Do not use acid or detergent cleaning agent to aid mortar removal and clean-up without written approval from Owner.

B. Curing:
1. Schedule work only when moderate weather is forecast.
2. Protect completed work from adverse weather, heavy rainfall, freezing, and drying by direct sunlight and winds until cured.
3. Sprinkle or mist repointed work as required to achieve cure in mortar joints for a minimum of 72 hours after completion.
4. Lime Mortar: Cures by drying and crystallization, not by hydration; and can be washed out of joints if not protected before it cures.

C. Final Cleaning:
1. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter using stiff nylon or bristle brushes and clean water spray applied at low pressure.
2. NOTE: Use of metal scrapers or brushes is not permitted. Use of acid or alkali cleaning agents is not permitted.

D. Some efflorescence, called new construction "bloom" occasionally appears on the surface within the first few months following a repointing project. These deposits normally are harmless and are removed by the natural washing of the rain. If not removed by natural weathering, they can be removed with dry brushing with a bristle brush. The use of chemical cleaners to remove this type of efflorescence normally is not necessary; AVOID USING ACIDS, PARTICULARLY MURIATIC ACID.

END OF SECTION

SECTION 047200
CAST STONE MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural cast stone.

B. Units required are:
   1. Exterior wall units, including wall caps, coping, lintels, sills, quoins, water tables, surrounds, and medallions.
   2. Outdoor benches.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 042000 - Unit Masonry: Installation of cast stone in conjunction with masonry.

D. Section 079200 - Joint Sealants: Sealing joints indicated to be left open for sealant.

1.03 REFERENCE STANDARDS

A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

C. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2007b (Reapproved 2014).

D. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement; 2025.

E. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

F. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.

G. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019.

H. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2017.

I. ASTM C642 - Standard Test Method for Density, Absorption, and Voids in Hardened Concrete; 2013.

J. ASTM C1364 - Standard Specification for Architectural Cast Stone; 2010b.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Test results of cast stone components made previously by the manufacturer.
   1. Include one copy of ASTM C1364 for Architect's use.

C. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.

D. Verification Samples: Pieces of actual cast stone components not less than 6 inches square, illustrating range of color and texture to be anticipated in components furnished for the project.

E. Source Quality Control Test Reports.

F. Manufacturer's Qualification Data: Documentation showing compliance with specified requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. A firm with a minimum of 5 years experience producing cast stone of types required for project.
2. Current producer member of the Cast Stone Institute or the Architectural Precast Association.
3. Manufacturer's production facility currently holds a Plant Certification from the Cast Stone Institute or the Architectural Precast Association.
4. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least 10 years of documented experience.

1.06 MOCK-UP

A. Mock-Up: Provide full size cast stone components for installation in mock-up of exterior wall.

B. See Section 014000 - Quality Requirements for additional requirements.
1. Approved mock-up will become standard for appearance and workmanship.
2. Mock-up may remain as part of the completed work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.

B. Number each piece individually to match shop drawings and schedule.

C. Store cast stone components and installation materials in accordance with manufacturer's instructions.

D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.

E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.

F. Store mortar materials where contamination can be avoided.

G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

1.08 WARRANTY

A. Provide a 10-year material warranty for cast stone supplie.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Cast Stone:
1. Any current producer member of the Cast Stone Institute.

2.02 ARCHITECTURAL CAST STONE

A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural limestone, complying with ASTM C1364.
1. Fabrication method: Wet cast - manufactured from measurable slump concrete.
2. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
3. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
4. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
5. Color: Match sample on file at Architect 's office.
6. Remove cement film from exposed surfaces before packaging for shipment.

B. Shapes: Provide shapes indicated on drawings.

1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
2. Unless otherwise indicated on drawings, provide:
   a. Wash or slope of 1:12 on exterior horizontal surfaces.
   b. Drips on projecting components, wherever possible.
   c. Raised fillets at back of sills and at ends to be built in.

C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.
1. Pieces More than 24 inches in Any Dimension: Provide full length two-way reinforcement of cross-sectional area not less than 0.25 percent of unit cross-sectional area.

2.03 MANUFACTURING TOLERANCES

A. Cross section dimensions shall not deviate by more than ±1/8 in. from approved dimensions.

B. Length of units shall not deviate by more than length/ 360 or ±1/8 in., whichever is greater, not to exceed ±1/4 in.
1. Maximum length of any unit shall not exceed 15 times the average thickness of such unit unless otherwise agreed by the manufacturer.

C. Warp, bow or twist of units shall not exceed length/ 360 or ±1/8 in., whichever is greater.

D. Location of dowel holes, anchor slots, flashing grooves, false joints and similar features – On formed sides of unit, 1/8 in., on unformed sides of unit, 3/8 in. maximum deviation.

2.04 MATERIALS

A. Portland Cement: ASTM C150/C150M.
1. For Units: Type I, white or gray as required to match Architect 's sample.

B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.

C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.

D. Admixtures: ASTM C494/C494M.

E. Water: Potable.

F. Reinforcing Bars: ASTM A615/A615M deformed bars, epoxy coated.
1. Epoxy coated in accordance with ASTM A775/A775M.
2. Reinforcement shall be noncorrosive where faces exposed to weather are covered with less than 1.5 in. of concrete material. All reinforcement shall have minimum coverage of twice the diameter of the bars.

G. Steel Welded Wire Reinforcement: ASTM A884/A884M, epoxy coated.

H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.

I. Shelf Angles and Similar Structural Items: Type 304 stainless steel, of shapes and sizes as required for conditions.

J. Mortar: Portland cement-lime, as specified in Section 040511 ; do not use masonry cement.

K. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

2.05 SOURCE QUALITY CONTROL

A. Test compressive strength and absorption of specimens selected at random from plant production.
1. Test in accordance with ASTM C642.

2. Select specimens at rate of 3 per 500 cubic feet, with a minimum of 3 per production week.
3. Submit reports of tests by independent testing agency, showing compliance with requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.

B. Do not begin installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install cast stone components in conjunction with masonry, complying with requirements of Section 042000.

C. Mechanically anchor cast stone units indicated; set remainder in mortar.

D. Setting:
1. Drench cast stone components with clear, running water immediately before installation.
2. Set units in a full bed of mortar unless otherwise indicated.
3. Fill vertical joints with mortar.
4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

3.03 TOLERANCES

A. Joints: Make all joints 3/8 inch, except as otherwise detailed.
1. Rake mortar joints 3/4 inch for pointing.
2. Remove excess mortar from face of stone before pointing joints.
3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
4. Leave the following joints open for sealant:
   a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
   b. Joints in projecting units.
   c. Joints between rigidly anchored units, including soffits, panels, and column covers.
   d. Joints below lugged sills and stair treads.
   e. Joints below ledge and relieving angles.
   f. Joints labeled "expansion joint".

B. Installation Tolerances:
1. Variation from Plumb: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet or more.
2. Variation from Level: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet, or 3/8 inch maximum.
3. Variation in Joint Width: Not more than 1/8 inch in 36 inches or 1/4 of nominal joint width, whichever is less.
4. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

3.04 REPAIR

A. Repairs: Repair chips and other surface damage noticeable when viewed in direct daylight at 10 feet.
1. Repair with matching touch-up material provided by the manufacturer and in accordance with manufacturer's instructions.
2. Repair methods and results subject to Architect 's approval.

3.05 CLEANING

A. Keep cast stone components clean as work progresses.

B. Clean completed exposed cast stone after mortar is thoroughly set and cured.
   1. Wet surfaces with water before applying cleaner.
   2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
   3. Remove cleaner promptly by rinsing thoroughly with clear water.
   4. Do not use acidic cleaners.

3.06 PROTECTION

A. Protect completed work from damage.

B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

END OF SECTION

SECTION 051200 –

STRUCTURAL STEEL

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. The work specified in this section includes all labor, materials, equipment, permits, and services necessary for the furnishing, fabrication and erection of structural steel and related work, complete, in accordance with the Drawings and as specified herein, including the detailing of all connections.

B. Structural steel is that work defined in AISC “Code of Standard Practice for Steel Buildings and Bridges” and as otherwise shown on Drawings.

C. Related Requirements:

1. Section 031000 “Concrete Formwork” for Placing Anchor Rods.
2. Section 033000 “Cast-In-Place Concrete” for Grouting Base Plates.
3. Section 052100 “Steel Joists.”
4. Section 053100 “Steel Deck.”
5. Section 055000 “Metal Fabrication.”
6. Section 078100 “Applied Fireproofing.”
7. Section 099113 “Exterior Painting” and Section 099123 “Interior Painting” and Section 099600 “High Performance Coatings.”

1.3 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.4 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 RESPONSIBILITIES

A. The Engineer of Record is responsible for the design of the steel framing and the connections that are fully detailed as presented in the Contract Documents.

B. The fabricator is responsible for the preparation of Shop and Erection Drawings pursuant to the requirements of the Contract Documents. All connections that are not completely detailed on the drawings shall be designed by the Fabricator's Delegated Engineer. Submit signed and sealed connection details and calculations to the EOR for approval prior to submitting shop drawings. Once approved, the connection details may be incorporated in the shop drawings. The shop drawings are not required to be signed and sealed.

C. The fabricator is responsible for the coordination of all surveyed field conditions and field measurements necessary for the detailing, fabrication and erection of their work. All field measurements shall be provided on the shop drawings prior to submittal.

D. The Engineer of Record is responsible for the structural adequacy of the structure in the completed project. The erector is responsible for the means, methods and safety of the erection, including all temporary guys, beams, falsework, cribbing or other elements required for the erection operation. If the erector is unsure of these requirements, he shall retain a **Florida** Licensed Engineer to determine and design all temporary requirements.

1.6 PREINSTALLATION MEETINGS

A. Preconstruction Meeting: There shall be a Preconstruction Meeting with the Owner, Architect, Structural Engineer, Contractor, Fabricator, Erector, Testing Laboratory and Special Inspector to clarify responsibilities and requirements as set forth in Division 01 "Project Management and Coordination".

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design:

1. Environmental Product Declaration: For each product.
2. Health Product Declaration: For each product.
3. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

C. Shop Drawings:

1. Submit to the Architect for acceptance, shop and erection drawings for all structural steel components. See "Shop Drawings and Other Submittals" notes regarding the possible reproduction of Structural Drawings for use as shop or erection drawings. Drawings shall include complete details, dimensions, schedules and procedures for the fabrication, assembly, and sequence of erection.
2. No changes to the completed connection shown on the drawings will be considered without complying with the applicable requirements for substitutions. The fabricator shall submit details and complete calculations that clearly identify proposed substitutions for Engineer's review prior to preparation of detailed shop drawings. Proposed variations to details shown on the Contract Drawings will be considered and such variations must have preliminary acceptance prior to the preparation of detailed shop drawings. The details and calculations shall clearly show the capacity of the connections designed by the fabricator. The calculations shall show details of the assembled joint with all bolts and

welds required. All design calculations, drawings and details for substitutions shall be signed, sealed and dated by the Delegated Engineer.

3. For structural steel connections indicated on the drawings to comply with design loads, include signed and sealed calculations by the qualified professional engineer responsible for their preparation under the following criteria:
   a. Design all connections for the factored forces indicated on the drawings in accordance with all applicable codes and specifications.
   b. Set connection work point at the intersection of member centerlines for all connection design and detailing.
   c. The conceptual connections on the drawings show design intent and shall be completed for the member designated forces. Adapt those details to accommodate the atypical conditions. The conceptual connection does not show the complexity of the final connection designed for the required forces.
   d. Design, detail, and install stiffeners, continuity plates, doubler plates as required to resist the indicated design forces. The member size is based on member behavior away from the connection.
   e. All forces shown on the drawings act concurrently unless noted otherwise.
   f. During bidding, if no moment is shown on the drawings, provide full moment capacity of the member of .9 Fy Z; and if no shear is shown, provide full shear capacity of .6 Fy d tw. For missing tension forces, assume 95% of the tension member capacity.
   g. Use the same bolt sizes shown on the drawings. All bolts with the same diameter shall be of the same grade. Skip one diameter size for bolts with different grades. Do not use oversized or slotted holes unless approved by EOR.
   h. Shop drawins incorporating the design of the Delegated Engineer shall be reviewed and stamped by the Delegated Engineer prior to submittal to the EOR.
4. Include details of cuts, connections, camber, holes, threaded fasteners and other pertinent data. Indicate welds by standard AWS A2.4 symbols and show size, length, and type of each weld. Show shop welds on shop drawings and field welds on erection drawings.
5. Provide setting drawings, templates, and directions for installation of anchor rods, embeds and other anchorages to be installed by others.
6. Indicate surface preparation, such as primed, galvanized, etc., of each surface of each piece.

D. Acceptance of the Shop and Erection Drawings by the Architect/Engineer does not relieve the Fabricator of the responsibility for accuracy of detail dimensions on the shop drawings and the general fit-up of parts to be assembled in the field.

E. Before welding is started, the steel fabricator and erector, as applicable, shall submit to the Architect a signed and sealed statement by a **Florida** Licensed Engineer, who specializes in the design of weldments, that he/she has provided written welding procedures for this Project, establishing the welding process, sequence of assembly, preheat, interpass and postheat requirements in general if high residual stresses are present, and in particular for all members requiring partial or complete penetration groove welding.

1.8 INFORMATIONAL SUBMITTALS

A. Qualification Data: Include lists of Qualification data for firms and persons specified in the “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Welding certificates. Submit to Owner’s inspection agency.

C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

D. Mill Test Reports: Fabricator's certification that the chemical and physical properties of the following materials comply with the Project requirements:

1. Structural steel
2. Bolts, nuts and washers.
3. Direct-tension indicators.
4. Shear studs.
5. Welding electrodes.

E. Product Test Reports: For the following:

1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
2. Direct-tension indicators.
3. Tension-control, high-strength, bolt-nut-washer assemblies.
4. Shear stud connectors.
5. Shop primers.
6. Nonshrink grout.

F. Product Data for each type of product specified, including the following:

1. Bolts, nuts, and washers, including mechanical properties.
2. Direct-tension indicators.
3. Shear stud connectors.
4. Structural steel coatings.
5. Bearing pads

G. Fabricator's Quality Control Program.

1. Include welding and testing procedures.

H. Fabricator's shop inspection and test reports.

I. Substantiating data for primer on Class A faying surface.

1.9 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator with a minimum five years of documented successful experience on equivalent projects. Submit résumé demonstrating equivalent project experience.

B. Installer Qualifications: A qualified installer with a minimum five years of documented successful experience on equivalent projects. Submit copy of AISC Certification and résumé demonstrating equivalent project experience.

See Allstate Construction's bid package.

C. Qualifications for welding work: Qualify welding procedures and operators in accordance with AWS "Standard Qualification Procedure".

1. The Fabricator for shop welds and the Erector for field welds shall retain a Florida Licensed Engineer, who specializes in the design of weldments to prepare a written welding program pursuant to the requirements of AWS D1.1. The program shall include all necessary Welding Procedure Specifications (WPS), all necessary requirements for

qualification testing of WPS and welding personnel. The WPS shall include the welding process, sequence of assembly, preheat, interpass and postheat requirements. Welded joints of heavy sections and plates 2 inch thick and greater shall be detailed to limit the amount of weld metal. Double bevels shall be used in lieu of single bevels. Welding shall start at the most restrained part of the weldment and proceed to the least restrained.

2. The Fabricator and Erector, as applicable, shall conduct all necessary tests required by AWS D1.1 to qualify the WPS.
3. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests for the welding process and position used and have been continuously employed as a welder since certification. If recertification of welders is required, retesting will be Contractor's responsibility.

D. Stud Application Qualification Test:

1. Prior to erection, conduct stud application qualification tests in accordance with AWS D1.1 Chapter 7.6 and Annex IX. The tests are the responsibility of the Contractor or stud applicator.
2. Prepare specimen plates of A992 steel, minimum 1/2 inch thick, with an SP-6 surface preparation.
3. Weld a minimum of ten (10) studs through steel deck to the prepared plate(s). The studs and steel deck shall be of the same type as specified for use in the project. Test the studs by the bend test specified in AWS 7.6.6 or Annex IX.
4. If the tests are conducted by other than the Owner's testing agency, that agency shall be properly notified so that they may be present to witness the entire test procedure.

E. Codes and Standards: Comply with the following, unless more stringent provisions are indicated:

1. Florida Building Code, 8th Edition.
2. AISC 360, "Specification for Structural Steel Buildings."
3. AISC 303, "Code of Standard Practice for Steel Buildings and Bridges".

    a. Paragraph 4.4. "Approval" is modified such that the Structural Engineer will return submittals to the Architect within ten working days from time of receipt.

4. AISC 341, "Seismic Provisions for Structural Steel Buildings," including Supplement No. 1.
5. RCSC's "Specification for Structural Joints using High Strength Bolts." Approved June 22, 2010.
6. AWS D1.1 "Structural Welding Code - Steel".
7. ASTM A6 "Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling."
8. S.S.P.C. Society for Protective Coatings.
9. Occupational Safety and Health Act (OSHA), as amended to date.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site at such intervals to insure uninterrupted progress of work

B. Deliver anchor rods and anchorage devices which are to be embedded in cast-in-place concrete or masonry in ample time to not delay work.

C. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

D. Store fasteners in a protected place in sealed containers with manufacturer's labels intact until ready to use. Reseal open containers to prevent contamination by moisture or other deleterious substances. Store closed containers in a protective shelter to protect fasteners from dirt and moisture. Only as many fastener components as are anticipated to be installed during the work shift shall be taken from protective storage. Fastener components that are not incorporated into the work shall be returned to protective storage at the end of the work shift. Fasteners from open containers and fasteners that accumulate rust or dirt shall not be used and shall be immediately and permanently removed from the project site.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than the following:

1. W-Shapes: 60 percent.
2. Channels, Angles, M , S-Shapes: 60 percent.
3. Plate and Bar: 25 percent.
4. Cold-Formed Hollow Structural Sections: 25 percent.
5. Steel Pipe: 25 percent.
6. All Other Steel Materials: 25 percent.

B. Structural steel rolled W and WT shapes: ASTM A992, Grade 50.

C. Structural steel rolled M, S, C and MC shapes and Angles: ASTM A36, Grade 36.

D. Structural steel plates and bars: ASTM A36, Grade 36 and ASTM A572, Grade 50.

E. Cold-formed hollow structural sections (HSS):

1. Round sections:ASTM A500, Grade C, Fy=46 ksi.
2. Square and Rectangular sections: ASTM A500, Grade C, Fy=50 ksi.

F. Steel pipe: ASTM A53, Type E or S, Grade B, Fy=35 ksi.

2.2 BOLTS, CONNECTORS, AND ANCHORS

A. Unfinished threaded fasteners: ASTM A307, Grade A, regular low-carbon steel bolts and nuts.

1. Provide square head and nuts.

B. High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers; all with plain finish.

1. Direct-Tension Indicators: ASTM F959, Type 325-1, compressible-washer type with plain finish.

C. High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A490, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers with plain finish.

1. Direct-Tension Indicators: ASTM F 959, Type 490-1, compressible-washer type with plain finish.

D. Shear Connectors: ASTM A108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1, Type B with dimensions complying with AISC specifications.

E. Headed Anchor Rods: ASTM F 1554, Grade 36, with supplementary requirement S1, straight.

1. Nuts: ASTM A563 heavy-hex carbon steel.
2. Plate Washers: ASTM A36 carbon steel.
3. Washers: ASTM F 436, Type 1, hardened carbon steel.
4. Finish: Mechanically deposited zinc coating, ASTM B 695, Class 50.

2.3 PRIMER

A. Structural steel primer paint: SSPC – Paint 11 lead and chromate free, V.O.C. compliant, minimum solids 55% by volume. Use for steel not receiving special coatings or fireproofing. Refer to Architectural Drawings and Section 099113 “Exterior Painting,” Section 099123 “Interior Painting,” and Section 099600 “High Performance Coatings.”

1. Provide shop primer and shop applied top coat paint in accordance with Section 099113 “Exterior Painting,” Section 099123 “Interior Painting,” or Section 099600 “High Performance Coatings” where shown on the Architectural Drawings.
2. Steel permanently exposed to the elements that does not receive a coating, such as cooling tower supports, shall be hot dip galvanized.

2.4 SHRINKAGE-RESISTANT GROUT

A. Non-metallic shrinkage-resistant grout: Provide in accordance with Section 033000 “Cast-in-Place Concrete.”.

2.5 MISCELLANEOUS

A. Electrodes for welding: Comply with AWS D1.1-requirements.

1. For complete-joint penetration groove welds, weld metal shall have a charpy V-notch impact strength of 20 ft./lbs. –20°F.

2.6 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

1. Identify high-strength structural steel according to ASTM A6 and maintain markings until structural steel has been erected.
2. Mark and match-mark materials for field assembly. Fabricate for delivery sequence that will expedite erection and minimize field handling of materials
3. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
4. Where finishing is required, complete the assembly, including welding before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

B. Camber: Camber structural-steel members as indicated on drawings.

1. Where possible, camber of beams shall be applied by a cold bend process. The local application of heat may be used to introduce or correct camber, curvature, or straightness, provided the temperature of the heated area, as measured by temperature crayons or other approved means, does not exceed 1200 F.
2. Where indicated on the Drawings in a camber diagram, cantilever or double cantilever beams shall be cambered for the main span and cantilever end separately, either by a staged cold bending process or by the application of heat.
3. Cambers indicated on the drawings are intended to be final cambers at time of erection. The fabricator shall account for camber loss in the initial camber operations and during transportation of material to the site.
4. Beams and trusses detailed without specified camber shall be fabricated so that after erection any natural camber due to rolling or shop fabrication is upward.
5. Specified camber for beams at time of erection shall be within a tolerance of minus zero to plus one-eighth inch for each ten feet of member length.
6. Specified camber for trusses shall be built into the fabrication process with a tolerance of minus zero to plus 10% of the specified camber.

C. Architecturally Exposed Structural Steel: Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel identified as architecturally exposed structural steel.

1. Fabricate with exposed surfaces smooth, square, and free of surface blemishes including pitting, rust, scale**,** and roughness.
2. Remove blemishes by filling or grinding or by welding and grinding, before cleaning, treating, and shop priming.

D. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

E. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes, or enlarge holes by burning.
2. Baseplate Holes: Drill holes perpendicular to steel surfaces
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

F. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

2.7 CONNECTIONS

A. Splices in Structural Steel: Splicing of structural steel members in the shop or the field is prohibited without prior approval of the Architect. Any member having a splice not shown and detailed on approved shop drawings will be rejected.

B. Compression Joints: Compression joints which depend on contact bearing as part of the splice capacity shall have the bearing surfaces of individual fabricated pieces prepared to a common plane by milling, sawing, or other suitable means.

C. Bearing and Fit-Up of Column Compression Joints: Compression joints of all columns shall have bearing surfaces finished to a common plane by milling, sawing, or other suitable means. Lack of contact bearing must not exceed 1/16”, or corrective measures as defined by AISC Section M4.4 shall be required.

D. Connections:

1. Weld shop connections, as indicated. Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance and quality of welds and for methods used in correcting welding work.
2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances.

    a. Grind butt welds flush.
    b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

4. At welded beam-column flange joints, weld backing and run-off tabs shall be removed and repaired, including a 5/16” reinforcing fillet weld on the edge below the complete-joint-penetration groove weld. The exception that the top-flange backing is permitted to remain if it is attached to the column flange with a continuous fillet weld on the edge below the complete-joint-penetration groove weld.
5. High-Strength Bolts: Install high-strength bolts according to RCSC's “Specifications for Structural Joints using High Strength Bolts” for type of bolt and type of joint specified.
6. Bolt field connections, except where welded connections are indicated.
7. Provide high-strength, threaded fasteners except for temporary bracing to facilitate erection or otherwise indicated.
8. Faying surfaces, including coatings, for slip-critical connections shall have a minimum Class A slip coefficient.

E. Turn-of-nut method of bolt tightening is not acceptable.

F. Compression members composed of two or more rolled shapes separated from one another by intermittent fillers shall be connected to one another at such fillers spaced at intervals so that the least slenderness ratio, l/r, of either shape, between the fasteners, does not exceed the governing slenderness ratio of the built-up member.

G. Struts and Braces: Connect struts and braces to resist 50% of the allowable tensile strength of the members, unless otherwise specified.

H. Field Welded Construction: Comply with AWS D1.1 for procedures, appearance and quality of welds, and method used in correcting welding work.

I. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

J. Holes for other work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.

K. Provide weep hole in any confined steel surface capable of retaining water during erection or service. Seal weld as required to prevent migration of water into confined region.

2.8 SHOP PRIMING

A. Shop prime steel surfaces except the following:

1. Members or portions of members to be embedded in concrete or mortar. Prime embedded steel that is partially exposed on exposed portions and initial 2” of embedded areas only.
2. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
3. Members that are to be hot dip galvanized.
4. Surfaces within 2” of welds.
5. The faying surfaces of slip-critical bolted connections. The exception is for members that receive a coating system. There the faying surfaces should receive a primer providing a Class A surface, with a slip coefficient of 0.33. Submit substantiating data in conformance with Appendix A of the AISC “Specification for Structural Joints”.
6. Mask off and do not prime a strip 2” wide on any surfaces to receive a row of headed studs or puddle welds.

B. Surface Preparation: After inspection and before shipping, clean steel work to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 6, "Commercial Blast Cleaning" for steel to be painted or receive a coating
2. SSPC-SP 2, "Hand Tool Cleaning," or SSPC-SP 3, "Power Tool Cleaning" for all other conditions.

C. Priming: Unless specified otherwise in Section 099113 “Exterior Painting” or Section 099123 “Interior Painting,” immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 2.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces. Refer to Section 099600 “High Performance Coatings” for priming and painting members to receive special coatings.

D. Steel members which cannot be readily painted after fabrication, such as back-to-back angles and tees, shall be primed and finish coated, or receive two coats of primer, prior to fabrication.

E. Do not print or emboss the name of the fabricator on exposed steel unless it is completely concealed by the finish painting.

2.9 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel members permanently exposed to the elements, such as cooling tower support steel, according to ASTM A123.

1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
2. Galvanize cooling tower support steel, lintels, and shelf angles attached to structural-steel frame and located in exterior walls.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, bearing pads, and other embedments for compliance with requirements.

1. Surveys: Employ a Florida Licensed Engineer or Land Surveyor for accurate erection of structural steel. Check elevations of concrete and masonry bearing surfaces and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Architect. Do not proceed with erection until corrections have been made, or until compensating adjustments to structural steel work have been agreed upon with Architect.

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

3.2 PREPARATION

A. Temporary shoring and bracing: Provide temporary shoring and bracing members and connections of sufficient strength to bear imposed loads from steel self weight and erection procedures or any other loads created by other contractors on a temporary basis. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guidelines to achieve proper alignment of structures as erection proceeds.

1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

B. Temporary planking: Provide temporary planking and working platforms as necessary to effectively complete work.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Baseplates and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of baseplate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
4. Promptly pack grout solidly between bearing surfaces and base plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
5. Base plates must be grouted a minimum of 72 hours prior to placing concrete slabs on supporting steel structure.

C. Anchor rods and bolts: Furnish anchor rods, bolts and other connectors required for securing structural steel to foundations and other in-place work.

1. Furnish templates and other devices as necessary for pre-setting rods, bolts and other anchors to accurate locations.
2. Refer to Section 3 of these specifications for anchor rod installation requirements in concrete, and Section 4 for masonry installation.

D. Maintain erection tolerances of structural steel and architecturally exposed structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

E. Field assembly: Set structural members accurately to lines and elevations indicated. Align and adjust various members forming a part of a complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Comply with AISC Code of Standard Practice except where more stringent requirements are contained herein.

1. Level and plumb individual members of structure within specified AISC tolerances.
2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.

F. Erection bolts: On exposed welded construction, remove erection bolts, fill holes with plug welds and grind smooth at exposed surfaces.

G. Comply with AISC Specification for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

H. Splice members only where indicated and accepted on shop drawings.

I. Thermal cutting: Do not use gas-cutting torches in field for correcting fabrication errors in primary structural framing. When permitted, finish gas-cut sections equal to a sheared appearance by grinding or reaming. Do not use gas cutting to fabricate bolt holes.

J. Do not enlarge unfair holes in members by burning or by use of drift pins. Ream holes that must be enlarged to admit bolts as permitted by Architect.

K. Headed shear studs: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions. All welding ferrules for shear connectors shall be removed prior to placement of concrete.

L. Bearing Pads: Install bearing pads as structural steel members are being erected. Set pads on true, level, and uniform bearing surfaces and maintain in correct position until structural steel members are placed.

3.4 FIELD CONNECTIONS

A. Store fastener components in sealed containers until ready for use. Reseal open containers to prevent contamination by moisture or other deleterious substances. Store closed containers from dirt and moisture in a protective shelter. Take from protective storage only as many fastener components as are anticipated to be installed during the work shift. Fastener components that are not incorporated into the work shall be returned to protective storage at the end of the work shift. Fasteners from open containers and fasteners that accumulate rust or dirt shall not be used and shall be immediately and permanently removed from the project site.

B. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using High Strength Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

C. Tighten bearing-type bolts (GR A325N, GR A325X, GR A490N, and GR A490X) to the snug tight condition as follows:

1. Bolts shall be placed in all holes, with washers positioned as required and nuts threaded to complete the assembly.
2. Compacting the joint to the snug-tight condition shall progress systematically from the most rigid part of the joint.
3. The snug-tightened condition is the tightness that is attained with a few impacts of an impact wrench or the full effort of an ironworker using an ordinary spud wrench.
4. More than one cycle through the bolt pattern may be required to achieve the snug-tightened joint.

D. Tighten slip-critical bolts (GR A325SC, GR A325TC, GR A490SC, and GR A490TC) to the minimum fastener tension indicated in Table 8.1 of the “Specification for Structural Joints using High Strength Bolts” as follows:

1. Confirm with Architect on which face of the connection the round head of the TC bolt shall be located for exposed connections.
2. Begin final tightening of slip-critical bolts only after a snug-tight joint as described above is achieved. Progress systematically from the most rigid part of the joint.
3. If splined end of tension-control bolts is severed prior to achieving snug-tight joint, remove and replace the fastener assembly.
4. Progress systematically from the most rigid part of the joint in a manner that will minimize relaxation of previously pretensioned bolts.
5. Determine tension using either load indicator washers, tension-control bolts, or a calibrated torque wrench.

At the Contractor’s option, slip-critical bolts may be installed in either standard, oversize, or short slotted holes. Design of connections using slip-critical bolts is based on a Class A faying surface and oversized holes.

E. Provide hardened washers conforming to ASTM F436 and place under the part being turned.

F. Do not reuse or retighten bolts which have been fully tightened. Use only non-galvanized nuts and bolts that are clean, rust-free, and well lubricated. Bolts and nuts shall be wax dipped by the bolt supplier or lubricated with Castrol Industrial Stick Wax.

G. Cleaning and lubrication of ASTM F3125, GR F1852 and GR F2280 twist-off-type tension-control bolt assemblies is not permitted.

H. Where slotted holes are used to accommodate thermal movement, notify the Architect if bolt is expected to hit the end of slot, based on temperature at time of installation.

I. Weld Connections: Comply with AWS D1.1 for tolerances, appearances, welding procedure specifications, weld quality, and for used in correcting welding work.

1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances.

    a. Grind butt welds flush.
    b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

J. Protect bearing pads from damage by field welding or cutting operations and provide noncombustible shields as required.

3.5 QUALITY CONTROL

A. Shop Quality Control:

1. The Fabricator shall provide a system of quality control, including shop welding inspections and testing, to ensure that the minimum standards specified herein are attained. Submit to Owner, Architect, Engineer and Owner's Testing and Inspection Agency complete details of the quality control program to be used and all testing and inspection reports. Visually inspect 100% of shop welds. Also, as a minimum, perform non-destructive tests of welds in conformance with AWS D1.1 as follows:

    a. Splices: 100%.
    b. Full penetration welds: 100%.
    c. Partial penetration welds: 50%.
    d. Fillet welds: 5%.

2. The fabricator may use the following examination methods, in descending order of importance. When a particular examination method for a joint is unfeasible, the highest order method that is practicable shall be used. Standard of acceptance shall be in accordance with AWS D1.1.

    a. Ultrasonic Method: In accordance with AWS D1.1.
    b. Radiographic Method: In accordance with ASTM E94 and ASTM E142, with a minimum quality level of "2-2T". This procedure is limited to the inspection of groove welds in butt joints only and is not to be used for fillet welds.
    c. Magnetic Particle Method: In accordance with ASTM E709. Use for examining partial penetration welds. Percentage of examinations is defined elsewhere in these specifications. The Yoke method may be used only for supplementary surface examination.

d. Dye Penetrant Examination Method: In accordance with ASTM E165.

3. The Fabricator shall ultrasonically inspect for laminations all joints where material is subjected to tension in the though thickness direction. Ultrasonic inspection shall extend for a distance of six times the material thickness subject to the through thickness tension, either side of the element delivering the tension.

B. Shop testing and inspection by the Owner is to evaluate the effectiveness of the Fabricator's required Quality Control and Assurance Program.

C. Owner will engage a Structural Inspector to perform field inspections pursuant to the Structural Inspection Plan presented on the Drawings.

D. Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.

E. Provide access for testing agency to places where structural steel work is being fabricated or produced and unobstructed views to all members in nearby storage so that required inspection and testing can be accomplished.

F. Testing agency may inspect structural steel at plant before shipment; however, Architect reserves the right, at any time before final acceptance, to reject material not complying with specified requirement.

G. Correct deficiencies in structural steel work which inspections or laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at Contractor's expense, as may be necessary to reconfirm any noncompliance of original work, and as may be necessary to show compliance of corrected work.

H. Shop Inspection and Tests: Testing Agency may inspect and test during fabrication of structural steel assemblies, as follows:

1. Review shop drawings and shop procedures with Fabricator's supervisory personnel.
2. Request and obtain necessary mill certifications of steel and verify proper material throughout the duration of the job.
3. Verify welding procedure qualifications, either by prequalifications or by witnessing qualification tests.
4. Verify welder qualifications, either by certification and/or by retesting. Obtain welder certificates.
5. Spot check layout and dimensions of jigs and fixtures for joint preparation, and fit up of members.
6. Verify welding electrodes to be used and other welding consumables as the job progresses.
7. Check preheating procedures for conformance to AWS D1.1.
8. Verify procedures for welding in accordance with applicable portions of section 4, "Technique", AWS D1.1.
9. Verify that quality of welds meet the requirements of Paragraph B.15, "Quality of Welds", AWS D1.1.
10. Provide inspection of surface preparation for coating and coating operations in accordance with SSPC VIS 1 and 2.
11. Perform visual inspection of all welds for compliance with Contract Documents. Provide random non-destructive tests of welds in conformance with Section 6 of AWS D1.1, as may be required by Architect, but not less than:

a. Full penetration welds: 25%.

b. Partial penetration welds: 15%.
c. Fillet Welds: 5%.

12. Testing laboratory may use the following examination methods, in descending order of importance. When a particular examination method for a joint is unfeasible, the highest order method that is practicable shall be used. Standard of acceptance shall be in accordance with AWS D1.1.

    a. Ultrasonic Method: In accordance with AWS D1.1.
    b. Radiographic Method: In accordance with ASTM E94 and ASTM E142, with a minimum quality level of “2-2T”. This procedure is limited to the inspection of groove welds in butt joints only and is not to be used for fillet welds.
    c. Magnetic Particle Method: In accordance with ASTM E709. Use for examining partial penetration welds. Percentage of examinations is defined elsewhere in these specifications. The Yoke method may be used only for supplementary surface examination.
    d. Dye Penetrant Examination Method: In accordance with ASTM E165.

13. Ultrasonically inspect for laminations after welding all joints with rolled shapes and plates greater than 1 1/2” thick, where material is subjected to tension in the through thickness direction. The ultrasonic inspection shall extend for a distance of six times the thickness of the plate receiving the through thickness tension, either side of the plate delivering the tension.
14. Interpret, record, and report all results of the non-destructive tests.
15. Mark for repair, any area not meeting Specification requirements. Correction of rejected welds shall be made in accordance with Paragraph 5.26, “Repairs”, AWS D1.1
16. Re-examine all repair areas and interpret, record, and report the results of examinations of repair welds.

I. Field Inspection and Tests: Inspect and Test during the erection of structural steel assemblies as directed by the Engineer of Record, but not less than the following:

1. Verify field welding procedures and obtain welder certificates.
2. Check joint preparation and fit up, backing strips, and runout plates.
3. Check preheating to assure proper temperature, uniformity, and thoroughness through the full material thickness.
4. Review welding sequence.
5. Inspector shall perform visual inspection of all welds for compliance with Contract Documents. Testing Agency shall perform non-destructive tests of welds in conformance with Section 6 of AWS D1.1 as may be required by Architect, but not less than:

    a. Splices: 100%.
    b. Full Penetration Welds: 100%.
    c. Partial Penetration Welds: 50%.
    d. Fillet Welds: All welds that do not pass the visual inspection.

6. Check 100% of bolted connections according to inspection procedures outlined in the “Specification for Structural Joints using High Strength Bolts” and as required elsewhere in these specifications.
7. Production Stud Application Testing: Test the first two studs per welder per day for each set-up and size and type of stud. Test by bending studs 30 degrees using a 4 lb. hammer per AWS D1.1 Section 7.7. Use a 4 lb. hammer to sound 100% of studs. A pinging sound usually represents a sound weld. Studs that produce a “thud” should be bend tested. Passing studs may remain bent while failing studs must be replaced.
8. Interpret, record, and report all results of the non-destructive tests.

9. Mark for repair any area not meeting Specification requirements. Correction of rejected welds shall be made in accordance with Paragraph 5.26, “Repairs”, AWS D1.1.
10. Re-examine all repair areas and interpret, record, and report the results of examinations of repair welds.

3.6 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A780.

1. Apply Zinc-Clad Cold Galvanizing by Sherwin-Williams or Cold Galvanizing Compound by ZRC Worldwide by brush or spray to provide a minimum dry film thickness of 3 mils.

B. Touchup Painting: Immediately after erection, clean slag from field welds, clean bolted connections, and abraded areas of shop paint. Apply paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

C. Touchup Priming: For steel having special coatings system, reapply both primer and top coat as specified in Section 099600 "High-Performance Coatings."

END OF SECTION 051200

SECTION 053100 –

STEEL DECK

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. This Section includes the following:

1. Roof deck.
2. Composite floor deck.

B. Related Sections include the following:

1. Section 033000 "Cast-in-Place Concrete" for concrete fill over steel deck
2. Section 051200 "Structural Steel Framing" for shop and field welded shear connectors.
3. Section 055000 "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of deck, accessory, and product indicated, or requested by the Architect.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

C. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, deck openings, special jointing, accessories, and attachments to other construction.

1.4 INFORMATIONAL SUBMITTALS

A. Welding Certificates: Copies of certificates for welding procedures and personnel. Submit to general contractor and Special Inspector.

B. Product Certificates: Signed by steel deck manufacturers certifying that products furnished comply with requirements.

C. Product Test Reports: Based on evaluations of comprehensive tests performed by a qualified testing agency, indicating that each of the following complies with requirements:

1. Power-actuated mechanical fasteners.

D. Research Reports: For steel deck, from ICC-ES.

E. Field quality-control test and inspection reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E329 to conduct the testing indicated, as documented according to ASTM E548.

B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code - Steel," and AWS D1.3, "Structural Welding Code - Sheet Steel."

C. Manufacturer Qualifications: Member of the Steel Deck Institute.

D. Installer Qualifications: An experienced installer who has completed steel deck installations similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

E. Fabrication and Erection: Fabricate and erect deck per the Steel Deck Institute's "Design Manual for Composite Decks, Form Decks and Roof Decks".

1. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.

F. Codes and Standards: Comply with Florida Building Code, 8th Edition.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIRMENTS

A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

B. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency acceptable to authorities having jurisdiction.

C. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

2.2 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Steel Deck:
   a. Canam Steel Corporation: Canam Group Inc.
   b. Coredeck
   c. DACS, Inc.
   d. Epic Metals Corporation.
   e. Marlyn Steel Decks, Inc.
   f. New Millennium Building Systems, LLC
   g. Nucor Corporation.
   h. Nucor Corporation, Verco Group
   i. Roof Deck, Inc.

2.3 ROOF DECK

A. Steel Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and the following:

1. Galvanized Steel Sheet: ASTM A653, Structural Steel (SS), Grade 40, G90 zinc coating.
2. Deck Profile; Depth and Design Uncoated-Steel Thickness: As indicated on Drawings.
3. Span Condition: Triple span typical, double span minimum, U.O.N. on Drawings.
4. Side Laps: Overlapped.

2.4 COMPOSITE FLOOR DECK

A. Composite Steel Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 31, the minimum section properties indicated, and the following:
1. Galvanized Steel Sheet: ASTM A653, Structural Steel (SS), Grade 40, G60 zinc coating.
2. Shear Lugs (Web Embossments): 0.050 inch high (min.).
3. Profile Depth and Design Uncoated-Steel Thickness: As indicated on Drawings.
4. Span Condition: Triple span typical, double span minimum, U.O.N. on Drawings.

2.5 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Steel Sheet Accessories: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.

G. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi, of same material and finish as deck, and of thickness and profile recommended by SDI Publication No. 31 for overhang and slab depth unless otherwise indicated.

H. Column Closures, End Closures, Z-Closures, and Cover Plates:
   1. Epicore Metals Corporation: Sheet steel of same material and finish, 10 gauge or less, unless otherwise indicated.
   2. All others: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.

I. Provide recessed or flat sump pan in accordance with roof drain requirements. Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. Recessed sump pans shall have with 3-inch wide flanges and be leveled recessed pans of 1-1/2-inch minimum depth. For drains, cut holes in the field.

J. Galvanizing Repair Paint: SSPC-Paint 20 or MIL-P-21035B, with dry film containing a minimum of 94 percent zinc dust by weight. Manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Galvacon Cold Galvanizing Compound: Lanco Inc.
   2. ZRC Cold Galvanizing Compound: ZRC Worldwide, Inc.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

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

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.

B. Deck has been designed to span unshored, U.O.N. on Drawings.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to decking.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may not be used in lieu of welding to fasten deck unless specifically allowed by the local product approval for the roofing system and approved by the Engineer of Record. Provide mechanical fasteners according to deck manufacturer's written instructions and per the Structural Notes on the Drawings.

3.3 ROOF DECK INSTALLATION

A. Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated as follows:

1. Weld Diameter: As indicated on the Drawings.
2. Weld Spacing: Weld deck units as indicated on the Drawings.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, as indicated on the Drawings.

1. Mechanically fasten with self-drilling, No. 10diameter or larger, carbon-steel screws.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped 2 inches minimum.

D. Roof Sump Pans and Sump Plates: Install over openings provided in roof decking and weld flanges to top of deck. Space welds not more than 12 inches apart with at least 1 weld at each corner.

1. Install reinforcing channels or zees in ribs to span between supports and mechanically fasten.

E. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck installation. Weld cover plates at changes in direction of roof-deck panels, unless otherwise indicated.

F. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated at non-fire-resistance-rated partitions. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

3.4 FLOOR DECK INSTALLATION

A. Fasten floor deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:

1. Weld Diameter: As indicated on the Drawings.
2. Weld Spacing: Space and locate welds as indicated on the drawings.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, as indicated on the Drawings.

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Butted at composite floor deck and lapped or butted at noncomposite form deck.

D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations, unless otherwise indicated.

E. Floor Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of decking. Weld cover plates at changes in direction of floor deck panels, unless otherwise indicated.

3.5 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

3.6 FIELD QUALITY CONTROL

A. Testing: Owner will engage a qualified independent testing agency to perform field quality-control testing.

B. Field welds will be subject to inspection.

C. Testing agency will report test results promptly and in writing to Contractor and Architect.

D. Remove and replace work that does not comply with specified requirements.

E. Additional testing and/or inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

END OF SECTION 053100

SECTION 054000 –

COLD-FORMED METAL FRAMING

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:

1. Exterior non-load-bearing wall framing.
2. Roof rafter framing.
3. Soffit framing.

B. Related Requirements:

1. Section 033000 “Cast-In-Place Concrete.”
2. Section 055000 "Metal Fabrications".
3. Section 092116.23 "Gypsum Board Shaft Wall Assemblies" for interior non-load-bearing, metal-stud-framed, shaft-wall assemblies.
4. Section 092216 "Non-Structural Metal Framing" for interior non-load-bearing, metal-stud framing and ceiling-suspension assemblies.

1.3 ACTION SUBMITTALS

A. Product Data and Installation Instructions: For each type of cold-formed steel framing product and accessory, including fasteners, materials, and finishes.

B. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.

C. Shop Drawings:

1. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

    a. For cold-formed metal framing indicated to comply with design loads, shop drawings and calculations shall be signed and sealed by the delegated (specialty) engineer responsible for their preparation.

D. Delegated-Design Submittal: For cold-formed steel framing.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For firms and persons specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project name and addresses, names and addresses of architects and owners, and other information specified.

B. Welding certificates.

C. Product Test Reports: For each listed product, for tests performed by a qualified testing agency.

1. Steel sheet.
2. Expansion anchors.
3. Power-actuated anchors.
4. Mechanical fasteners.
5. Vertical deflection clips.
6. Horizontal drift deflection clips
7. Miscellaneous structural clips and accessories.

D. Research Reports: For non-standard cold-formed steel framing, from ICC-ES.

1.5 QUALITY ASSURANCE

A. Product Tests: Mill certificates or data from a qualified independent testing agency, or in-house testing with calibrated test equipment indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.

B. Qualifications:

1. Fabricator Qualifications: Company with not less than five (5) documented satisfactory experiences designing and fabricating cold-formed steel framing systems equal in material, design and extent to the systems required for this Project.
2. Installer Qualifications: An experienced installer who has completed cold-formed metal framing similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

D. Engineering Responsibility: Engage a delegated licensed engineer to prepare design calculations, Shop Drawings, and other structural data.

E. Delegated Engineer: A licensed engineer who is legally qualified to practice in State of **Florida** and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.

F. Codes and Standards: Comply with the following, unless more stringent provisions are indicated:

1. Florida Building Code, 8th Edition.
2. ASCE 7, “Minimum Design Loads for Buildings and Other Structures.”
3. AWS D1.1, “Structural Welding Code - Steel.”
4. AWS D1.3, "Structural Welding Code - Sheet Steel."

See “Performance Requirements” for additional codes and standards.

1.6 FIELD MEASUREMENTS

A. Verify all dimensions and conditions by field measurement. Indicate and flag on shop drawings all discrepancies between actual conditions and contract documents.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer’s unopened containers or bundles, fully identified by manufacturer’s name, job number, and member number. Exercise care to avoid damage during unloading, storing and erection.

B. Store framing members on blocking, pallets, platforms or other supports off the ground, sufficiently braced to avoid damage from excessive bending.

C. Protect cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling.

1.8 PROJECT CONDITIONS

A. During construction, adequately distribute all loads applied to member so as not to exceed the carrying capacity of any framing member.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. 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:

1. AllSteel & Gypsum Products, Inc.
2. ClarkWestern Building Systems, Inc.
3. Consolidated Fabricators Corp.; Building Products Division.
4. Craco Mfg., Inc.
5. Dietrich Metal Framing; a Worthington Industries Company.
6. MarinoWARE.
7. Nuconsteel; a Nucor Company.
8. SCAFCO Corporation.
9. Southeastern Stud & Components, Inc.
10. Steel Construction Systems.
11. Steel Network, Inc. (The).

12. Steel Structural Systems.
13. Super Stud Building Products, Inc.
14. Telling Industries, LLC.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design cold-formed steel framing.

B. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads within limits and under conditions indicated.

1. Design Loads: As indicated on drawings or required by Code.
2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:

    a. Exterior Non-Load-Bearing Framing: Horizontal deflection of 1/240 of the wall height.
    b. Roof Rafter Framing: Vertical deflection of 1/240 of the horizontally projected span for live loads.

3. Design framing systems to provide for movement of framing members located outside the insulated building envelope without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:

    a. Upward and downward movement of 1/2 inch.

5. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

C. Cold-Formed Steel Framing Design Standards:

1. Floor and Roof Systems: AISI S210.
2. Wall Studs: AISI S211.
3. Headers: AISI S212.
4. Lateral Design: AISI S213.

D. AISI Specifications and Standards: Unless more stringent requirements are indicated, comply with AISI S100 and AISI S200.

E. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.3 COLD-FORMED STEEL FRAMING, GENERAL

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Steel Sheet: ASTM A 1003, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:

1. Grade: As required by structural performance.
2. Coating: G60.

C. Steel Sheet for Vertical Deflection Drift Clips: ASTM A 653, structural steel, zinc coated, of grade and coating as follows:

1. Grade: As required by structural performance.
2. Coating: G60.

2.4 EXTERIOR NON-LOAD-BEARING WALL FRAMING

A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: 0.0428 inch.
2. Flange Width: 1-5/8 inches.

B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: Matching steel studs.
2. Flange Width: 1-1/4 inches.

C. Vertical Deflection Clips: Manufacturer's standard bypass and/or head clips, capable of accommodating upward and downward vertical displacement of primary structure through positive mechanical attachment to stud web.

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. AllSteel & Gypsum Products, Inc.
b. ClarkWestern Building Systems, Inc.
c. Dietrich Metal Framing; a Worthington Industries company.
d. MarinoWARE.
e. Steel Network, Inc. (The).

D. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal loads and transfer them to the primary structure, and as follows:

1. Minimum Base-Metal Thickness: Matching steel studs
2. Flange Width: 1 inch plus the design gap for one-story structures.

E. Double Deflection Tracks: Manufacturer's double, deep-leg, U-shaped steel tracks, consisting of nested inner and outer tracks; unpunched, with unstiffened flanges.

1. Outer Track: Of web depth to allow free vertical movement of inner track, with flanges designed to support horizontal loads and transfer them to the primary structure, and as follows:

a. Minimum Base-Metal Thickness: Matching steel studs.
b. Flange Width: 1 inch plus the design gap for one-story structures.

2. Inner Track: Of web depth indicated, and as follows:

a. Minimum Base-Metal Thickness: Matching steel studs.
b. Flange Width: Insert dimension equal to sum of outer deflection track flange width plus 1 inch.

F. Drift Clips: Manufacturer's standard bypass or head clips, capable of isolating wall stud from upward and downward vertical displacement and lateral drift of primary structure through positive mechanical attachment to stud web and structure.

2.5 ROOF-RAFTER FRAMING

A. Steel Rafters: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: 0.0428 inch.
2. Flange Width: 1-5/8 inches, minimum.

2.6 SOFFIT FRAMING

A. Exterior Soffit Frame: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: 0.0428 inch.
2. Flange Width: 1-5/8 inches, minimum.

2.7 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:

1. Supplementary framing.
2. Bracing, bridging, and solid blocking.
3. Web stiffeners.
4. Anchor clips.
5. End clips.
6. Foundation clips.
7. Gusset plates.
8. Stud kickers and knee braces.

9. Joist hangers and end closures.
10. Hole reinforcing plates.
11. Backer plates.

2.8 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36, zinc coated by hot-dip process according to ASTM A 123.

B. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

C. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

D. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.

1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

E. Welding Electrodes: Comply with AWS standards.

2.9 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20 or MIL-P-21035B.

B. Shims: Load bearing, high-density multimonomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.

C. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.10 FABRICATION

A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.

1. Fabricate framing assemblies using jigs or templates.
2. Cut framing members by sawing or shearing; do not torch cut.
3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.

a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by no fewer than three exposed screw threads.

4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:

1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.

B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

C. Install load bearing shims or grout between the underside of load-bearing wall bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch to ensure a uniform bearing surface on supporting concrete or masonry construction.

D. Install sealer gaskets at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or joist locations.

3.3 INSTALLATION, GENERAL

A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed steel framing according to AISI S200 and to manufacturer's written instructions unless more stringent requirements are indicated.

C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.

1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.

D. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.

1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.

a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.

E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

G. Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.

H. Install insulation, specified in Section 072100 "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.

J. Erection Tolerances: Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:

1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.

B. Fasten both flanges of studs to top and bottom track unless otherwise indicated. Space studs as follows:

1. Stud Spacing: 16 inches or as required by wall system.

C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.

D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.

1. Install single deep-leg deflection tracks and anchor to building structure.
2. Install double deep-leg deflection tracks and anchor outer track to building structure.
3. Connect vertical deflection clips to bypassing studs and anchor to building structure.
4. Connect drift clips to cold-formed metal framing and anchor to building structure.

E. Install horizontal bridging in wall studs, spaced vertically in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.

1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within [**12 inches**] [**18 inches**] of single deflection track. Install a combination of bridging and stud or stud-track solid blocking of width and thickness matching studs, secured to stud webs or flanges.

a. Install solid blocking at centers indicated on Shop Drawings.

2. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
3. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.

F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.5 JOIST INSTALLATION

A. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on Shop Drawings.

B. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.

1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches.
2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on Shop Drawings.

C. Space joists not more than 2 inches from abutting walls, and as follows:

1. Joist Spacing: 16 inches or as required by design.

D. Frame openings with built-up joist headers consisting of joist and joist track, or another combination of connected joists if indicated.

E. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement, or as indicated on Shop Drawings.

1. Install web stiffeners to transfer axial loads of walls above.

F. Install bridging at intervals indicated on Shop Drawings. Fasten bridging at each joist intersection as follows:

1. Bridging: Cold-rolled steel channel, welded or mechanically fastened to bottom flange of joists.
2. Bridging: Joist-track solid blocking of width and thickness indicated, secured to joist webs.
3. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs.

G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.

H. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

3.6 FIELD QUALITY CONTROL

A. Inspection: Owner will engage a qualified inspection agency to perform inspections.

B. Field and shop welds will be subject to inspection.

C. Remove and replace work that does not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.7 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 054000

SECTION 055000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel items.

B. Prefabricated ladders and rails.

C. Downspout boots.

D. Cast iron tree gates.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 033000 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.

D. Section 034500 - Precast Architectural Concrete: Placement of metal fabrication in precast architectural concrete.

E. Section 042000 - Unit Masonry: Placement of metal fabrications in masonry.

F. Section 051200 - Structural Steel Framing: Structural steel column anchor bolts.

G. Section 055213 - Pipe and Tube Railings.

H. Section 099113 - Exterior Painting: Paint finish.

I. Section 099123 - Interior Painting: Paint finish.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.

B. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements; 2018.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

D. ASTM A48/A48M - Standard Specification for Gray Iron Castings; 2003 (Reapproved 2012).

E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2018.

F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.

G. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

H. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2013.

I. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.

J. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

K. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.

L. ASTM B211 - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire; 2012.

M. ASTM B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold-Finished Bar, Rod, and Wire (Metric); 2012.

N. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.

O. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2018.

P. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2012.

Q. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

R. AWS D1.2/D1.2M - Structural Welding Code - Aluminum; 2008.

S. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; 2018.

T. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

U. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

V. SSPC-SP 2 - Hand Tool Cleaning; 1982 (Ed. 2004).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

C. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.

D. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172. See Allstate Construction's bid package

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Slotted Channel Framing: ASTM A653/A653M, Grade 33.

F. Slotted Channel Fittings: ASTM A1011/A1011M.

G. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.

H. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

I. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

J. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Aluminum-Alloy Bars: ASTM B211 (ASTM B211M), 6061 alloy , T6 temper.

C. Bolts, Nuts, and Washers: Stainless steel.

D. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FABRICATED ITEMS

A. Ladders: Steel; in compliance with ANSI A14.3; with mounting brackets and attachments; galvanized finish.
   1. Side Rails: 3/8 x 2 inches members spaced at 20 inches.
   2. Rungs: one inch diameter solid round bar spaced 12 inches on center.
   3. Space rungs 7 inches from wall surface.
   4. Provide a lockable ladder access prevention system.

B. Bollards: Galvanized steel.

C. Sill Angles for Tempered Glass Railing Assemblies: ASTM A36/A36M steel angles with anchoring devices and sizes as indicated in shop drawings for railing assembly, drilled and tapped for fastener types, sizes, and spacing indicated, prime paint finish.

D. Recessed Mat Frames : As detailed; aluminum, mill finish.

2.05 DOWNSPOUT BOOTS

A. Downspout Boots: Smooth interior without boxed corners or choke points; include integral lug slots, integral cleanout, cleanout cover, and tamper proof fasteners.
   1. Configuration: Angular.
   2. Material: Cast iron; ASTM A48/A48M; casting thickness 3/8 inch (9.5 mm), minimum.
   3. Finish: Manufacturer's standard unpainted finish.
   4. Accessories: Manufacturer's standard stainless steel fasteners, integral neoprene gaskets, and rubber coupling.
   5. Manufacturers:
      a. Downspoutboots.com, a division of J. R. Hoe & Sons; ____: www.downspoutboots.com/#sle.

2.06 CAST IRON TREE GRATES

A. Cast Iron Tree Grates:
   1. Material: Cast iron; ASTM A48/A48M.
   2. Manufacturers:
      a. Neenah Foundry, a division of Neenah Enterprises, Inc; _____: www.nfco.com/#sle.

2.07 FINISHES - STEEL

A. Prime paint steel items.
   1. Exceptions: Galvanize items specified for galvanized finish.
   2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required.
   3. Exception: Do not paint items in drawings with "Blackened Steel" finish designation.

B. Prepare surfaces to be primed in accordance with SSPC-SP2.

C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

D. Prime Painting: One coat.

E. Blackend Steel:
   1. Product: Permalac Black, matte finish.
   2. Manufacturer: Peacock Laboratories
   3. Application: prepare surface and apply finish per manufacturer's written instructions.

F. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.

2.08 FINISHES - ALUMINUM

A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

2.09 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Field weld components as indicated on drawings.

D. Perform field welding in accordance with AWS D1.1/D1.1M.

E. Obtain approval prior to site cutting or making adjustments not scheduled.

F. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 055213
PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Stair railings and guardrails.

B. Free-standing railings at ramps.

C. Free-standing railings at steps.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 033000 - Cast-in-Place Concrete: Placement of anchors in concrete.

D. Section 042900 Reinforced Unit Masonry: Placement of anchors in masonry.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.

B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.

D. ASTM A204/A240M - Standard Specification for Chromium and Chromioum-Nickel Stainless Steel Plate, Sheet, and Strips for pressure vessels and for general applications; 2015b.

E. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube; 2012.

F. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube; 2020.

G. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications; 2013.

H. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2013.

I. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).

J. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.

B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 75 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

D. Dimensions: See drawings for configurations and heights.

E. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
   1. For anchorage to concrete, provide inserts to be cast into concrete, for welding anchors.
   2. For anchorage to masonry, provide brackets to be embedded in masonry, for welding anchors.

2.02 ALUMINUM MATERIALS

A. Aluminum Tube: Minimum wall thickness of 0.127 inch; ASTM B429/B429M, ASTM B241/B241M, or ASTM B483/B483M.

B. Solid Bars and Flats: ASTM B211 (ASTM B211M).

C. Welding Fittings: No exposed fasteners; machined aluminum.

D. Straight Splice Connectors: Concealed spigot; cast aluminum.

E. Exposed Fasteners: No exposed bolts or screws.

F. Surface cleaning: Aluminum surfaces must be clean and free of oil and grease before finish coating applied.

G. Surface Preparation: Remove surface aluminum oxide by sweep blasting or phospate treatment. Apply chemical pretreatment of surface (such as application of phosphoric acid) prior to powder coating to promote adhesion.

H. Finish: Powder-coated
   1. Color A - Black, gloss finish.

2.03 HAND RAIL SYSTEM (INTERIOR ONLY)

A. Steel Tube: ASTM A500/A500M, Grade B Cold formed structural tubing.

B. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

C. Exposed Fasteners: No exposed bolts or screws.

D. Finish: Factory or shop primed. Field painted.

2.04 STEEL RAILING SYSTEM

A. Steel Tube: ASTM A513 structural tubing.

B. Steel Pipe: ASTM A53, Type S, Grade A, galvanized finish.

C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

D. Exposed Fasteners: No exposed bolts or screws.

E. Finish: Factory or shop primed. Field Painted.

F. Straight Splice Connectors: Steel concealed spigots.

G. Galvanizing: In accordance with requirements of ASTM A123/A123M.
   1. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type II - Organic.

2.05 FABRICATION

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

D. Welded Joints:

1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

2.06 ALUMINUM FINISHES

A Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.

B. Color: To be selected by Architect from manufacturer's full line.

C. Touch-Up Materials: As recommended by coating manufacturer for field application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.

C. Apply one coat of bituminous paint to concealed aluminum surfaces that will be in contact with cementitious or dissimilar materials.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

C. Install railings in compliance with ADA Standards for accessible design at applicable locations.

D. Anchor railings securely to structure.

E. Field weld anchors as indicated on drawings. Touch-up welds with primer. Grind welds smooth.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonstructural dimension lumber framing.

B. Concealed wood blocking, nailers, and supports.

C. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management. Section 018113 Sustainable Design Requirements.

B. Section 018113 Sustainable Design Requirements.

C. Section 033000 - Cast-in-Place Concrete: Setting anchors in roofing concrete.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

B. AWPA U1 - Use Category System: User Specification for Treated Wood; 2012.

C. PS 20 - American Softwood Lumber Standard; 2010.

D. SPIB (GR) - Grading Rules; 2014.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.

C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. Species: Southern Pine, unless otherwise indicated.
   2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

B. Provide sustainably harvested wood; see Section 016000 - Product Requirements for requirements.

C. Provide wood harvested within a 500 mile radius of the project site.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: Southern Pine Inspection Bureau, Inc; SPIB (GR).

B. Sizes: Nominal sizes as indicated on drawings, S4S.

C. Moisture Content: S-dry or MC19.

2.03 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
   2. Anchors: Toggle bolt type for anchorage to hollow masonry.

2.04 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.

C. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

D. Provide the following specific nonstructural framing and blocking:
   1. Cabinets and shelf supports.
   2. Wall brackets.
   3. Grab bars.
   4. Chalkboards and marker board.
   5. Miscellaneous blocking.

3.03 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.04 CLEANING

A. Waste Disposal: See Section 017419 - Construction Waste Management and Disposal.
   1. Comply with applicable regulations.
   2. Do not burn scrap on project site.
   3. Do not burn scraps that have been pressure treated.
   4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.

B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 062000
FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Finish carpentry items.

B. Wood door frames, glazed frames.

C. Wood casings and moldings.

1.02 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

D. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

F. PS 1 - Structural Plywood; 2009.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with plumbing rough-in, electrical rough-in, installation of associated and adjacent components, and A/V equipment.

B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Minimum Scale of Detail Drawings: 3/4" = 1'-0".
   2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

C. Samples: Submit two samples of wood trim 8 inch long.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.

B. Protect from moisture damage.

C. Handle materials and products to prevent damage to edges, ends, or surfaces.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI (AWS) for Premium Grade.

B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.

C. Interior Woodwork Items:
   1. Moldings, Bases, Casings, and Miscellaneous Trim: White oak; prepare for transparent finish.
   2. Door, Glazed Light, and Door Frames: White oak; prepare for transparent finish.
   3. Window Casing: White oak; prepare for transparent finish.

2.02 SUSTAINABILITY CHARACTERISTICS

A. Provide sustainably harvested wood, certified or labeled; see Section 018113#.

B. Provide wood harvested within specified radius of project site; see Section 018113#.

2.03 LUMBER MATERIALS

A. Hardwood Lumber: White oak species, rift sawn, maximum moisture content of 6 percent ; with vertical grain , of quality suitable for transparent finish.

2.04 SHEET MATERIALS

A. Softwood Plywood, Not Exposed to View: Any face species, veneer core; PS 1 Grade A-B, glue type as recommended for application.

B. Hardwood Plywood: Face species as indicated, rift cut, balance matched, veneer core; HPVA HP-1 Front Face Grade AA, Back Face Grade 1, glue type as recommended for application.

2.05 PLASTIC LAMINATE MATERIALS

A. Plastic Laminate: NEMA LD 3; color as selected by Architect; finish as selected.

B. Laminate Backing Sheet: NEMA LD 3, BKL; undecorated plastic laminate.

C. Laminate Adhesive: Type recommended by laminate manufacturer to suit application; not containing formaldehyde or other volatile organic compounds.

2.06 FASTENINGS

A. Adhesive for factory-fabricated units: Manufacturer's recommended adhesive for application.

B. Fasteners: Of size and type to suit application; galvanized finish in concealed locations and stainless steel finish in exposed locations.

C. Concealed Joint Fasteners: Threaded steel.

D. Metal Z-Shaped Support Clips: Paired, cleated, structural anchorage components applied to back of finish carpentry items and walls for mounting.
   1. Material: Extruded aluminum.

2.07 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Wood Filler: Solvent base, tinted to match surface finish color.

2.08 HARDWARE

A. Countertop Support Brackets: Fixed, L-shaped, corner reinforced, face-of-stud mounting.
   1. Material: Steel.
      a. Finish: Manufacturer's standard, factory-applied, powder coat.
      b. Color: Black.

B. Vanity Brackets: Fixed, ADA-Compliant, face-of-stud mounting.
   1. Material: Steel; formed compound shapes.
      a. Finish: Manufacturer's standard, factory-applied, textured powder coat.
      b. Color: Black.

2.09 WOOD TREATMENT

A. Fire Retardant Treatment (FR-S Type): Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.

B. Provide identification on fire retardant treated material.

C. Redry wood after pressure treatment to maximum ____ percent moisture content.

2.10 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.

B. Cap exposed plastic laminate finish edges with material of same finish and pattern.

C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

E. Apply laminate backing sheet to reverse face of plastic laminate finished surfaces.

2.11 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.

D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 12, Polyurethane, Water-based.
      b. Sheen: Semigloss.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 064100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Countertops.

C. Hardware.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 123600 - Countertops.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

C. BHMA A156.9 - American National Standard for Cabinet Hardware; 2010.

D. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Scale of Drawings: 1/4" to , minimum.

C. Product Data: Provide data for hardware accessories.

D. Sustainable Design Submittal: Documentation for sustainably harvested wood-based components.

1.06 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
   1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
   2. Single Source Responsibility: Provide and install this work from single fabricator.

1.07 MOCK-UP

A. Provide mock-up of typical base cabinet and countertop, including hardware and finishes.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.09 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.

B. Wood Veneer Faced Cabinet:
   1. Exposed Surfaces: HPVA HP-1 Grade C, White Oak, rift cut and comb grain, book-matched.
   2. Semi-Exposed Surfaces: HPVA HP-1 Grade C, White Oak, rift cut and comb grain, book-matched.
   3. Concealed Surfaces: hardwood veneer.

C. Cabinets:
   1. Door and Drawer Front Edge Profiles: Square edge with thin applied band.
   2. Casework Construction Type: Type A - Frameless.
   3. Interface Style for Cabinet and Door: Style 1 - Overlay; flush overlay.
   4. Grained Face Layout for Cabinet and Door Fronts: Style and Rail, all Grades.
      a. Premium Grade:
         1) Provide vertical run and match for doors, drawer fronts and false fronts within each cabinet unit.
   5. Adjustable Shelf Loading: 50 lbs. per sq. ft.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood, certified or labeled as specified in Section 018113 #.

C. Provide wood harvested within a 500 mile radius of the project site.

D. Wood fabricated from timber recovered from riverbeds or otherwise abandoned is permitted, unless otherwise noted, provided it is clean and free of contamination; identify source; provide lumber re-graded by an inspection service accredited by the American Lumber Standard Committee, Inc.

E. Hardwood Edgebanding: Use solid hardwood edgebanding matching species, color, grain, and grade for exposed portions of cabinetry.

2.03 COUNTERTOPS

A. Countertops are specified in Section 123600.

2.04 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Fasteners: Size and type to suit application.

C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

D. Concealed Joint Fasteners: Threaded steel.

E. Grommets: Standard plastic or painted metal grommets for cut-outs, in color to match adjacent surface.

2.05 HARDWARE

A. Hardware: BHMA A156.9, types as indicated for quality grade specified.

B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self rests, satin chrome finish, for nominal 1 inch spacing adjustments.

C. Fixed Standard Shelf, Countertop, and Workstation Brackets:
   1. Material: Steel.

2. Color: Black.

D. Fixed Specialty Vanity Brackets:
1. Material: Steel.
2. Color: Black.

E. Countertop Supports:
1. Basis of Design: Concealed workstation bracket (length varies) as manufactured by A&M Hardware, Inc.
2. Material: Steel
3. Finish/Color: {CH#304715}.
4. Manufacturers:

F. Drawer and Door Pulls installed at all operable cabinet drawers and doors: 5" decorative pull.
1. Basis of Design Product: Enlivity pull manufactured by Amerock.
2. Finish: Satin nickel.

G. Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with satin finish.

H. Drawer Slides:
1. Type: Full extension.
2. Static Load Capacity: Heavy Duty grade.
3. Mounting: Side mounted.
4. Stops: Integral type.
5. Features: Provide soft-close type.

I. Hinges: European style concealed self-closing type, steel with satin finish.

2.06 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

D. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:
1. Provide sequence matching across each elevation.
2. Carry figure of cabinet fronts to toe kicks.

E. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Seal cut edges.

2.07 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.

C. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
1. Transparent:
a. System - 12, Polyurethane, Water-based.
b. Sheen: Semigloss.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

3.02 INSTALLATION

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

E. Secure cabinets to floor using appropriate angles and anchorages.

F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

A. Adjust installed work.

B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 064200
WOOD PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Custom wood veneer paneling.

B. Shop finishing.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 018113-Sustainable Design Requirements.

C. Section 061000 - Rough Carpentry: Grounds and concealed blocking.

D. Section 099123 - Interior Painting: Field finishing.

E. Section 099300 - Staining and Transparent Finishing: Field finishing.

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

B. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.

C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

E. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on fire-retardant treatment materials and application instructions.

C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Provide plan of panel number sequencing.
   2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

D. Samples: Submit two samples of finished plywood, 12" x 12" in size, illustrating wood grain and specified finish.

E. Samples: Submit two samples of wood trim, 12 inch long.

F. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
   1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
   2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

B. Quality Certification:
   1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: www.awiqcp.org/#sle.
   2. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.

3. Provide designated labels on shop drawings as required by certification program.
4. Provide designated labels on installed products as required by certification program.
5. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 MOCK-UP

A. Construct mock-up, four feet long by three feet wide, illustrating full panel sheet, edge trim, joint trim, applied finish , and reveals.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect work from moisture damage.

B. Do not deliver wood materials to project site until building is fully enclosed and interior temperature and humidity are in accordance with recommendations of AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

PART 2 PRODUCTS

2.01 PANELING

A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless otherwise indicated.

B. Flat Paneling:
1. Species: White oak.
2. Cut: Rift cut.
3. Panels: Veneer of full width and balanced sequence matched.
4. Visible Edges and Reveals: Match faces.
5. Outside Corners: Mitered and splined.

2.02 WOOD-BASED MATERIALS - GENERAL

A. Provide sustainably harvested wood, certified or labeled as specified in Section 018113.

B. Provide wood harvested within a 500 mile radius of the project site.

C. Hardwood Plywood: HPVA HP-1 Grade A; veneer core, type of glue recommended for application; of grain quality suitable for transparent finish.

D. Lumber: Maximum moisture content of 6 percent; with vertical grain , of quality suitable for transparent finish.

2.03 ADHESIVES AND FASTENERS

A. Adhesives: Type suitable for intended purpose, complying with applicable air quality regulations.

B. Fasteners: Of size and type to suit application; galvanized finish in concealed locations and stainless steel finish in exposed locations.

2.04 WOOD-TREATMENT PROCESSES

A. Fire-Retardant Treatment (FR-S Type) for Lumber: Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.

2.05 FABRICATION

A. Shop prepare and identify panels for grain matching during site erection.

B. Prepare panels for delivery to site, permitting passage through building openings.

C. Finish exposed edges of panels as specified by grade requirements.

D. When necessary to cut and fit on site, provide materials with ample allowance for cutting and scribing.

2.06 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.

D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 12, Polyurethane, Water-based.
      b. Stain: As selected by Architect.
      c. Sheen: Semigloss.

2.07 ACCESSORIES

A. Lumber for Shimming, Blocking: Softwood lumber of _____ species.

B. Wood Filler: Tinted to match surface finish color.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated on shop drawings.

B. Verify adequacy of backing and support framing.

C. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Do not begin installation until wood materials have been fully acclimated to interior conditions.

C. Set and secure materials and components in place, plumb and level, using concealed fasteners wherever possible.

D. Where necessary to cut and fit on site, scribe work abutting other components. Do not use additional overlay trim to conceal gaps.

E. Touch up damaged finish to match original, using materials provided by fabricator; replace components that cannot be refinished like new.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

SECTION 070553
FIRE AND SMOKE ASSEMBLY IDENTIFICATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Identification markings for fire and smoke rated partitions, and fire rated walls.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management. Section 018113 Sustainable Design Requirements.

B. Section 018113 Sustainable Design Requirements.

C. Section 099123 - Interior Painting: Paint finish.

1.03 REFERENCE STANDARDS

A. Florida Building Code, Building (FBC-B), 8th Edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's printed product literature for each type of marking, indicating font, foreground and background colors, wording, and overall dimensions.

C. Schedule: Completely define scope of proposed marking. Indicate location of affected walls and partitions, and number of markings.

1.05 FIELD CONDITIONS

A. Do not install painted markings when ambient temperature is lower than recommended by coating manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Partition Identification Labels:
   1. Fire Wall Signs, Inc: www.firewallsigns.com.
   2. Safety Supply Warehouse, Inc: www.safetysupplywarehouse.com.

2.02 FIRE AND SMOKE ASSEMBLY IDENTIFICATION

A. Regulatory Requirements: Comply with "Markings and Identification" requirements of "Fire-Resistance Ratings for Fire Tests" chapter of the Florida Building Code (FBC-B).

B. Adhered Fire and Smoke Assembly Identification Signs: Printed vinyl sign with factory applied adhesive backing.

C. Languages: Provide all markings in English.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install adhered markings in accordance with manufacturer's instructions.

B. Install markings as required by Florida Building Code (FBC-B)

C. Install neatly, with horizontal edges level.

D. Protect from damage until Substantial Completion; repair or replace damaged markings.

END OF SECTION

SECTION 071113
BITUMINOUS DAMPPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Bituminous dampproofing.

1.02 REFERENCE STANDARDS

A. ASTM D1187/D1187M - Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal; 1997 (Reapproved 2011).

B. ASTM D1227 - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing; 2013.

C. NRCA (WM) - The NRCA Waterproofing Manual; 2005.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide properties of primer, bitumen, and mastics.

C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years experience.

1.05 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application until dampproofing has cured.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: BASF; Masterseal 615.

2.02 BITUMINOUS DAMPPROOFING

A. Bituminous Dampproofing: Cold-applied water-based emulsion; asphalt with mineral colloid or chemical emulsifying agent; with or without fiber reinforcement; asbestos-free; suitable for application on vertical and horizontal surfaces.
   1. Composition - Vertical Application: ASTM D1227 Type III or ASTM D1187/D1187M Type I.
   2. VOC Content: Not more than permitted by local, State, and federal regulations.

B. Primers, Mastics, and Related Materials: Type as recommended by dampproofing manufacturer.

2.03 ACCESSORIES

A. Drainage Panel: 1/4 inch thick formed plastic, hollowed sandwich.

B. Protection Board: Type recommended by waterproofing manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions are acceptable prior to starting this work.

B. Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.

C. Verify that items penetrating surfaces to receive dampproofing are securely installed.

3.02 APPLICATION

A. Perform this work in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.

B. Prime surfaces in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.

C. Prime surfaces at a rate approved by manufacturer for application indicated, and allow primer to dry thoroughly.

D. Apply bitumen by spray application.

E. Apply bitumen at a temperature limited by equiviscous temperature (EVT) plus or minus 25 degrees F; do not exceed finish blowing temperature for four hours.

F. Apply bitumen in one coat, continuous and uniform, at a rate of 30 sq ft/gal per coat.

G. Seal items watertight with mastic, that project through dampproofing surface.

H. Place drainage panel directly over dampproofing, butt joints, place to encourage drainage downward.

I. Place protection board over drainage panel, butt joints, and adhere with mastic.

J. Scribe and cut boards around projections, penetrations, and interruptions.

END OF SECTION

SECTION 072100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation over roof deck, exterior wall behind _____ wall finish, and below roof tile..

B. Batt insulation in exterior construction.

C. Batt insulation for filling crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.

B. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation; 2015.

C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.

D. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2014.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

F. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.

G. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.05 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation Inside Prefabricated Wall Panels: Extruded polystyrene (XPS) board.

B. Insulation in Metal Framed Walls: Batt insulation with no vapor retarder.

C. Insulation Over Roof Deck: Extruded polystyrene (XPS) board.

2.02 FOAM BOARD INSULATION MATERIALS

A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
   1. Classifications:
      a. Type I: Faced with aluminum foil on both major surfaces of the core foam.
         1) Class 1 - Non-reinforced core foam.

2) Compressive Strength: 16 psi, minimum.
3) Thermal Resistance, R-value: At 1-1/2 inch thick; 9.0 at 75 degrees F.

2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Water Vapor Permeance: 1.2 perm, maximum, at 1 inch thickness, and when tested in accordance with ASTM E96/E96M, desiccant method.
5. Board Size: 48 inch by 96 inch.
6. Board Thickness: 2.0 inch.

B. Polyisocyanurate Board Insulation: Rigid cellular foam, complying with ASTM C1289; Type V, fire-retardant-treated plywood one face, glass fiber mat facer one face, Class 3.
1. Classifications:
a. Type V: Faced with oriented strand board (OSB) or plywood on one major surface of core foam and glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on other major surface of core foam.
1) Compressive Strength: 16 psi, minimum.
2) Thermal Resistance, R-value: At 1-1/2 inch thick; 6.2 at 75 degrees F.
2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Compressive Strength: 25 psi
5. Plywood Thickness: 5/8 inch.
6. Thermal Resistance: R-value of 5 / inch.

2.03 BATT INSULATION MATERIALS

A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
4. Thermal Resistance: R-value of .

2.04 ACCESSORIES

A. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inch wide.

B. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.

C. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.

D. Nails or Staples: Steel wire; electroplated or galvanized; type and size to suit application.

E. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT EXTERIOR WALLS

A. Install boards horizontally on walls.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

C. Tape insulation board joints.

3.03 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. Tape insulation batts in place.

F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

3.04 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 072119
FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Foamed-in-place insulation.
   1. In underside of roofs.

B. Protective intumescent coating.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

C. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials; 2013.

D. FM 4880 - Approval Standard for Class 1 Fire Rating of Building Panels or Interior Finish Materials; 2015.

E. NFPA 275 - Standard Method of Fire Tests for the Evaluation of Thermal Barriers; 2022.

F. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2015.

G. UL 1040 - Standard for Safety Fire Test of Insulated Wall Construction; Current Edition, Including All Revisions.

H. UL 1715 - Standard for Safety Fire Test of Interior Finish Material; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide product description, insulation properties, overcoat properties, and preparation requirements.

C. Certificates: Certify that products of this section meet or exceed specified requirements.

D. Manufacturer's Installation Instructions: Indicate special procedures, and perimeter conditions requiring special attention.

E. Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

F. Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of all contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified, with minimum three years documented experience, and approved by manufacturer.

1.06 MOCK-UPS

A. Locate where directed.

B. Mock-up may remain as part of work.

1.07 FIELD CONDITIONS

A. Do not apply foam when temperature is below that specified by the manufacturer for ambient air and substrate.

B. Do not apply foam when temperature is within 5 degrees F of dew point.

PART 2 PRODUCTS

2.01 MATERIALS

A. Foamed-In-Place Insulation: Low-density, flexible, open cell, water vapor permeable polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
   1. Basis of Design: 10" thick min. - R-Value 38
   2. Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.
      a. Fire Protection: Provide 15-minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.
   3. Thermal Resistance: R-value of 3.0, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
   4. Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
   5. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
   6. Manufacturers:
      a. BASF Corporation; ENERTITE NM: www.spf.basf.com/#sle.
      b. Covestro, LLC; Bayseal OC: www.covestro.com/sprayfoam/#sle.
      c. Icynene Inc; Icynene Classic Plus: www.icynene.com/#sle.
      d. Substitutions: See Section 016000 - Product Requirements.

2.02 ACCESSORIES

A. Primer: As required by insulation manufacturer.

B. Protective Coating: Intumescent coating of type recommended by insulation manufacturer and as required to comply with applicable codes.
   1. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
   2. Color: As indicated on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify work within construction spaces or crevices is complete before insulation application.

B. Verify that surfaces are clean, dry, and free of matter that may inhibit insulation adhesion.

3.02 PREPARATION

A. Verify work within construction spaces or crevices is complete prior to insulation application.

B. Verify that surfaces are clean, dry, and free of matter that may inhibit insulation or overcoat adheasion.

C. Apply primer in accordance with manufacturer's instructions.

3.03 APPLICATION

A. Apply insulation in accordance with manufacturer's instructions.

B. Apply insulation by spray method, to a uniform monolithic density without voids.

C. Apply to a minimum cured thickness of 10 inch.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-05-05

SECTION 074113
METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. The work includes, but is not necessarily limited to, furnishing and installation of all preformed metal roofing, and accessories as indicated on the drawings and specified herein.

B. Metal roof panel system of preformed steel panels.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 072100 - Thermal Insulation: Rigid roof insulation.

D. Section 079200 - Joint Sealants: Sealing joints between metal roof panel system and adjacent construction.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

B. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.

C. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2017).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Summary of test results, indicating compliance with specified requirements.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Specimen warranty.

C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
   1. Show work to be field-fabricated or field-assembled.

D. Verification Samples: For each roofing system specified, submit samples of minimum size 12 inches square, representing actual roofing metal, thickness, profile, color, and texture.

E. Test Reports: Indicate compliance of metal roofing system to specified requirements.

F. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section and with at least five years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.

B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

RECEIVED ALLSTATE CONSTRUCTION 2026-05-05

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

C. Special Warranty: Provide 20 warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Metal Roof Panel Manufacturers:
   1. Berridge Manufacturing Company; Double-Lock Zee-Lock Panel: www.berridge.com/#sle.

2.02 PERFORMANCE REQUIREMENTS

A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
   1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
   2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
   3. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.03 STRUCTURAL METAL ROOF PANELS

A. General: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

B. Structural Metal Panels: Factory-formed panels with factory-applied finish.
   1. Steel Panels:
      a. Steel Thickness: Minimum 22 gauge, 0.03 inch.
   2. Profile: Standing seam, with minimum 2-inch seam height; concealed fastener system for field seaming with special tool.
   3. Width: Maximum panel coverage of 16 inches.

2.04 ATTACHMENT SYSTEM

A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.05 SECONDARY FRAMING

A. Miscellaneous Secondary Framing: Light gauge steel framing incidental to structural supports; fabricated from steel sheet.

B. Framing Material: ASTM A1011/A1011M Designation SS steel sheet.
   1. Profile: Manufacturer's standard cee, zee, asymmetrical zee, hat channel, plain channel, single slope eave strut, double slope eave strut, and angle.
   2. Thickness: 12 gauge, 0.1046 inch.
   3. Finish: Galvanized per ASTM A653/A653M, G90.

C. Framing Connectors: Factory-made formed steel sheet, ASTM A653/A653M SS Grade 50, with G60/Z180 hot dipped galvanized coating and factory punched holes.

2.06 FABRICATION

A. Panels: Provide factory or field fabricated panels with applied finish and accessory items, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.

2.07 ACCESSORIES

A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.

B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.

C. Sealants:
   1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
   2. Concealed Sealant: Non-curing butyl sealant or tape sealant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.

B. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.

C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.

D. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

E. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
   1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
   2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.

B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.

C. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
   1. Form weathertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by panel manufacturer.

3.04 CLEANING

RECEIVED ALLSTATE CONSTRUCTION 2026-05-05

A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-05-05

SECTION 074213
METAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Painted Metal Plate Wall Panels.

B. Flat Lock Tile Metal Wall Panels.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 072100 - Thermal Insulation.

D. Section 072500 - Weather Barriers: Weather barrier under wall panels.

E. Section 079200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

1.03 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

1.04 SUBMITTALS

A. Shop Drawings: Indicate dimensions, layout, joints, construction details, methods of anchorage.

B. Samples: Submit two samples of wall panel and soffit panel, 4 inch by 4 inch in size illustrating finish color, sheen, and texture.

C. Installer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years ofdocumented experience.

B. Installer Qualifications: Company specializing in installing products of the type specified in this section with minimum three years of documented experience.

1.06 MOCK-UP

A. Construct mock-up, 6 feet long by 4 feet wide; include panel system, glazing, attachments to building frame, associated vapor retarder and air seal materials, weep drainage system, sealants and seals, related insulation in mock-up.

B. Mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.

C. Prevent contact with materials that may cause discoloration or staining of products.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion for degradation of panel finish, including color fading caused by exposure to weather.

C. Correct defective work within a five year period after Date of Substantial Completion, including defects in water tightness and integrity of seals.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Wall Panels - Concealed Fasteners:
   1. Basis of design: Berridge Manufacturing Company; Fluted Fascia: www.berridge.com/#sle.

B. Metal Soffit Panels:
   1. Basis of Design: Berridge Manufacturing CompanyFluted Fascia: www.berridge.com/#sle.

2.02 MANUFACTURED METAL PANELS

A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
   1. Provide exterior panels.
   2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
   3. Maximum Allowable Deflection of Panel: L/180 for length(L) of span.
   4. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
   5. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
   6. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
   7. Provide continuity of air barrier and vapor retarder seal at building enclosure elements in accordance with materials specified in Section 072500.

B. Exterior Wall Panels:
   1. Profile: Vertical; style as indicated.
   2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous gaskets.
   3. Material: Precoated steel sheet, 24 gage, .024 inch minimum thickness.
   4. Panel Width: 34 1/2 inches.
   5. Color: As selected by Architect from manufacturer's full line.

C. Soffit Panels:
   1. Profile: Style as indicated.
   2. Material: Precoated steel sheet, 24 gage, .024 inch minimum thickness.
   3. Color: As selected by Architect from manufacturer's standard line.

D. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.

E. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

F. Anchors: Galvanized steel.

2.03 MATERIALS

A. Precoated Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, Structural Steel (SS) or Forming Steel (FS), with G90/Z275 coating; continuous coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

2.04 FINISHES

A. Exposed Surface Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.

B. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.

2.05 ACCESSORIES

A. Concealed Sealants: Non-curing butyl sealant or tape sealant.

B. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.

C. Fasteners: Manufacturer's standard type to suit application;_____ , steel, hot dip galvanized._____

D. Field Touch-up Paint: As recommended by panel manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive panels.

3.02 INSTALLATION

A. Install panels on walls in accordance with manufacturer's instructions.

B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint. Allow to dry prior to installation.

C. Fasten panels to structural supports; aligned, level, and plumb.

D. Locate joints over supports.

E. Provide expansion joints where indicated.

F. Use concealed fasteners unless otherwise approved by Architect.

G. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.03 TOLERANCES

A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.

B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

3.04 CLEANING

A. Remove site cuttings from finish surfaces.

B. Remove protective material from wall panel surfaces.

C. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

SECTION 075419
POLYVINYL-CHLORIDE ROOFING (PVC)

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

1.02 SECTION 017419 CONSTRUCTION WASTE MANAGEMENT.

A. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. ASTM D751 - Standard Test Methods for Coated Fabrics; 2006 (Reapproved 2011).

B. ASTM D7877 - Standard Guide for Electronic Methods for Detecting and Locating Leaks in Roofing and Waterproofing Membranes; 2025.

C. ASTM D8231 - Standard Practice for the Use of a Low Voltage Electronic Scanning System for Detecting and Locating Breaches in Roofing and Waterproofing Membranes; 2019.

D. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces; 2011.

E. ISO 9001 - Quality Management Systems-Requirements; 2008.

F. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

G. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.

1.04 DESCRIPTION OF WORK

A. Project Type: Repair

B. Deck: Existing Lightweight Insulating Concrete

C. Base Sheet: Parabase FS, mechanically fastened.
   1. Provide Delegated Engineering for Fastening Pattern for all Wind Zones.

D. Base Ply: Paradiene 20 TG, torch applied.

E. Cap Ply: 60 mil Parasolo KEE Fleeceback Roof Membrane

F. Flashing System: 60 mil Parasolo KEE Fleeceback over Paradiene 20 TG.

G. Supplemental Flashing System: Parapro 123 Flashing System

1.05 SUBMITTALS

A. Product Data: Provide data for roofing system materials, components, and accessories.

B. Shop Drawings: Include roof plans and details showing terminations, flashings, penetrations, attachment methods, tie-ins, and interface with adjacent work.

C. Samples for Verification: Submit two samples 6 by 6 inches (152 by 152 mm) in size of roof membrane and flashing sheets.

D. Wind Uplift Resistance Submittal: Indicate compliance with wind uplift performance requirements.

E. Manufacturer's qualification statement.
   1. Letter from the primary roofing manufacturer stating that the proposed application will comply with the manufacturer's requirements in order to qualify the project for the specified guarantee.

F. Installer's qualification statement.
   1. Letter from the proposed primary roofing manufacturer confirming that the bidder is an acceptable Contractor authorized to install the proposed system.

1.06 QUALITY ASSURANCE

A. Acceptable Products: Primary roofing products, including each type of sheet, all manufactured in the United States, shall be supplied by a single manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. The primary roofing products shall have maintained a consistent composition for a minimum of five years.

B. Product Quality Assurance Program: Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third-party auditor under the ISO 9001 audit process. A certificate of analysis (COA) for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.

C. Agency Approvals: The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.

D. Underwriters Laboratories Class A acceptance of the proposed roofing system (including mopping asphalt or cold adhesive) without additional requirements for gravel or coatings.

E. Evidence by an accredited independent testing agency or agencies that the roof configuration meets a design wind load pressure of - 60 psf or greater.

F. Acceptable Contractor: Contractor shall have a minimum of 2 years' experience in successfully installing the same or similar roofing materials and be certified in writing by the roofing materials manufacturer to install the primary roofing products.

G. Scope of Work: The work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof installation in accordance with this specification. Comply with the latest written application instructions of the manufacturer of the primary roofing products. In addition, application practice shall comply with requirements and recommendations contained in the latest edition of the National Roofing Contractor's Association (NRCA) Roofing Manual as published by the National Roofing Contractor's Association.

H. Local Regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.

I. Manufacturer Requirements: Ensure that the primary roofing materials manufacturer provides direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.

1.07 WARRANTY OR GUARANTEE

A. Enhanced Material Warranty: Provide membrane manufacturer's limited warranty agreeing to replace material that leaks due to manufacturing defects and cost of labor to correct leaks within 25 years. Complete forms in Owner's name and register with manufacturer.

B. System Guarantee: Provide manufacturer's system guarantee. Complete forms in Owner's name and register with manufacturer.
   1. Term: 25 years.
   2. Liability Limit: No dollar limit on covered repairs.

C. Extended Correction Period: Correct defective work within 5-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design:
   1. Siplast; 1000 Rochelle Blvd.; Irving, TX 75062; Toll Free Tel: 800-922-8800
   2. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

2.02 PERFORMANCE REQUIREMENTS:

1. General: Roofing system to withstand specified uplift pressures, thermally induced movement, and exposure to ordinary weather conditions.
2. Material Compatibility: Provide roofing materials and accessories compatible with one another under conditions of service and application, as demonstrated by roof membrane manufacturer based on testing and field experience.
3. Wind Uplift Resistance: Design to withstand wind uplift forces in accordance with applicable local building code requirements as demonstrated by roofing manufacturer's independent testing.
4. Solar Reflectance Index (SRI): Three-year-aged SRI not less than 86, when calculated in accordance with ASTM E1980.
5. Roof Covering External Fire Resistance Classification: Comply with UL (DIR) Class A when tested per ANSI/UL 790.

2.03 ROOFING SYSTEM ASSEMBLY PRODUCTS

A. Base Sheet: A fiberglass reinforced, asphalt coated sheet with a polyolefin film backing, having a minimum weight of 20 lb/sq. The sheet shall conform to ASTM D 4601, Type II requirements.
   1. Basis of Design: Siplast Parabase FS

B. Roof Membrane Ply (fleece-back): A roof membrane assembly consisting of one ply of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Then one ply of a prefabricated, polyester scrim-reinforced, polyvinyl chloride (PVC) membrane formulated with an Elvaloy® Ketone Ethylene Ester (KEE) copolymer, applied over a prepared substrate. The roof membrane shall have a factory-adhered polyester fleece backing on the bottom side. The roof membrane shall meet or exceed to the minimum criteria established by ASTM D4434 Standard Specification for Poly(Vinyl Chloride) Sheet Roofing (Type III). The minimum thickness of the roof membrane shall be 60 mils 0.06 inchas established by ASTM D751 Standard Test Method for Coated Fabrics. The minimum thickness of the roof membrane over the reinforcement scrim shall be 27 mils (0.03 inch), as established by ASTM D7635 Standard Test Method for Measurement of Thickness of Coatings Over Fabric Reinforcement.
   1. Basis of Design: Siplast Paradiene 20 TG & Parasolo PVC KEE Fleeceback hybrid roof system – 60 mil

C. Flashing Ply (fleece-back): A roof membrane consisting of one ply of a prefabricated, polyester scrim-reinforced, polyvinyl chloride (PVC) membrane formulated with an Elvaloy® Ketone Ethylene Ester (KEE) copolymer, applied over a prepared substrate. The flashing membrane shall have a factory-adhered polyester fleece backing on the bottom side. The flashing system shall meet or exceed to the minimum criteria established by ASTM D4434 Standard Specification for Poly(Vinyl Chloride) Sheet Roofing (Type III). The minimum thickness of the flashing membrane shall be 60 mils 0.06 inchas established by ASTM D751 Standard Test Method for Coated Fabrics. The minimum thickness of the flashing membrane over the reinforcement scrim shall be 27 mils (0.03 inch) as established by ASTM D7635 Standard Test Method for Measurement of Thickness of Coatings Over Fabric Reinforcement.
   1. Basis of Design: Siplast Paradiene 20 TG & Siplast Parasolo PVC KEE Fleeceback roof system – 60 mil

D. Catalyzed Acrylic Resin Flashing System: A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.
   1. Parapro 123 Flashing System by Siplast; Irving, TX

2.04 ROOFING ACCESSORIES

A. Bituminous Cutback Materials for SBS Modified Bitumen Temporary Roof

1. Primer: An asphalt/solvent blend for use with SBS modified bitumen membrane ply applications meeting ASTM D 41, South Coast Air Quality District and Ozone Transport Commission requirements.
    a. Siplast PA-917 LS Primer by Siplast; Irving, TX
2. Primer: An asphalt, solvent blend for use with SBS modified bitumen membrane ply applications conforming to ASTM D 41 requirements.
    a. Siplast PA-1125 Asphalt Primer by Siplast; Irving, TX
3. Mastics: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D 4586 Type II requirements.
    a. Siplast PA-1021 Plastic Cement by Siplast; Irving, TX

B. Roofing Membrane Adhesives
1. Fleeceback PVC Membrane Adhesive: A two-part low-rise polyurethane foam adhesive designed for bonding fleece-backed PVC single-ply roofing membranes to various roofing substrates.
    a. Parafast T Adhesive by Siplast; Irving, TX

C. Sealant: A solvent-based, UV resistant synthetic elastomeric sealant for the completion of details.
1. Parasolo Flexseal Caulk Grade by Siplast; Irving, TX

D. Water Block: A single component butyl-based high viscosity sealant for sealing the flashing membrane to the substrate behind exposed termination bars, flashing boots, drain flanges.
1. Parasolo Water Block by Siplast; Irving, TX

E. Membrane Conditioner/Cleaner: A solvent-based agent used to clean exposed or contaminated seams prior to heat welding to remove any residue that may compromise lap welding.
1. Parasolo Membrane Conditioner by Siplast; Irving, TX

F. Membrane Flashing Accessories
1. Cover Patches at T-Joints: A molded PVC membrane used to reinforce the T-joints of the specified PVC membrane system.
    a. Parasolo KEE T-Joint Cover Patch by Siplast; Irving, TX
2. Pre-formed Boots: A molded PVC membrane used to flash pipe and conduit penetrations having a diameter of 1 to 6 inches (25 to 152 mm). The pre-formed boots shall be hot-air welded directly to the PVC roof membrane.
    a. Parafast KEE Conical Pipe Boot by Siplast; Irving, TX
3. Outside Corner Flashing: A molded PVC membrane designed to accommodate outside corners of base and curb flashing details. The molded flashing component shall be hot-air welded directly to the specified PVC membrane.
    a. Parasolo KEE Outside Corner by Siplast; Irving, TX
4. Inside Corner Flashing: A molded PVC membrane designed to accommodate inside corners of base and curb flashing details. The molded flashing component shall be hot-air welded directly to the specified PVC membrane.
    a. Parasolo KEE Inside Corner by Siplast; Irving, TX
5. Fluted Corner Flashing: A molded PVC membrane designed to accommodate corners of base and curb flashing details having dimensions that cannot be addressed using standard pre-formed PVC inside or outside corner flashing components. The molded flashing component shall be hot-air welded directly to the specified PVC membrane.
    a. Parasolo KEE Fluted Corner by Siplast; Irving, TX
6. Flashing Strip: An 8-inch wide molded PVC membrane strip designed for general repairs, end laps, and to strip-in PVC coated metal flanges.
    a. Parasolo KEE Flashing Strip by Siplast; Irving, TX
7. Termination Bar with Receiver: An extruded aluminum termination bar with rounded edges and an angled sealant receiver and lower leg bulb stiffener, having factory-punched, slotted holes spaced on 6-inch 5.98 inch centers.

a. Parafast Lip Termination Bar 6 inch On Center by Siplast; Irving, TX

8. Termination Bar with Receiver: An extruded aluminum termination bar with rounded edges and an angled sealant receiver and lower leg bulb stiffener, having factory-punched, slotted holes spaced on 8-inch 7.99 inch centers.
   a. Parafast Lip Termination Bar 8 inch On Center by Siplast; Irving, TX
9. Flat Termination Bar: A flat, extruded aluminum termination bar with rounded edges, having factory-punched, slotted holes spaced on 6-inch 5.98 inch centers.
   a. Parafast Flat Termination Bar 6 inch On Center by Siplast; Irving, TX
10. Flat Termination Bar: A flat, extruded aluminum termination bar with rounded edges, having factory-punched, slotted holes spaced on 8-inch 7.99 inch centers.
    a. Parafast Flat Termination Bar 8 inch On Center by Siplast; Irving, TX
11. PVC Coated Metal: 4-foot by 10-foot sheets of 0.040 aluminumhaving a factory-laminated PVC coating, used for fabrication into metal gravel stop/drip edge components, base flashings, sealant pans, and scupper sleeves.
    a. Parafast PVC Coated Metal by Siplast; Irving, TX

G. Fasteners
   1. Base Sheet Fasteners: Base sheet fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable base sheet fasteners for specific substrate types are listed below.
      a. Lightweight Concrete Substrates
         1) A single unit, precision formed, electro zinc coated steel fastener having a 2.7 inch diameter rib reinforced cap and 1.7 inch long rectangular legs, designed to expand when fully driven into the lightweight concrete. Fasteners for lightweight concrete shall meet FM Standard 4470 requirements for corrosion resistance.
            (a) Zono-tite Fasteners by Siplast; Irving, TX

H. Walktread: Smooth Surfaced PVC of color contrasting color heat welded to cap ply.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Perform work in accordance with manufacturer's instructions.

B. Coordinate this work with installation of associated sheet metal flashing and trim installed by other sections as work of this section proceeds.

C. Prevent materials from entering and clogging roof drains and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

D. Install night seal at end of each workday or when rain is forecast. Provide temporary seals to prevent water from entering completed sections of roofing system. Remove and discard temporary seals before beginning work on adjoining roofing.

3.02 INSTALLATION - MEMBRANE

A. Membrane Application: Apply roofing in accordance with roofing system manufacturer's instructions and the following requirements. Application of roofing membrane components shall immediately follow application of base sheet and/or insulation as a continuous operation.

B. Aesthetic Considerations: Construction of an aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials and exercise care in ensuring that the finished application is acceptable to the Owner.

C. Membrane Adhesive Application: Membrane adhesive can be applied by roller. Apply cold adhesive in a smooth, even, continuous layer without breaks or voids. Utilize an application rate as published by the roof membrane manufacturer.

D. Roofing Application: Apply roofing to be free of wrinkles, creases or fishmouths. Use a blower and/or broom to remove any dirt or debris from the substrate surface.

1. Unroll the specified fleece-back PVC sheets in place and fold back sheets in the long dimension to allow adhering of membrane, one half of sheet at a time. Alternatively, align a full roll of membrane with the factory-applied lap line on the previously installed sheet. Roll out the roll approximately 20 feet checking to see that the edge of the new roll is straight with the line. Pick up the tail end of the previously rolled-out membrane and pull back over top of the roll of membrane.
2. Apply the specified low-rise foam adhesive in a “spatter pattern” over the substrate to yield a heavily textured, even coating of approximately 1/4- inch 0.24 inch to 1/2 inch nominal thickness height on the peaks of the spattered adhesive. Allow the adhesive to rise and apply the roof membrane before the adhesive begins to “skin” over.
3. Lay half of the membrane into the wet adhesive and roll into place with a 150 lb. (68 kg) roller. Repeat the process for the other half of sheet. If following the alternative method, pull the sheet back to its original position, and roll into place. Make sure that the lap line is followed when re-installing the sheet.
4. Where the substrate angle changes in excess of 5 degrees (i.e. 1-inch slope), mechanically attach the membrane into the structural deck on 6-inch, 12-inch centers, keeping the fasteners 1/4 to 3/4 inches from the angle change. At curbs and walls where the angle changes in excess of 10 degrees (i.e. 2-inch slope), mechanically attach the membrane into the structural deck on 6-inch, 12-inch centers, keeping the fasteners 1/2 inch from the membrane edge. Alternatively, at walls/curbs extend the membrane a minimum of 3 inches up the vertical flashing substrate and mechanically attach the specified lipped termination bar, inverted, at the top edge of the membrane. The termination bar must be installed within 1.5 to 2 inches (38 to 51 mm) of the horizontal plane of the roof, with a minimum of 1-inch (0.98 inch) of membrane extending above the termination bar. Prior to mechanical attachment of the termination bar, apply the specified water block sealant on the flashing substrate where the membrane will terminate. Apply the specified sealant at the top of the termination bar if left exposed.
5. Install a minimum of 4 fasteners evenly spaced around all round, square, “L”-beam or “H”-beam penetrations, keeping the fasteners 1/4 to 3/4 inches from the penetration. At penetrations having a larger diameter, install fasteners around the penetration on 12-inch centers.
6. Clean the laps of membrane that has become dirty or contaminated using the specified conditioner. Heat weld all side and end laps of the membrane during each day’s application. All welds must be continuous, without voids, and free of burns and scorch marks. Weld shall be a minimum width of 1.5 inches for automatic machine welding and 2 inches for hand welding. Contact the manufacturer of the heat-welding equipment for specific guidelines on operating the equipment. Hand-roll the side laps and head laps of the membrane behind the heat welder.

E. Flashing Application - General: Locate all penetrations at least 24 inches from curbs, walls, and edges to provide access for proper application of the specified flashing materials. Reinforce all coated metal and membrane flashing corners using preformed corners or non-reinforced membrane. Hot-air weld all flashing membranes, accessories, and coated metal to have a minimum 2-inch (2.01 inch) hand-welded or minimum 1.5-inch (1.5 inch) automatic machine-welded lap. Reference the manufacturer’s standard details for all flashing conditions.

F. Flashing Application - Coated Metal Flashings: Form coated metal flashings in accordance with the manufacturer’s published specifications. Reference the manufacturer’s standard details for all flashing conditions. Gap joints of coated metal edge, and flashing sections by a 1/4-inch 0.24 inch to allow for expansion and contraction. Apply 2-inch (2.01 inch) aluminum tape over the joint as a bond-breaker, to prevent welding in this area. Hot-air weld a 6-inch (5.98 inch) unsupported membrane flashing strip to both sides of the joint, with approximately 1-inch (0.98 inch) on either side of the joint left un-welded to allow for expansion and contraction. Lap all joints of coated metal sealant pans, scupper inserts, corners of roof edging and base flashing, or pop-rivet a separate metal piece to create a continuous flange condition. Hot-air weld a 6-

inch (152 mm) strip of reinforced membrane flashing over all seams that will not be sealed during subsequent flashing installation.

G. Reinforced Fleeceback Flashing Application - Adhered Membrane Flashing: Apply the specified low-rise foam adhesive to the substrate at the minimum rate published by the roof membrane manufacturer. Allow the adhesive to rise before application of the flashing membrane.

H. Catalyzed Acrylic Resin Flashing System: Install the liquid-applied primer and flashing system in accordance with the membrane system manufacturer's printed installer's guidelines and other applicable written recommendations as provided by the manufacturer.

I. Water Cut-Off: At end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing

3.03 ROOF SYSTEM INTERFACE WITH RELATED COMPONENTS

A. Walkway/Protection Pads: Install walkway rolls at all roof access locations and other designated locations including roof-mounted equipment, work locations and areas of repeated rooftop traffic. Cut the walktread into maximum 5 foot lengths and allow to relax until flat. Use a minimum spacing of 2 inches between sheets to allow for proper drainage. Heat-weld the walkway rolls to provide a continuous bond around the perimeter edges of the sheet to the roof membrane surface.

B. Roof Drains: Fit drains with clamping rings and strainer baskets. Provide a minimum 36-inch by 36-inch sump and a slope within the sump not exceeding 4:12. Extend the roof membrane over the drain opening and cut a hole in the membrane directly over the opening, leaving a 1/2-inch of membrane to extending past the drain flange into the drain opening. Punch holes through the roofing membrane at drain bolt locations. Set the membrane in a full bed (i.e. full tube) of the specified water block sealant over the drain flange prior to securement of the clamping ring. Lap seams within the sump area must be avoided. Where lap seams cannot be located outside of the sump area, apply a separate target of the specified roof membrane to extend a minimum of 12-inches in all directions from the sump area and mechanically attached on 12-inch centers around the drain with the specified screws and plates. Heat weld the flashing target beyond the screws and plates, extending over the drain flange.

C. Termination Bars: Prior to mechanical attachment of the termination bar, apply the specified water block sealant on the flashing substrate where the membrane will terminate. Mechanically attach termination bars using the specified fasteners. Apply a continuous bead of the specified sealant at the top of termination bars that are fabricated with a sealant receiver lip.

3.04 FIELD QUALITY CONTROL AND INSPECTIONS

A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

B. Provide regular on-site attendance of roofing manufacturer's representative during installation of this work.

C. Electronic Leak Detection (ELD) Testing: Test roofing areas to detect discontinuities in roofing membrane in accordance with ASTM D7877 or ASTM D8231.

D. Repair or remove and replace components of roofing system where tests or inspections indicate they do not comply with specified requirements. Perform repairs using manufacturer's approved repair procedures.

E. Perform additional testing and inspecting at Contractor's expense to determine if repaired or additional work complies with specified requirements.

F. Notification Of Completion: Notify the manufacturer by means of manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.

G. Final Inspection

1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the manufacturer's representative. Complete, sign, and mail the punch list form to the manufacturer's headquarters.
2. Issuance Of The Guarantee: Complete all post installation procedures and meet the manufacturer's final endorsement for issuance of the specified guarantee.

END OF SECTION

SECTION 076200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, gutters, and downspouts.

B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

C. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

D. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

E. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.

F. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction; 2012.

G. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.

H. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012).

I. CDA A4050 - Copper in Architecture - Handbook; Current Edition.

J. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.06 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Aluminum: ASTM B209 (ASTM B209M); 20 gage, (0.032 inch) thick; anodized finish of color as selected.

1. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mils thick.

B. Copper: ASTM B370, cold rolled 16 oz/sq ft (24 gage) (0.0216 inch) thick; natural finish.

2.02 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest possible lengths.

C. Hem exposed edges on underside 1/2 inch; miter and seam corners.

D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.

F. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.

2.03 GUTTER AND DOWNSPOUT FABRICATION

A. Gutters: SMACNA (ASMM) Rectangular profile.

B. Downspouts: Rectangular profile.

C. Gutters and Downspouts: Size indicated.

D. Accessories: Profiled to suit gutters and downspouts.
1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
2. Gutter Supports: Brackets.
3. Downspout Supports: Brackets.

E. Downspout Boots: Cast iron.

F. Seal metal joints.

2.04 ACCESSORIES

A. Fasteners: Same material and finish as flashing metal.

B. Primer: Iron oxide linseed oil type.

C. Concealed Sealants: Non-curing butyl sealant.

D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.

E. Plastic Cement: ASTM D4586/D4586M, Type I.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..

B. Apply plastic cement compound between metal flashings and felt flashings.

C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

D. Solder metal joints for full metal surface contact, and after soldering wash metal clean with neutralizing solution and rinse with water.

E. Secure gutters and downspouts in place with concealed fasteners.

F. Slope gutters 1/4 inch per 10 feet, minimum.

G. Connect downspouts to downspout boots, and seal connection watertight.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for field inspection requirements.

B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

SECTION 077100
ROOF SPECIALTIES

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.

B. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2017.

C. NRCA (RM) - The NRCA Roofing Manual; 2017.

1.03 SUBMITTALS

A. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

B. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.

C. Samples: Submit two appropriately sized samples of coping and gravel stop.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Roof Edge Flashings: Factory or Shop fabricated to sizes required; corners mitered; concealed fasteners.
   1. Configuration: NRCA UL Certified – UL-26.
   2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.
   3. Material: See Drawings for material type and thickness.

B. Copings: Factory or Shop fabricated to sizes required; corners mitered; concealed fasteners.
   1. Configuration: NRCA UL Certified – UL-6B.
   2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by applicable local building code.
   3. Wall Width: Contractor to Field Verify.
   4. Outside Face Height: Per in-place mock-up and requirements of UL Certification.
   5. Inside Face Height: Per in-place mock-up and requirements of UL Certification.
   6. Material: See Drawings for material type and thickness.
   7. Finish: 70 percent polyvinylidene fluoride.
   8. Color: As selected by Architect from manufacturer's standard range.

C. Pipe and Penetration Flashing: Base of rounded aluminum, compatible with sheet metal roof systems, and capable of accommodating pipes sized between 3/8 inch and 12 inches.

D. Counterflashings: Factory fabricated and finished sheet metal that overlaps top edges of base flashing by at least 4 inches.
   1. Material: See Drawings for material type and thickness.

2.02 FINISHES

A. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as indicated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Comply with NRCA (RM) drawing details as noted.

END OF SECTION

SECTION 077200
ROOF ACCESSORIES

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

1.02 SECTION 018113 SUSTAINABLE DESIGN REQUIREMENTS.

1.03 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used.

B. Shop Drawing approval is required before fabrication.

1.04 WARRANTY

A. Manufacturer Warranty: Provide 5-year manufacturer warranty for roof curbs. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 ROOF CURBS

A. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded, and integral counterflashing with top and edges formed to shed water.
   1. Roof Curb Mounting Substrate: Curb substrate consists of _____.

B. Frames:
   1. Material: ASTM A 653 G90 hot-dipped galvanized steel. Minimum 18 gauge or heavier gauge as engineered by manufacturer.
      a. Corners: Mitered and welded. Bolted connections are not accepted.
      b. Base Plates: Integral to frame and welded.
      c. Insulation: 1-1/2 inch thick three-pound density fiberglass insulation.
      d. Internal Reinforcement: Reinforced with 1 inch by 1 inch angles on any side of curb 3 feet or more in length.
      e. Platform Curb: ¾-inch plywood top with minimum 18 gauge stainless steel cap
      f. Wood Nailers: Factory installed, pressure treated.
   2. Curb Height: Minimum 8 inches above finished roof or as specified.
   3. Construct curbs to match roof slope with plumb and level top surface for mounting mechanical equipment, smoke vents, roof hatches and skylights, except where sloped top surface is shown on drawings.
   4. Gasketing: 1/4 inch thick, 1 inch wide at roof top units and skylights.
   5. Manufactured Roof Curb Styles with typical applications.
      a. Typical Equipment Curb: Basis of Design: RPC-3 (non-canted style with insulation) installs either under or on top of metal decks by Roof Products, Inc. or approved equal.
      b. Typical Platform Equipment Curb: Basis of Design: RPPF-3 (non-canted style with insulation) installs either under or on top of metal decks by Roof Products, Inc. or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Manufacturer to coordinate roof curb sizes and options with contractor prior to fabrication.

B. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

END OF SECTION

SECTION 078400
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 070553 - Fire and Smoke Assembly Identification.

D. Section 078100 - Applied Fire Protection.

1.03 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2015.

B. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 2013a.

C. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestops; 2014.

D. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2010a.

E. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus; 2015a.

F. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies; 2013.

G. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015.

H. ITS (DIR) - Directory of Listed Products; current edition.

I. FM 4991 - Approval Standard for Firestop Contractors; 2013.

J. FM (AG) - FM Approval Guide; current edition.

K. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition.

L. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

M. UL (FRD) - Fire Resistance Directory; current edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on product characteristics, performance ratings, and limitations.

C. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.

D. Engineering Judgments: Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping system or fire-resistive joint system, submit illustration, with modifications marked, approved by system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly. Obtain approval of authorities having jurisdiction prior to submittal

E. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Installer's qualification statement.

1.05 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
   1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. All through-penetration firestops shall be provided by one manufacturer.

D. Installer Qualifications: Company specializing in performing the work of this section and:
   1. Trained by manufacturer.
   2. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
   3. Verification of minimum three years documented experience installing work of this type.
   4. Verification of at least five satisfactorily completed projects of comparable size and type.
   5. Licensed by local authorities having jurisdiction (AHJ).

E. All fire-resistive joints and perimeter fire barriers shall be provided by one manufacturer.

1.06 MOCK-UPS

A. Install one firestopping assembly representative of each fire rating design required on project.
   1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.

B. If accepted, mock-up will represent minimum standard for this work.

1.07 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
   1. 3M Fire Protection Products; _____: www.3m.com/firestop/#sle.
   2. Hilti, Inc; _____: www.us.hilti.com/#sle.
   3. Specified Technologies Inc; _____: www.stifirestop.com/#sle.
   4. RectorSeal.
   5. Substitutions: See Section 016000 - Product Requirements.

2.02 MATERIALS

A. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.

B. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.

C. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

D. Fire Ratings: Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.

B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.

C. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
   1. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
   2. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
   3. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING PENETRATIONS THROUGH CONCRETE AND CONCRETE MASONRY CONSTRUCTION

A. Blank Openings:
   1. In Floors or Walls:
      a. 2 Hour Construction: UL System C-AJ-0090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 2 Hour Construction: UL System C-AJ-0015; Specified Technologies Inc. SSM mortar.

B. Penetrations Through Floors By:
   1. Multiple Penetrations in Large Openings:
      a. 2 Hour Construction: UL System F-A-8012; Hilti CFS-S SIL GG Firestop Silicone Sealant Gun-Grade or CFS-S SIL SL Firestop Silicone Sealant Self-Leveling.
   2. Uninsulated Metallic Pipe, Conduit, and Tubing:
      a. 2 Hour Construction: UL System F-A-1110; Specified Technologies Inc. CID cast-in devices.
   3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
      a. 2 Hour Construction: UL System F-A-2246; Specified Technologies Inc. CID cast-in devices.
   4. Insulated Pipes:
      a. 2 Hour Construction: UL System F-A-5041; Specified Technologies Inc. CID cast-in devices.

C. Penetrations Through Walls By:
   1. Uninsulated Metallic Pipe, Conduit, and Tubing:
      a. 2 Hour Construction: UL System W-J-1067; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 1 Hour Construction: UL System W-J-1067; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   2. Insulated Pipes:
      a. 2 Hour Construction: UL System C-AJ-5090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 1 Hour Construction: UL System C-AJ-5090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   3. HVAC Ducts, Uninsulated:
      a. 2 Hour Construction: UL System W-J-7092; Specified Technologies Inc. FyreFlange HVAC Firestop Angle.
      b. 2 Hour Construction: UL System W-J-7109; Hilti FS-ONE MAX Intumescent Firestop Sealant or CP 606 Flexible Firestop Sealant.
   4. HVAC Ducts, Insulated:
      a. 2 Hour Construction: UL System W-J-7112; Hilti FS-ONE MAX Intumescent Firestop Sealant.

2.05 FIRESTOPPING PENETRATIONS THROUGH GYPSUM BOARD WALLS

A. Blank Openings:

1. 2 Hour Construction: UL System W-L-0038; Specified Technologies Inc. FP Intumescent Firestop Plug.
2. 2 Hour Construction: UL System W-L-3334; Hilti CP 653 Speed Sleeve.
3. 1 Hour Construction: UL System W-L-0038; Specified Technologies Inc. FP Intumescent Firestop Plug.
4. 1 Hour Construction: UL System W-L-3334; Hilti CP 653 Speed Sleeve.

B. Penetrations By:
1. Multiple Penetrations in Large Openings:
   a. 2 Hour Construction: UL System W-L-1408; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System W-L-8013; Hilti CFS-BL Firestop Block.
   c. 2 Hour Construction: UL System W-L-8025; Specified Technologies Inc. LCI Intumescent Firestop Sealant.
2. Uninsulated Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System W-L-1054; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 1 Hour Construction: UL System W-L-1054; Hilti FS-ONE MAX Intumescent Firestop Sealant.
3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System W-L-2078; Hilti CP 643N/644 Firestop Collar.
   b. 2 Hour Construction: UL System W-L-2128; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   c. 1 Hour Construction: UL System W-L-2078; Hilti CP 643N/644 Firestop Collar.
   d. 1 Hour Construction: UL System W-L-2128; Hilti FS-ONE MAX Intumescent Firestop Sealant.
4. Cable Trays with Electrical Cables:
   a. 2 Hour Construction: UL System W-L-4011; Hilti CFS-BL Firestop Block.
   b. 2 Hour Construction: UL System W-L-4060; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   c. 1 Hour Construction: UL System W-L-4011; Hilti CFS-BL Firestop Block.
   d. 1 Hour Construction: UL System W-L-4060; Hilti FS-ONE MAX Intumescent Firestop Sealant.
5. Insulated Pipes:
   a. 2 Hour Construction: UL System W-L-5028; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System W-L-5029; Hilti FS-ONE Intumescent Firestop Sealant.
   c. 1 Hour Construction: UL System W-L-5028; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   d. 1 Hour Construction: UL System W-L-5029; Hilti FS-ONE Intumescent Firestop Sealant.
6. HVAC Ducts, Insulated:
   a. 2 Hour Construction: UL System W-L-7156; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System W-L-7164; Specified Technologies Inc. FyreFlange HVAC Firestop Angle.
   c. 1 Hour Construction: UL System W-L-7164; Specified Technologies Inc. FyreFlange HVAC Firestop Angle.
   d. 1 Hour Construction: UL System W-L-7156; Hilti FS-ONE MAX Intumescent Firestop Sealant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

B. Inspections of through-penetration firestop systems shall be conducted in accordance with the Post-Installation Method outlined in ASTM E 2174. A minimum of 2%, but not less than one, of each type of firestop system shall be inspected per floor or for each area of a floor when a floor is larger than 10,000 square feet.

C. Inspections of fire-resistive joints and perimeter fire barrier systems shall be conducted in accordance with the Post-Installation Method outlined in ASTM E 2393. A minimum of one sample per 500 lineal feet, but not less than one, of each type of fire-resistive joint shall be inspected.

D. Destructive testing shall be done in accordance with the International Firestop Counsel's (IFC) IFC Recommended Guidelines for Performing Destructive testing for Installed Penetration Firestop Systems, Fire-Resistive Joint Systems, or Perimeter Fire Barrier Systems dated April 10, 2012.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to prevent liquid material from leakage.

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by Owner's Independent Testing Agency.

C. Install labeling required by code.

3.04 FIELD QUALITY CONTROL

A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.

B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

C. Where deficiencies are found or firestops are damaged or removed because of testing, repair, or replacing firestopping to comply with requirements:

1. Any type of firestop or fire-resistive joint system does not comply with the inspection documents will require repair or replacement and re-inspection of that firestop/joint system plus one full additional inspection of the percentage specified for that system type. If non-compliance occurs on 10% or more of the quantities of firestop products, systems, or joints, then inspection of those particular types will cease. The installer shall inspect their own work and shall repair or replace those system types with the area prior to recommencement of inspections by the inspector.
2. The cost for repair, replacement of tested locations, re-inspection (if required), and retesting (if required), shall be paid for by the contractor and/or sub-contractor. The Owner shall not be responsible for additional costs.
3. The time and expenses for the Special Inspector for Firestop Systems to re-inspect or direct any retests shall be a charge to the Construction Manager based on actual time and expenses, with a minimum charge of $1,000 per day. The costs associated with re-inspection and/or re-testing shall be paid by the Construction Manager to the Special Inspector. The Construction Manager shall be responsible for any cost recovery for re-inspection and retesting costs from the associated sub-contractor.

3.05 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.02 REFERENCE STANDARDS

A. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.

B. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.

C. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).

D. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2013.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Prior to commencing sealant and caulking work, schedule a meeting with representatives of all trades affected by the work, in order to review, discuss and agree upon methods and procedures to be used.

1.04 SUBMITTALS

A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.
   5. Substrates for which use of primer is required.
   6. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
   7. Sample product warranty.

B. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

D. Samples: Four samples of each type (and color where applicable) of material specified for use on the project. Seal actual samples of adjacent material.

E. Listing of Use Conditions:
   1. Complete listing, in tabular format, of various sealant use conditions throguhout the project, along with the type of sealant system proposed for each condition to fulfill sealing requirements.
   2. Include in listing the type of material to be sealed, whether exposed to weathering, exposed to view or concealed, joint preparation required for best results, whether color selection is required, and a space for insertion of color selection by Owner, when appropriate.

F. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

G. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.

1.05 QUALITY ASSURANCE

A. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
   1. Deliver to manufacturer sufficient samples for testing.
   2. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
   3. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.

B. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
   1. Sample: At least 18 inches long.
   2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch by that percentage; if adhesion failure occurs before the "1 inch mark" is that distance from the substrate, the test has failed.
   3. If either adhesive or cohesive failure occurs prior to minimum elongation, take necessary measures to correct conditions and re-test; record each modification to products or installation procedures.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints: Seal open joints, as indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
      a. Joints listed within the construction drawings and scope of work.
      b. Joints between reglet flashing and sawcut of existing precast concrete panel.
      c. Joints between sheet metal flashing and trim and existing precast concrete panel.
      d. Joints at common sheet metal flashing and trim and miscellaneous substrates.
      e. Alternate – Where designated, joints between existing precast concrete panel and existing receiver flashing.

B. Exterior Joints:
   1. Type 1:
      a. Joints between reglet flashing and sawcut of existing precast concrete panel.
      b. Joints between sheet metal flashing and trim and existing precast concrete panel.
      c. Alternate – Where designated, joints between existing precast concrete panel and existing receiver flashing.
   2. Type 2 - Joints at common sheet metal flashing and trim and miscellaneous substrates.
   3. Type 3 - Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.

2.02 JOINT SEALANTS - GENERAL

A. General: Use sealant types at locations indicated on Drawings and as specified herein.

B. Colors:
   1. Unless indicated or directed otherwise by Owner, match sealant color with color of adjacent materials as closely as possible.
   2. Owner will select sealant color where adjacent materials on each side of the joint are of different colors.

C. Non-Staining Sealants: Don not use sealants that stain materials to which they are applied or in contact with. Porous and/or light-colored substrates must be previously tested for sealant compatibility and staining.

D. Fast-Setting Sealant: Fast-setting/curing versions, or use of accelerating curing catalysts is permitted only where specifically accepted by Owner.

2.03 NONSAG JOINT SEALANTS

A. Type 1 - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
   2. Non-Staining to Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Color: Match adjacent finished surfaces. Owner / Architect to confirm.
   5. Cure Type: Single-component, neutral curing.
   6. Service Temperature Range: Minus 20 to 180 degrees Fahrenheit.
   7. Basis of Design: DOWSIL 790 Silicone Building Sealant.

B. Type 2 – Low-modulus, High-Performance Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
   2. Basis of Design: Sikaflex -15LM

C. Type 3 - Non-Curing Butyl Sealant: Solvent-based, single component, non-sag, non-skinning, non-hardening, non-bleeding; non-vapor-permeable; intended for fully concealed applications.

2.04 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   1. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.
   1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
   2. Notify Architect of date and time that tests will be performed, at least seven days in advance.
   3. Record each test on Preinstallation Adhesion Test Log as indicated.
   4. If any sample fails, review products and installation procedures, consult manufacturer, or take whatever other measures are necessary to ensure adhesion; re-test in a different location; if unable to obtain satisfactory adhesion, report to Architect.
   5. After completion of tests, remove remaining sample material and prepare joint for new sealant installation.

3.02 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.02 REFERENCE STANDARDS

A. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.

B. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2003 (R2009).

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.

D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.

E. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames; 2022.

F. ANSI/SDI A250.13 - Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies for Protection of Building Envelopes; 2008 (Reaffirmed 2018).

G. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

H. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.

I. ASTM C1199 - Standard Test Method for Measuring the Steady-State Thermal Transmittance of Fenestration Systems Using Hot Box Methods; 2022.

J. ASTM C1363 - Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus; 2019.

K. ASTM E1423 - Standard Practice for Determining the Steady State Thermal Transmittance of Fenestration Systems; 2014.

L. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.

M. NAAMM HMMA 867 - Guide Specifications for Laminated Core Hollow Metal Doors and Frames; 2016.

N. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.

O. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2016.

P. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.

Q. NFPA 257 - Standard on Fire Test for Window and Glass Block Assemblies; 2012.

R. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2013.

S. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

T. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.

U. FGBC project requirements - see 018113 Sustainable Design Requirements and 017419 Construction Waste Management and Disposal

1.03 RELATED DOCUMENTS

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

1.04 SUMMARY

A. Section Includes:
   1. Standard and custom hollow metal doors and frames.
   2. Steel sidelight, borrowed lite and transom frames.
   3. Louvers installed in hollow metal doors.
   4. Light frames and glazing installed in hollow metal doors.

B. Related Sections:
   1. Division 01 Section "General Conditions".
      a. 017419 “Construction Waste Management and Disposal”.
      b. 018113 “Sustainable Design Requirements”.
   2. Division 04 Section "Masonry".
   3. Division 06 Section “Rough Carpentry”.
   4. Division 06 Section “Finish Carpentry”.
   5. Division 08 Section “Operations and Maintenance”.
   6. Division 08 Section “Interior Aluminum Doors and Frames”.
   7. Division 08 Section “Flush Wood Doors”.
   8. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.
   9. Division 08 Section "Glazing".
   10. Division 08 Section "Door Hardware”.
   11. Division 08 Section “Automatic Door Operators”.
   12. Division 09 Sections "Painting".
   13. Division 26 Section "Electrical”

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
   1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
   2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
   3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
   4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
   5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
   6. ANSI/SDI A250.13 - Testing and Rating of Severe Windstorm Resistant Components for Swing Door Assemblies.
   7. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
   8. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   9. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
   10. SDI-113 Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door & Frame Assemblies.
   11. ASTM C1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
   12. ASTM C1199 - Standard Test Method for Measuring the Steady-State Thermal Transmittance of Fenestration Systems Using Hot Box Methods
   13. ASTM E1423 - Practice for Determining Steady State Thermal Transmittance of Fenestration Systems.
   14. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.

15. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
16. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
17. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
18. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
19. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
20. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.05 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

C. Shop Drawings: Include the following:
   1. Elevations of each door design.
   2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
   3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
   4. Locations of reinforcement and preparations for hardware.
   5. Details of anchorages, joints, field splices, and connections.
   6. Details of accessories.
   7. Details of moldings, removable stops, and glazing.
   8. Details of conduit and preparations for power, signal, and control systems.

D. Samples for Verification:
   1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

E. Informational Submittals:
   1. LEED Requirements:
      a. Product Data for Credit MRc2: For products having a product-specific Type III Environmental Product Declaration (EPD), provide documentation of the EPD. Include statement indicating costs for each product having an EPD.
      b. Product Data for Credit MRc4: For products having a Health Product Declaration (HPD), provide documentation of the HPD. Include statement indicating costs for each product having an HPD.
      c. Product Data for Credit EAp2 and EAc2: Contractor required to meet or exceed thermal resistance U-factor of 0.34 (ASTM 1363) and R-factor of 2.92 (ASTM 1363).
   2. Hurricane Resistant Openings (State of Florida): Within the State of Florida, provide copy of current State of Florida Product Approval as proof of compliance that doors, frames and hardware for exterior opening assemblies have been tested and approved for use at the design pressure level and debris impact resistance requirements specified for the Project.
      a. Hurricane Resistant Components (State of Florida): Within the State of Florida, provide copy of independent, third-party certified listing conforming to ANSI A250.13.

1.06 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL 10C (neutral pressure at 40” above sill) or UL 10C.
   1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
   2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
   3. Smoke Control Door Assemblies: Comply with NFPA 105.
      a. Smoke "S" Label: Doors to bear “S” label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.

E. Energy Efficient Exterior Openings: Comply with minimum thermal ratings, based on SDI-113, ASTM C1363, ASTM C1199 and ASTM E1423. Openings to be fabricated and tested as fully operable, thermal insulating door and frame assemblies.
   1. Thermal Performance (Exterior Openings): Independent testing laboratory certification for exterior door assemblies being tested in accordance with SDI-113, ASTM C1363, ASTM C1199 and ASTM E143 and meet or exceed the following requirements:
      a. Door Assembly Operable U-Factor and R-Value Ratings: U-Factor 0.34, R-Value 2.92, including insulated door, thermal-break frame and threshold.
   2. Air Infiltration (Exterior Openings): Independent testing laboratory certification for exterior door assemblies being tested in accordance with ASTM E283 to meet or exceed the following requirements:
      a. Rate of leakage of the door assembly shall not exceed 0.25 cfm per square foot of static differential air pressure of 1.567 psf (equivalent to 25 mph wind velocity).

F. Hurricane Resistant Exterior Openings (State of Florida including High Velocity Hurricane Zone (HVHZ): Provide exterior hollow metal doors and frames as complete and tested assemblies, or component assemblies, including approved hardware specified under Section 087100 "Door Hardware", to meet the design pressures, debris impact resistance, and glass and glazing requirements as detailed in the current State of Florida building code sections applicable to the Project.
   1. Each unit to bear third party permanent label in accordance with Florida Building Code requirements.

G. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.08 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.09 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:
   1. CECO Door Products (C).
   2. Curries Company (CU).

2.02 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

C. Frame Anchors: ASTM A653/A653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.03 HOLLOW METAL DOORS

A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.

B. Exterior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A653/A653M, Coating Designation A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
   1. Design: Flush panel.
   2. Core Construction: Manufacturer's standard polystyrene. Where indicated, provide doors fabricated as thermal-rated assemblies with a minimum R-value of 2.8 or better.
   3. Level/Model: Level 4 and Physical Performance Level A (Maximum Duty), Minimum 14 gauge 0.067 inch - 1.7-mm) thick steel, Model 2.
   4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
   5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
   6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A1008/A1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
   1. Design: Flush panel.
   2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
      a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
   3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053-inch - 1.3-mm) thick steel, Model 2.
   4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
   5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
   6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

D. Manufacturers Basis of Design:
   1. Curries Company (CU) - Polystyrene Core - 707 Series.

2.04 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A653/A653M, Coating Designation A60.
   1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
   2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
   3. Manufacturers Basis of Design:
      a. Curries Company (CU) - M Series.

C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A1008/A1008M.
   1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
   2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
   3. Manufacturers Basis of Design:
      a. Curries Company (CU) - CM Series.
      b. Curries Company (CU) - M Series.

D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.05 FRAME ANCHORS

A. Jamb Anchors:
   1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
   2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
   3. Hurricane Opening Anchors: Types as tested and required for indicated wall types to meet specified design pressure and impact rating criteria.

B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.

C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.06 LIGHT OPENINGS AND GLAZING

A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.

B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.

C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.

D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

2.07 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.08 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:
   1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
   2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
   3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
   4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
   5. Electrical Raceways: Provide hollow metal doors to receive electrified hardware with concealed wiring harness and standardized Molex™ plug connectors on both ends to accommodate up to twelve wires. Coordinate connectors on end of the wiring harness to plug directly into the electrified hardware and the through-wire transfer hardware or wiring harness specified in hardware sets in Division 08 Sections "Door Hardware" and "Access Control Hardware". Wire nut connections are not acceptable.

D. Hollow Metal Frames:
   1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
   2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.

3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
4. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
5. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
6. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
7. Jamb Anchors: Provide number and spacing of anchors as follows:
   a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches on-center and as follows:
      1) Two anchors per jamb up to 60 inches high.
      2) Three anchors per jamb from 60 to 90 inches high.
      3) Four anchors per jamb from 90 to 120 inches high.
      4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
   b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
      1) Three anchors per jamb up to 60 inches high.
      2) Four anchors per jamb from 60 to 90 inches high.
      3) Five anchors per jamb from 90 to 96 inches high.
      4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
      5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
8. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
9. Bituminous Coating: Where frames are fully grouted with an approved Portland Cement based grout or mortar, coat inside of frame throat with a water based bituminous or asphaltic emulsion coating to a minimum thickness of 3 mils DFT, tested in accordance with UL 10C and applied to the frame under a 3rd party independent follow-up service procedure.

E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
   1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
   2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
   3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
   4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.09 STEEL FINISHES

A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

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

3.02 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

C. Tolerances shall comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

E. Verify tolerances against manufacturers installations instructions for tornado and hurricane storm shelter openings.

3.03 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.
   1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
   2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
   3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
   4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
   1. Non-Fire-Rated Standard Steel Doors:
      a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
      b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
      c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
      d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
   2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.04 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

3.05 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-05-05

SECTION 081416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush configuration; fire rated and non-rated.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 081113 - Hollow Metal Doors and Frames.

D. Section 087100 - Door Hardware.

E. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

A. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.

B. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.

C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.

F. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.

G. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
   1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

D. Samples: Submit two samples of door veneer, 4 inch by 4 inch in size illustrating wood grain, stain color, and sheen.

E. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

F. Manufacturer's Installation Instructions: Indicate special installation instructions.

G. Manufacturer's Qualification Statement.

H. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.
   1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

B. Quality Certification:

1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
2. Provide designated labels on shop drawings as required by certification program.
3. Provide designated labels on installed products as required by certification program.
4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Interior Doors: Provide manufacturer's warranty for the life of the installation.

C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 DOORS

A. Doors: Refer to drawings for locations and additional requirements.
1. Quality Level: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS).
2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
1. Provide solid core doors at all locations.
2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) labeled without any visible seals when door is open.
3. Wood veneer facing with factory transparent finish.

2.02 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 60 Minute Rated Doors: Type structural composite lumber core (SCLC), plies and faces as indicated.

B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.03 DOOR FACINGS

A. Veneer Facing for Transparent Finish: White oak, veneer grade in accordance with quality standard indicated, rift cut (only red and white oak), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
1. Finish: Custom to match architect's sample.
2. Vertical Edges: Same species as face veneer.

2.04 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:
1. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
2. Provide solid blocking for other throughbolted hardware.

C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.

D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

F. Provide edge clearances in accordance with the quality standard specified.

2.05 FACTORY FINISHING - WOOD VENEER DOORS

A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 9, UV Curable, Acrylated Epoxy, Polyester or Urethane.
      b. Stain: As selected by Architect.
      c. Sheen: Satin.

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing.

2.06 ACCESSORIES

A. Hollow Metal Door Frames: As specified in Section 081113.

B. Glazed Openings:
   1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.

C. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.

D. Door Hardware: As specified in Section 087100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Coordinate installation of glazing.

F. Install door louvers plumb and level.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION

SECTION 083100
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall access door and frame units.

B. Ceiling access door and frame units.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. UL (FRD) - Fire Resistance Directory; current edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

A. Wall-Mounted Units:
   1. Location: As indicated on drawings.
   2. Material: Steel.
   3. Wall Mounting Criteria: Provide surface-mounted face frame and door surface flush with frame surface.

B. Wall-Mounted Units in Wet Areas:
   1. Location: As indicated on drawings.
   2. Material: Steel, hot-dipped zinc, or zinc-aluminum-alloy coated.
   3. Wall Mounting Criteria: Provide surface-mounted face frame and door surface flush with frame surface.

C. Fire-Rated Wall-Mounted Units:
   1. Location: As indicated on drawings.
   2. Wall Fire-Rating: As indicated on drawings.
   3. Material: Steel.
   4. Size: As indicated on drawings.

D. Ceiling-Mounted Units:
   1. Location: As indicated on drawings.
   2. Material: Steel.
   3. Size: As indicated on drawings.
   4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

2.02 WALL AND CEILING MOUNTED UNITS

A. Manufacturers:
   1. ACUDOR Products Inc: www.acudor.com/#sle.
   2. Babcock-Davis; _____: www.babcockdavis.com/#sle.
   3. Nystrom, Inc; _____: www.nystrom.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.

B. Wall and Ceiling Mounted Units: Factory fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
   1. Door Style: Single thickness with rolled or turned in edges.
   2. Frames: 16 gage, 0.0598 inch, minimum thickness.
   3. Heavy Duty Single Steel Sheet Door Panels: 14 gage, 0.0747 inch, minimum thickness.
   4. Units in Fire-Rated Assemblies: Fire rating as required by applicable code for fire-rated assembly that access doors are being installed.
      a. Provide products listed by UL (FRD) as suitable for purpose indicated.
   5. Steel Finish: Primed.
   6. Primed and Factory Finish: Polyester powder coat; color as selected by Architect from manufacturer's standard colors.
   7. Size: Selected from manufacturer's full range.
   8. Hardware:
      a. Hardware for Fire-Rated Units: As required for listing.
      b. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
      c. Latch/Lock: Tamperproof tool-operated cam latch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.

B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install frames plumb and level in openings, and secure units rigidly in place.

C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 084313
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum-framed storefront, with vision glass.

B. Aluminum doors and frames.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 087101 - HARDWARE: Hardware items other than specified in this section.

D. Section 088000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

A. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.

B. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.

A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.

B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.

D. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of other components that comprise the exterior enclosure.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details.

C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

D. Samples: Submit two samples __12__x__12__ inches in size illustrating finished aluminum surface, glass, infill panels, glazing materials.

E. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.

F. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.

G. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.

1.06 QUALITY ASSURANCE

A. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Handle products of this section in accordance with AAMA CW-10.

B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.09 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.

PART 2 PRODUCTS

2.01 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING (EXTERIOR)

A. Center-Set Style, Thermally-Broken:
1. Basis of Design: Kawneer; Trifab VersaGlaze 450.
2. Vertical Mullion Dimensions: 2 inches wide by 6 inches deep.
3. Horizontal Sill Dimensions: 4 1/2 inches tall by 6 inches deep.

2.02 BASIS OF DESIGN -- FRAMING FOR MONOLITHIC GLAZING (INTERIOR)

A. Center-Set Style:
1. Basis of Design: Kawneer: Trifab VersaGlaze 450.
2. Vertical Mullion Dimensions: 2" x 4 1/2" nominal.
3. Horizontal Sill Dimensions: 4 1/2" x 4 1/2" nominal.

B. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below:
1. EFCO, a Pella Company; _____: www.efcocorp.com/#sle.
2. YKK.

2.03 BASIS OF DESIGN -- SWINGING DOORS

A. Medium Stile, Monolithic Glazing:
1. Basis of Design: Kawneer, Model 350 Medium Stile Entrance.
2. Thickness: 1-3/4 inches.

B. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below:
1. EFCO, a Pella Company; _____: www.efcocorp.com/#sle.

2.04 ALUMINUM-FRAMED STOREFRONT

A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Finish Color: Champagne.
2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
3. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
4. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

5. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
6. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
7. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
8. Maintain continuous air barrier and/or vapor retarder seal throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel, and heel bead of glazing compound.

2.05 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior.
   1. Glazing Stops: Flush.
   2. Cross-Section: As indicated on drawings.

B. Glazing: See Section 088000.

2.06 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Sheet Aluminum: ASTM B209/B209M.

C. Fasteners: Stainless steel.

D. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.07 FINISHES

A. Class II Color Anodized Finish: AAMA 611 AA-M12C22A34 Electrolytically deposited colored anodic coating not less than 0.4 mils thick.

2.08 HARDWARE

A. Other Door Hardware: See Section 087101.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify dimensions, tolerances, and method of attachment with other work.

B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

A. Install wall system in accordance with manufacturer's instructions.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

C. Provide alignment attachments and shims to permanently fasten system to building structure.

D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

E. Provide thermal isolation where components penetrate or disrupt building insulation.

F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.

G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.

H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

I. Install hardware using templates provided.
   1. See Section 087101 for hardware installation requirements.

J. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.

B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 ADJUSTING

A. Adjust operating hardware and sash for smooth operation.

3.05 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 084413
GLAZED ALUMINUM CURTAIN WALLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum-framed curtain wall, with vision glazing and glass infill panels.

B. Firestopping between curtain wall and edge of floor slab.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 078400 - Firestopping: Firestop at system junction with structure.

1.03 REFERENCE STANDARDS

A. AAMA 501.1 - Standard Test Method for Exterior Windows, Curtain Walls and Doors for Water Penetration Using Dynamic Pressure; 2005.

B. AAMA 501.2 - Field Check of Metal Storefronts, Curtain Walls, and Sloped Glazing Systems for Water Leakage; 2009.

C. AAMA 501.4 - Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind Induced Interstory Drifts; 2009.

D. AAMA 503 - Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems; 2014.

E. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.

F. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.

G. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.

H. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2015.

I. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2013.

A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.

B. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

C. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

D. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.

E. ASTM C1135 - Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants; 2000 (Reapproved 2011).

F. ASTM C1249 - Standard Guide for Secondary Seal for Sealed Insulating Glass Units for Structural Sealant Glazing Applications; 2006 (Reapproved 2010).

G. ASTM C1401 - Standard Guide for Structural Sealant Glazing; 2014.

H. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).

I. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference; 2015.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of other components that comprise the exterior enclosure.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, internal drainage details, glazing, and infill.

C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required.

D. Samples: Submit two samples 12 by 12 inches in size illustrating finished aluminum surface, glazing,infill panels, and glazing materials.

E. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.

F. Design Data: Provide framing member structural and physical characteristics and engineering calculations, and identify dimensional limitations; include load calculations at points of attachment to building structure.

G. Structural Sealant Glazing (SSG): Submit product data and calculations showing compliance with performance requirements.

H. Field Quality Control Submittals: Report of field testing for water penetration.

I. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Verify that each component is appropriate for use in structural sealant glazing (SSG) application in regards to at least the following properties; size, shape, dimensions, material, self-life, storage conditions, and color.

B. Manufacturerand Installer Qualifications: Company specializing in manufacturing aluminum glazing systems with minimum 5 years ofdocumented experience.

1.07 MOCK-UP

A. See Section 014000 - Quality Requirements, for general requirements for mock-ups.

B. Locate on-site where directed by Architect; mock-up may remain as part of the Work.
   1. Mock up size: 1 frame
   2. Field Test: Conduct field test of mock up to determine watertightness in accordance with AAMA 503.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Handle products of this section in accordance with AAMA CW-10.

B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.09 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.10 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.

D. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 BASIS OF DESIGN - CURTAIN WALL SYSTEMS

A. Wind-Borne-Debris Resistance Tested:
   1. Basis of Design: Kawneer North America;1600UT SS. : www.kawneer.com/#sle.

2.02 CURTAIN WALL

A. Aluminum-Framed Curtain Wall: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
   1. Finish: High performance organic coatings.
      a. Factory finish surfaces that will be exposed in completed assemblies.
      b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
      c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
   2. Provide flush joints and corners, weathersealed, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for imposed loads.
   3. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
   4. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

B. Structural Performance Requirements: Design and size components to withstand the following load requirements without damage or permanent set.
   1. Movement: Accommodate the following movement without damage to components or deterioration of seals:
      a. Expansion and contraction caused by 180 degrees F surface temperature.
      b. Expansion and contraction caused by cycling temperature range of 170 degrees F over a 12 hour period.
      c. Movement of curtain wall relative to perimeter framing.
      d. Deflection of structural support framing, under permanent and dynamic loads.

C. Air Leakage Laboratory Test: Maximum of 0.06 cu ft/min sq ft of wall area, when tested in accordance with ASTM E283 at 6.27 psf pressure differential across assembly.

D. Thermal Performance Requirements:
   1. Condensation Resistance Factor of Framing: 65, minimum, measured in accordance with AAMA 1503.
   2. Overall U-value Including Glazing: 0.37 Btu/(hr sq ft deg F), maximum.

2.03 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.

B. Glazing: As specified in Section 088000.

2.04 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Sheet Aluminum: ASTM B209 (ASTM B209M).

C. Fasteners: Stainless steel; type as required or recommended by curtain wall manufacturer.

D. Firestopping: As specified in Section 078400.

E. Structural Sealant Glazing (SSG) Adhesive: Neutral curing, silicone sealant formulated for SSG applications in compliance with ASTM C1184 and structural glazing industry guidelines, ASTM C1401.
   1. SSG adhesive in compliance with ASTM C920; Type S - Single-component, Grade NS, Class 50, Use NT, G, and A.
   2. Ultimate Tensile Strength: Minimum of 50 psi as determined by test method ASTM C1135 under the following conditions.
      a. Exposure to air temperatures of 190 degrees F and minus 20 degrees F.
      b. Water immersion for seven (7) days, minimum.
      c. Exposure to weathering for 5,000 hours, minimum.
   3. Sealant Design Tensile Strength: 20 psi, maximum.
   4. Hardness: 20 to 60 with Type A-2 durometer in compliance with test method ASTM C661.
   5. SSG sealant tested for compatibility with glazing accessories in compliance with ASTM C1087, tested for accelerated weathering in compliance with ASTM C793, and in compliance with insulating glass secondary sealant design standards of ASTM C1249.
   6. Manufacturers:
      a. Provide product recommended by curtain wall manufacturer.

F. Weatherseal Sealant: Silicone, with adhesion in compliance with ASTM C794; compatible with glazing accessories.

G. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

H. Glazing Accessories: As specified in Section 088000.

2.05 FINISHES

A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.

B. Custom color: Champagne - Coordinate with aluminum storefront finish.

2.06 PART 3 EXECUTION

2.07 EXAMINATION

A. Verify dimensions, tolerances, and method of attachment with other related work.

B. Verify that curtain wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

C. Verify that anchorage devices have been properly installed and located.

2.08 INSTALLATION

A. Install curtain wall system in accordance with manufacturer's instructions.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

C. Provide alignment attachments and shims to permanently fasten system to building structure.

D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

E. Provide thermal isolation where components penetrate or disrupt building insulation.

F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.

G. Install firestopping at each floor slab edge.

H. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

2.09 TOLERANCES

A. Maximum Variation from Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.

B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

C. Sealant Space Between Curtain Wall Mullions and Adjacent Construction: Maximum of 3/4 inch and minimum of 1/4 inch.

2.10 FIELD QUALITY CONTROL

A. Provide services of curtain wall manufacturer's field representative to observe for proper installation of system and submit report.

B. Provide field testing of installed curtain wall system by independent laboratory in accordance with AAMA 503 during construction process and before installation of interior finishes.
   1. Perform a minimum of two tests in each designated area as directed by Architect.
   2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
   3. Field test for water penetration in accordance with ASTM E1105 with uniform static air pressure difference (Procedure A) not less than 4.18 psf.

C. Repair or replace curtain wall components that have failed designated field testing, and retest to verify performance complies with specified requirements.

2.11 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, take care to remove dirt from corners, and wipe surfaces clean.

C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

2.12 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

SECTION 085114
ALUMINUM WINDOWS

PART 1 - GENERAL

1.01 SUMMARY

A. The Conditions of the Contract, and all Sections of Division 1, are hereby made a part of this Section.

B. Section Includes: Factory glazed windows complete with insect screens, reinforcing, shims, anchors, and attachment devices.

C. Related Sections:
   1. Section 017419 Construction Waste Management.
   2. Section 018113 Sustainable Design Requirements.
   3. Division 7 Section “Joint Sealants.”
   4. Division 8 Section “Glass and Glazing.”

D. Coordinate work with that of all construction contractors affecting or affected by work of this Contract. Cooperate with such contractors to assure the steady progress of the Work.

E. Conduct field testing of windows when specified in Division 1 by an independent lab using AAMA field test procedures.

1.02 SYSTEM DESCRIPTION

A. General: In addition to requirements shown or specified comply with sightlines and profiles indicated on contract documents.

B. New Construction:
   1. Coordinate with the Architect and the general contractor that the opening dimensions will be maintained in accordance with the documents.
   2. It is the responsibility of the sub-contractor to allow proper clearance for the type of installation in accordance with the manufacturer's standard procedures.

1.03 DESIGN REQUIREMENTS:

A. Manufacturer/subcontractor is responsible for designing system, including installation instructions and necessary modifications to meet specified requirements and maintain visual design concepts.

B. Requirements shown by details are intended to establish basic dimension of unit, sight lines and profiles of members.

C. Provide assemblies free from rattles, wind whistles and noise due to thermal and structural movement and wind pressure.

D. Installation instructions are to take into account specified site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.

E. Provide for expansion and contraction due to structural movement without detriment to appearance or performance.

F. Evacuate water without infiltration to interior from exterior face of wall, water entering joints, and condensation occurring within windows, by drain holes and gutters of adequate size or other acceptable method.

G. Provide concealed fastening wherever possible.

1.04 PERFORMANCE REQUIREMENTS:

A. Requirements for aluminum windows, terminology and standards of performance, and fabrication and workmanship are those specified and recommended in AAMA/WDMA/CSA 101/I.S.2/A440-08 and applicable general recommendations published by AAMA. Conform to more stringent of specified AAMA standards and following:

B. Performance Class and Grade: AW-PG100

C. Air Infiltration Test: Not exceed 0.10 cubic feet per minute per square foot of vent area when tested at a pressure of 6.24 psf. Perform tests in accordance with ASTM E 283 with the sash in a closed and locked position.

D. Water Resistance Test: Subject window unit to a water resistance test in accordance with ASTM E 331 and E547 with no water passing the interior face of the window frame and no leakage as defined in the test method. Mount the glazed unit in its vertical position continuously supported around the perimeter and the sash placed in the fully closed and locked position. When a static pressure of 10 pounds per square foot has been stabilized, apply five gallons of water per square foot of window area to the exterior face of the unit for a period of 15 minutes.

E. Uniform Load Deflection Test: ASTM E 330 at 100 pounds per square foot: No member deflection more than 1/175 of its span. Maintain test load for a period of 10 seconds resulting in no glass breakage, permanent damage of fasteners, hardware parts, support arms, actuating mechanisms or any other damage causing the window to be inoperable.

F. Uniform Load Structural Test: Apply a minimum exterior and interior uniform load of 150 pounds per square foot to the entire outside surface of the test unit. Maintain this test load for a period of 10 seconds. Results: No glass breakage, permanent damage of fasteners, hardware parts, support arms, actuating mechanisms, or any other damage causing the window to be inoperable. And no permanent deformation of any frame or vent member in excess of 0.4 percent of its span.

G. “U” Factor: Perform computer simulation in accordance with NFRC 100-2004 on a 1200mm (48”) x 1500 mm (60”) maximum size window resulting in a whole window U-Factor of no more than 0.36 using soft coat low-E insulating glass, argon and a warm edge spacer.

H. Solar Heat Gain Coefficient: Perform computer simulation in accordance with NFRC 200-2004 on a 1200 mm (48”) x 1500 mm (60”) maximum size window resulting in a whole window SHGC of no more than 0.25 using soft coat low-E insulating glass, argon and a warm edge spacer.

I. Condensation Resistance Factor (CRF): Per AAMA 1503, the CRF shall not be less than 66 using soft coat low-E insulating glass, argon and a warm edge spacer.

J. Testing: Where manufacturer's standard window units comply with requirements and have been tested in accordance with specified AAMA/WDMA/CSA 101/I.S.2/A440-11 and NFRC tests, provide certification by AAMA certified independent laboratory showing compliance with such tests. Submit copy of the test report signed by the independent laboratory.

1.05 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, recommendations and standard details for aluminum window units.

B. Shop Drawings: Submit shop drawings, including location floor plans or exterior wall elevations showing all window openings, typical unit elevations at 1/4 inch scale, and half size detail sections of every typical composite member. Show anchors, hardware, operators and other components as appropriate if not included in manufacturer's standard data. Include glazing details and standards for factory glazed units.

1.06 SAMPLES:

A. Submit one sample of each required aluminum finish, on 3 x 3 inch long sections of extrusion shapes or aluminum sheets as required for window units.

B. Submit additional samples, if and as directed by Architect, to show fabrication techniques, workmanship of component parts, and design of hardware and other exposed auxiliary items.

C. Certifications: Submit certified test laboratory reports by independent laboratory substantiating performance of system. Include other supportive data as required or as necessary.

1.07 QUALIFICATIONS:

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in the section with a minimum of 5 years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least 10 years documented experience.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Store and handle windows, mullions, panels, hardware and all pertinent items in strict compliance with the manufacturer's instructions.

B. Protect units adequately against damage from the elements, construction activities and other hazards before, during and after installation.

1.09 WARRANTY

A. Manufacturer's Warrantees: Submit written warrantees from window manufacturer for the following:
   1. Windows: Windows furnished are certified as fully warranted against any defects in material or workmanship under normal use and service for a period of three (3) year from date of fabrication.
   2. Finish: The pigmented organic finishes on exposed surfaces of windows and component parts (such as panning, trim, mullions and the like) are certified as complying fully with requirements of AAMA 2605 and 2603 for pigmented organic coating and fully warranted against chipping, peeling, cracking or blistering for a period of ten (10) years from date of installation for 2605 and a period of five (5) years from date of installation for 2603.
   3. Insulated Glass: Warranted from visual obstruction due to internal moisture for a period of ten (10) years.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Optiq offset fixed window as manufactured by Kawneer

B. Thermal Barrier:
   1. Provides a continuous uninterrupted thermal barrier around the entire perimeter of the frame and all sash and not be bridged by any metal conductors at any point.
   2. The thermal barrier shall consist of glass reinforced polyamide nylon struts, mechanically crimped in the exterior and interior extrusions.
   3. Poured and de-bridged urethane thermal barriers shall not be permitted.

C. Requests for Substitution: Refer to Section 012500 - Substitution Procedures

2.02 MATERIALS

A. Aluminum Extrusions: Alloy and temper recommended by window manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221.

B. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.

C. Do not use exposed fasteners on exterior except where unavoidable for application of hardware. Match finish of adjoining metal.

D. Provide non-magnetic stainless steel, tamper-proof screws for exposed fasteners, where required, or special tamper-proof fasteners.

E. Locate fasteners so as not to disturb the thermal barrier construction of windows.

F. Anchors, Clips and Window Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate units of aluminum, non-magnetic stainless steel or hot-dip zinc coated steel or iron complying with ASTM A 123.

G. Compression Glazing Strips and Weatherstripping: At manufacturer's option, provide neoprene gaskets complying with ASTM D 2000 Designation 2BC415 to 3BC415, PVC gaskets complying with ASTM D2287, or expanded neoprene gaskets complying with ASTM C 509, Grade 4.

H. Sealant:
   1. Unless otherwise indicated for sealants required within fabricated window units, provide elastomeric type as recommended by window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Provide product complying with AAMA Specification 803 and 808.
   2. Refer to Division 7 for perimeter sealants between window units and surrounding construction.

2.03 WINDOW TYPES (OPERATION)

A. Fixed Aluminum Windows or Panel Frames (F):
   1. No special hardware required.

B. Glazing: Inside glazed window with an exterior sloped putty bead glazing return.
   1. Putty bead profile - Not less than 45º degree slope off the vertical plane of sash and shall extend inward a minimum of 0.312 inches.
   2. Snap on sloped beads are not permitted.

2.04 FABRICATION AND ACCESSORIES

A. General: Provide manufacturer's standard fabrication and accessories which comply with specifications. Include complete system for assembly of components and anchorage of window units and provide complete pre-glazing at the factory.

B. Window Material:
   1. Windows and Muntin Bars: Aluminum.
   2. Secondary Members (friction tabs, shoes, weatherstripping guides, etc.): Aluminum or a material compatible with aluminum.
   3. Main Frame: Nominal thickness of not less than 0.062 inches.
   4. Main Frame Sill: Nominal thickness of not less than 0.078 inches.
   5. Standard wall thickness tolerance: In accordance with the Aluminum Association.

C. Master Frame: Not less than 4.000 inches in depth. Provide continuous mid jamb aluminum thermally broken shim support for jamb extrusions.

D. Hardware:
   1. Material: Aluminum, stainless steel or other non-corrosive materials compatible with aluminum for hardware having component parts which are exposed. Cadmium or zinc-plated steel where used must be in accordance with ASTM Specification B 766 or B 633.

E. Thermal Barrier: : Provides a continuous uninterrupted dual polyimide strip thermal barrier around the entire perimeter of the frame and all sash members and shall not be bridged by any metal conductors at any point.

F. Construction:
   1. Assembly: Fabricate butt joints of the main frame butt type, coped and joined neatly and secured by means of screws anchored in integral ports. Seal main frame on the outside with a narrow joint sealant meeting AAMA 803 specification for narrow joint sealants.

G. Mullions - Other structural members: When mullion units occur, whether they are joined by integral mullions, independent mullions or by a combination of frame members, the resulting members must be capable of withstanding the load outlined under Uniform Load specified load requirements, without deflecting more than 1/175th of its span. When independent or integral mullions are used to join windows, the mullions shall contain a thermal barrier as specified. Evidence of compliance may be by mathematical calculations.

H. Glazing:

1. Pre-glaze all units (except insulated panels as required for installation) at the factory with insulated glass as follows:
    a. Typical Insulated Glass: Overall thickness of 1” inch with two lites of 1/4 inch as size and loading require.
        1) Primary Sealant: Polyisobutylene applied to the edge of the spacer.
        2) Secondary Sealant: Silicone.
        3) Spacer: Continuous metal spacer with formed corners and an in-line connector, containing desiccant. Spacer color to be manufactures standard unless stated otherwise.
        4) Airspace Fill: Argon
2. Glaze units to allow for glass replacement without the use of special tools.

I. Weather Protection:
1. Provide means of drainage for water and condensation which may accumulate in members of window units by use of two weeps per main frame member.
2. Do not position other material in such a manner as to obstruct the weep holes function.

J. Simulated True Muntin: The simulated muntin is a triple muntin system to simulate a true muntin appearance. Align muntins within the windows system and from window to window within an industry acceptable tolerance.
1. Exterior Grids: Hollow extruded aluminum, finish to match the window system. Trapezoidal profile 13/16 inches x 9/16 inches deep, or as shown on plans, with a 30 degree slope to match perimeter sash frame. Fasten grid to perimeter vent or frame at each contact point. Two piece snap grids are not permitted as a substitute. Use filler when space between back of grid and face of glass is typical 1/8 inch or larger.
2. Interior Grid: 0.875” x 0.062” flat bar, finish to match window system.
3. Muntin In-between Glass: Aluminum muntin in glass simulates glass perimeter spacer between interior and exterior applied grid. Machine and mechanically fasten the intersections of muntin grids.

2.05 CASING COVER SYSTEM: (UNITIZED RECEPTORS/SUBSILL, MULLIONS, SILLS ETC.)

A. Exterior Casing Covers (Panning, Receptors, Subsills, Sills): Provide extruded prime alloy aluminum 6063-T5 no less than nominal 0.078 inch wall thickness. Casing covers of less than 2 inches in depth from the window frame may be of 0.062 inch wall thickness. Provide aluminum sections of one piece designed to lock around the entire window frame for a weathertight connection.
1. Secure the casing cover section at the corners with stainless steel screws in integral screw ports with the joints back sealed using a compatible sealant.
2. Exposed screws, fasteners or pop rivets are not acceptable on the exterior of the casing cover system.

B. Exterior mullion covers: Extruded aluminum shape to provide rigidity, no less than nominal 0.062 inch wall thickness. Seal against the casing cover sections with continuous bulbous vinyl weatherstrip interlocked within the mullion cover.

C. Interior trim:
1. Interior Trim, Closures and Angles: As detailed, of extruded shapes no less than 0.062 inch nominal wall thickness.
2. Snap Trim: Supply in required lengths and attach with clips using slotted or elongated holes spaced no more than 18 inches on center. No exposed screws will be allowed on interior trim.

2.06 ALUMINUM WINDOW FINISHES

A. Finish Options:
1. Provide manufacturer’s standard 2 coat Fluoropolymer 70% Kynar baked on, electrostatically applied enamel coating at the exterior of the window system. Finish system to be applied over manufacturer’s standard substrate preparation including

cleaning, degreasing, and chromate conversion coating. Finish shall meet or exceed AAMA 2605.
   a. Exterior Color: FSU Beige
   b. Manufacturer's Code: UC76503
2. Provide manufacturer's standard acrylic baked on, electrostatically applied enamel coating at the interior of window system. Color to be selected from manufacturer's custom non-exotic color as selected by the Architect, applied over manufacturer's standard substrate preparation. Finish shall meet or exceed AAMA 2603.
   a. Interior Color: Custom color to be selected by Architect.
   b. Manufacturer's Code: To be determined.

PART 3 - EXECUTION

3.01 PREPARATION

A. Perform operations as necessary to prepare openings for proper installation and operation of new retrofit units or new construction units.

B. Verify openings are in accordance with shop drawings and Architects Drawings.

3.02 INSTALLATION

A. Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators and other components of work. In no case shall attachment to structure or to components of the window system be through or affect the thermal barriers of the window units.

B. Set units plumb, level and true to line, without warp or rack of frames or sash. Anchor securely in place. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action.

C. Wedge fiberglass insulation between frames of new windows and construction to remain, or between frames and new receptor as applicable. Compress fiberglass to no less than 50 percent of original thickness.

D. Set sill members and other members in bed of compound as shown, or with joint fillers or gaskets as shown, to provide weathertight construction. Seal units following installation and as required to provide weathertight system.

3.03 FIELD TESTING (IF APPLICABLE):

A. Test newly installed window openings for air and water infiltration in accordance with AAMA 502 with the owner, architect, window contractor and window manufacturer present. Testing shall be conducted by an AAMA accredited independent testing agency.

B. Test three (or as indicated) windows or openings. The first test shall be within 14 days of installation start. The second after 50% of the units have been installed and the third after 75% of the units have been installed.

C. Air leakage resistance shall be conducted at a uniform static air pressure of 6.24 psf. The maximum allowable rate of air leakage shall not exceed 0.15 CFM/sq. ft. (AAMA 502-12 (Section 5.2.4) specifies the allowable air infiltration rate to be 1.5 times the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rate for the Product Type and Performance class).

D. Water penetration resistance tests shall be conducted at a static Pressure of 6.66 psf (AAMA 502-12 (Section 5.3.2) specifies the water penetration resistance tests to be reduced to 2/3rds of the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rating for the Product Type and Performance class), or at 20% of the project cladding positive design pressure (calculated using ASCE 7). No water penetration shall occur as defined in Section 5.3.4 of AAMA 502.

3.04 ADJUST AND CLEAN

A. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and moving parts.

B. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.

C. Comply with all applicable laws, rules and regulations.

3.05 PROTECTION

A. Initiate all protection and other precautions required to ensure that window units will be without damage or deterioration (other than normal weathering) at time of acceptance.

B. Send to Architect, with copy to Owner, written recommendations for maintenance and protection of windows following Substantial Completion of Window Contract.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Automatic operators.

C. Related Sections:

1. Division 01 Section "General Conditions”.
   017419 “Construction Waste Management and Disposal”.
   018113 “Sustainable Design Requirements”.
2. Division 06 Section “Rough Carpentry”.
3. Division 06 Section “Finish Carpentry”.
4. Division 08 Section “Operations and Maintenance”.
5. Division 08 Section “Door Schedule”.
6. Division 08 Section “Door Hardware Schedule”.
7. Division 08 Section “Hollow Metal Doors and Frames”.
8. Division 08 Section “Interior Aluminum Doors and Frames”.
9. Division 08 Section “Flush Wood Doors”.
10. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.
11. Division 08 Section “Automatic Door Operators”.
12. Division 26 Section "Electrical”

D. Codes and References: Comply with the version adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ANSI/SDI A250.13 - Testing and Rating of Severe Windstorm Resistant Components for Swing Door Assemblies.
3. ICC/IBC - International Building Code.
4. NFPA 70 - National Electrical Code.
5. NFPA 80 - Fire Doors and Windows.
6. NFPA 101 - Life Safety Code.
7. NFPA 105 - Installation of Smoke Door Assemblies.
8. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

9. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
b. Complete (risers, point-to-point) access control system block wiring diagrams.
c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. LEED Requirements:

a. Product Data for Credit MRc2: For products having a product-specific Type III Environmental Product Declaration (EPD), provide documentation of the EPD. Include statement indicating costs for each product having an EPD.
b. Product Data for Credit MRc4: For products having a Health Product Declaration (HPD), provide documentation of the HPD. Include statement indicating costs for each product having an HPD.

2. Hurricane Resistant Openings (State of Florida): Within the State of Florida, provide copy of current State of Florida Product Approval as proof of compliance that doors, frames and hardware for exterior opening assemblies have been tested and approved for use at the wind load and design pressure and debris impact resistance level requirements specified for the Project.

a. Hurricane Resistant Components (State of Florida): Within the State of Florida, provide copy of independent, third party certified listing to ANSI A250.13.

3. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Hurricane Resistant Exterior Openings (State of Florida including the High Velocity Hurricane Zone (HVHZ)): Provide exterior door hardware as complete and tested assemblies, or component assemblies, including approved doors and frames specified under Section 081113 "Hollow Metal Doors and Frames", to meet the design pressures, debris impact resistance, and glass and glazing requirements as detailed in the current State of Florida building code sections applicable to the Project.

1. Each unit to bear third party permanent label in accordance with the Florida Building Code requirements.

G. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

H. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

I. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

J. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 MATERIALS

A. Hardware shall not have any visible manufacturer names on exposed materials, except cylinders, when the door is in a closed position.

2.3 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.

5. Manufacturers:

a. McKinney (MK) - TA/T4A Series, 5-knuckle.

2.4 CONTINUOUS HINGES

A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Manufacturers:.

a. Pemko (PE).

2.5 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

    a. Securitron (SU) - EL-CEPT Series.
    b. Von Duprin (VD) - EPT-10 Series.

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

    a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. McKinney (MK) - QC-C Series.
    b. Schlage (SC) - Connect.

2.6 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

    a. Rockwood (RO).

B. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.

2. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
3. Manufacturers:

    a. Rockwood (RO).

2.7 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

1. Manufacturers:

    a. dormakaba BEST (BE).
    b. No Substitution.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Match Facility Standard.

C. Small Format Interchangeable Cores: Provide small format interchangeable cores (SFIC) as specified, core insert, removable by use of a special key; usable with other manufacturers' cylinders.

D. Permanent Cores: Match standard. Reference Division 01 for material required under project. Installation to be included under Division 08 "Door Hardware" base bid package.

1. Small Format Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders.

E. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. New System: Key locks to a new key system as directed by the Owner.

F. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Three (3).
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).
4. Construction Control Keys (where required): Two (2).

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

5. Permanent Control Keys (where required): Two (2).

G. Construction Keying: Provide temporary keyed construction cores.

H. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.8 KEY CONTROL

A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.

1. Manufacturers:

a. Lund Equipment (LU).
b. MMF Industries (MM).
c. Telkee (TK).

2.9 MORTISE LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

a. Heavy duty 12-gauge wrought steel case.
b. Stainless steel 3/4" one-piece anti-friction reversible latchbolt with a one-piece hardened stainless steel 1” projection deadbolt.
c. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
d. Meets Florida Building Code FL2998 and UL Certification Directory ZHEM.R21744 for latching hardware for hurricane requirements.
e. Meets UL Certification Directory ZHLL.R21744 for products used in windstorm rated assemblies.
f. Status indicators inside, outside, or on both sides of doors as specified; available with wording for “locked/unlocked”, “vacant/occupied” or custom wording options. Indicator to be located above the cylinder with the inside thumb-turn not blocking the visibility of the indicator status.
g. Ten-year limited warranty for mechanical functions.

2. Electromechanical locksets shall have the following functions and features:

a. Universal Molex plug-in connectors that have standardized color-coded wiring and are available in fail safe or fail secure and operate from 12vdc to 24vdc regulated.

b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
c. Motorized electric latch retraction where the latchbolt retracts in 0.5 seconds of power being applied; removing power allows the latch to project back to the extended position. Motorized latch retraction force exceeds ANSI/BHMA 50 lbs. warped door test.
d. Options to be available for request-to-exit or enter signaling, latchbolt and deadbolt monitoring.
e. Optional high security monitoring with internal end-of-line monitoring alongside deadbolt privacy and integrated door position monitoring.
f. Two-year limited warranty on electrified functions.

3. Manufacturers:

a. Corbin Russwin Hardware (RU) - ML2000 Series.
b. dormakaba BEST (BE) - 45H Series.
c. Sargent Manufacturing (SA) - 8200 Series.

2.10 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.11 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper

fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.

4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide exit devices with functions and features as follows:

    a. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
    b. Meets Florida Building Code FL2998 and UL Certification Directory ZHEM.R21744 for latching hardware for hurricane requirements.
    c. Five-year limited warranty for mechanical features.

2. Electromechanical exit devices shall have the following functions and features:

    a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
    b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
    c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
    d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.
    e. Five-year limited warranty for electromechanical features.

3. Manufacturers:

    a. Von Duprin (VD) - 35A/98 XP Series.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

b. No Substitution.

2.12 SURFACE DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Manufacturers:

a. Corbin Russwin Hardware (RU) - DC6000 Series.
b. LCN Closers (LC) - 1450 Series.
c. Sargent Manufacturing (SA) - 1431 Series.

2.13 ELECTROMECHANICAL DOOR OPERATORS

A. Electromechanical Door Operators (High Traffic): Provide ANSI/BHMA A156.19 Certified Products Directory (CPD) listed low energy operators that are UL325/991 and UL10C certified and comply with requirements for the Americans with Disabilities Act (ADA). Operators shall accommodate openings up to 250 pounds and 48” wide. Provide accessories such as custom templates, special mounting brackets, spacers and drop plates as needed for proper installation. Operators shall accommodate openings up to 200 pounds and 48” wide. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide operators with features as follows:

a. Non-handed with push and pull side mounting.
b. Activation by push button, hands-free or radio frequency devices.
c. Adjustable opening force and closing power.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

d. Two-year limited warranty.
e. Wi-Fi interface where the operator is a secure, password protected WiFi hot spot with no connection to building's IT required.
   1) Simple setup with no app required.
   2) View status and make adjustments without removing the cover.
   3) Built-in logic to support single use restroom applications with no external relay boards, logic modules, position switches required.
f. Mounting backplate to simplify and speed up installation.
g. Integration with access control systems.

2. Operators shall have the following functionality:

a. Adjustable Hold Open: Amount of time a door will stay in the full open position after an activation.
b. Blow Open for Smoke Ventilation: Door opens when signal is received from alarm system allowing air or smoke to flow through opening. Door will stay open until signal from alarm system is stopped.
c. Emergency Interface Relay: Door closes and ignores any activation input until signal is discontinued.
d. Infinite Hold Open: Door will hold open at set position until power is turned off.
e. Latch Assist: At closed position, after an activation, the door is pulled in. After the door has closed, the door is pulled in to assist with latch release/engagement.
f. Obstruction Detection: Door closes if it hits an obstruction while opening; door will reverse to open position if it hits an obstruction while closing. Door will stop once it hits an obstruction and will rest against the obstruction until removed.
g. Open Delay: Delays operator opening for locking hardware.
h. Outside Wall Switch Disable: When contact is closed, outside wall switch is disabled.
i. Power Assist: Senses the door is being opened manually and applies small amount of power to assist the user in opening the door with force less than 5 lbs. The door opens only as far as it is moved manually, then closes once released.
j. Power Close: Additional force to assist door closing between 7° and 2°.
k. Presence Detector Input: Input for external sensor to detect presence at door open or close position only.
l. Push & Go: As the door is manually opened, the operator "senses" movement and opens door to the full-open position.
m. Selector Mode Switch: Off disables the signal inputs unless Blow Open is activated, on activates the signal inputs, hold open activates the unit (unless Blow Closed is activated) to the hold open position.
n. Vestibule Delay: When the wall switch is pressed, first door in vestibule will open. Second door will open once vestibule door delay has expired. Delay is adjustable.
o. Executive Mode Feature: When the door receives an activation signal it opens and remains open until either a second signal is received, or the door is manually moved in closing direction.

3. Manufacturers:

a. Norton Rixson (NO) - 6300 Series.

2.14 ARCHITECTURAL TRIM AND ACCESSORIES

A. Door, Frame and Wall Protective Trim: ANSI/BHMA A156.6, protective products as specified in the hardware sets. Door protection plates shall be not more than 2" less than door width on stop

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

side and 1" less door width on the pull side or on stop side of pairs of doors. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide protective trim with functions and features as follows:

   a. Meets ADA requirements for smooth bottom door surfaces.
   b. UL Classified options for use on fire-rated doors up to 3 hours.
   c. Fabricated from stainless steel, brass, bronze, aluminum, or high-impact plastic.
   d. Available in a variety of sizes, finishes, and profiles to suit aesthetic and functional requirements.
   e. Designed to protect doors, frames, and adjacent walls from damage due to impact, abrasion, or traffic.
   f. Fasteners included; adhesive-backed options available for select models.
   g. Ten-year limited warranty.

2. Manufacturers:

   a. Hager Companies (HA).
   b. Rockwood (RO).
   c. Trimco (TC).

2.15 DOOR STOPS AND HOLDERS

A. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

   a. Hager Companies (HA).
   b. Rockwood (RO).
   c. Trimco (TC).

B. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

   a. Norton Rixson (NO).

2.16 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Hurricane and Storm Shelter Compliance: Devices to be U.L. listed for windstorm assemblies where applicable. Provide the appropriate hurricane or storm shelter products that have been independently third party tested, certified, and labeled to meet state and local windstorm building codes applicable to project.

G. Manufacturers:

1. National Guard Products (NG).
2. Pemko (PE).
3. Reese Enterprises, Inc. (RE).

2.17 ELECTRONIC ACCESSORIES

A. Key Switches: Key switches furnished standard with stainless steel single gang face plate with a 12/24VDC bi-color LED indicator. Integral backing bracket permits integration with any 1 1/4" or 1 1/2" mortise type cylinder. Key switches available as momentary or maintained action and in narrow face plate options.

1. Manufacturers:

a. Securitron (SU) - MK Series.

B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

a. Sargent Manufacturing (SA) - 3280 Series.
b. Securitron (SU) - DPS Series.

C. Power Supplies: Provide Nationally Recognized Testing Laboratory Listed 12VDC or 24VDC (field selectable) filtered and regulated power supplies. Include battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Manufacturers:

a. Von Duprin (VD) - PS.

2.18 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.19 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

RECEIVED ALLSTATE CONSTRUCTION 2026-08-26

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. VO - Von Duprin
4. SU - Securitron
5. RO - Rockwood
6. RU - Corbin Russwin
7. BE - BEST Locks & Closers
8. NO - Norton Rixson
9. OT - Other
10. SC - Schlage

Hardware Sets

Set: 1.0
In Phase 1 by Others
Doors: 0100, 0200, 0300, 0400
Description: Ext, Alum, PR, Corridor/Stair/Teaching, Access Control/ADO

2	Continuous Hinge	DFM__SLF-HD1 PT	US15	PE
2	Electric Power Transfer	EPT10 CON	695	VO
1	Mullion	HW KR9954	619	VO
1	Rim Exit MELR	CD HH QEL RX 99-LNL 996L-NL	619	VO
1	Rim Exit Only	CD HH RX 99EO	619	VO
2	Best Core	As Required	619	BE
2	Best Cylinder	As Required	619	BE
1	Surface Closer - Uni	DC6200 A11	619	RU
2	Automatic Opener	6300 Series	690	NO
1	Gasketing	By Door/Frame Manufacturer		OT
1	Rain Guard	346-10BE		PE
2	Sweep	315-10BE-N		PE
1	Threshold	2005-10BE-T		PE
2	Wire Harness	CON-192		SC
2	Wire Harness	CONxx		SC
1	Door Switch	506		NO
1	Switch Post	500	690	NO
1	Card Reader	By Security		OT
2	Position Switch	DPS-M-BK		SU
1	Keyswitch	MKA		SU
1	Power Supply	PS914 900-2RS-FA		VO

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Exterior doors shall meet FBC standards for hurricane code compliance. The hardware specified is listed as a basis of design. If alternate hardware is proposed, please provide third-party test results and compliance information to architect.

Operational Narrative:
1. Doors normally closed and secure.
2. Authorized access by card reader retracting exit device latch and initiating operator.
3. Exit device latch can be electrically held retracted for open access.
4. ADA access by actuator switch.
5. In locked condition, actuator energized only upon valid card reader presentation.
6. Egress free for immediate exit. ADA egress by actuator switch.
7. REX switch in push rail allows authorized exit without alarm condition.
8. Door position switch monitor open/closed status.
9. Exit device latch releases (fail secure) in event of power loss.
10. Keyed cylinder override for emergency access.
11. Keyswitch to power operator on/off.

Set: 2.0 – NOT USED

Set: 3.0
Doors: 0308A, 0407A
Description: Alum, PR, Office Suite, Access Control

6	Hinge, Full Mortise	TA2714xNRP 4-1/2" x 4-1/2"	US15	MK
1	Electric Power Transfer	EL-CEPT	613E	SU
2	Flush Bolt	555	US15	RO
1	Dust Proof Strike	570	US15	RO
1	Fail Secure Lock	ML20906-SEC NSN M92 LC	619	RU
1	Best Core	As Required	619	BE
2	Surface Closer - Uni	DC6200 A11	690	RU
1	Gasketing	By Door/Frame Manufacturer		OT
1	ElectroLynx Harness	QC-C**** x Length Required		MK
1	ElectroLynx Harness	QC-C1500P		MK
1	Card Reader	By Security		OT
2	Position Switch	DPS-M-BK		SU
1	Power Supply	PS914 900-2RS-FA		VO

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Operational Narrative:
1. Door normally closed and secure.
2. Authorized access by card reader unlocking lever trim.
3. Egress free for immediate exit.
4. Lockset REX switch allows authorized exit without alarm condition.
5. Door position switch monitors open/closed status.
6. Lever remains locked (fail secure) in event of power loss.
7. Keyed cylinder override for emergency access.

Set: 4.0
Doors: 0007, 0104, 0106, 0205, 0210B, 0306, 0311B, 0406, 0410B
Description: Alum, Teaching/Breakroom/Conference, Access Control

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Electric Power Transfer	EL-CEPT	613E	SU
1	Fail Secure Lock	ML20906-SEC NSN M92 LC	619	RU
1	Best Core	As Required	619	BE
1	Surface Closer - Reg	DC6200 A10	690	RU
1	Wall Stop	409/446	US15	RO
1	Gasketing	By Door/Frame Manufacturer		OT
1	ElectroLynx Harness	QC-C**** x Length Required		MK
1	ElectroLynx Harness	QC-C1500P		MK
1	Card Reader	By Security		OT
1	Position Switch	DPS-M-BK		SU
1	Power Supply	PS914 900-2RS-FA		VO

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Operational Narrative:
1. Door normally closed and secure.
2. Authorized access by card reader unlocking lever trim.
3. Egress free for immediate exit.
4. Lockset REX switch allows authorized exit without alarm condition.
5. Door position switch monitors open/closed status.
6. Lever remains locked (fail secure) in event of power loss.

7. Keyed cylinder override for emergency access.

Set: 5.0
Doors: 0008, 0009, 0105A, 0206A, 0207, 0305, ,0307A, 0405
Description: Alum, Admin/Library/Learning/Office

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Electric Power Transfer	EL-CEPT	613E	SU
1	Fail Secure Lock	ML20906-SEC NSN M92 LC	619	RU
1	Best Core	As Required	619	BE
1	Concealed Overhead Holder/Stop	6ADJ-x36	690	NO
1	Surface Closer - Reg	DC6200 A10	690	RU
1	Gasketing	By Door/Frame Manufacturer		OT
1	ElectroLynx Harness	QC-C**** x Length Required		MK
1	ElectroLynx Harness	QC-C1500P		MK
1	Card Reader	By Security		OT
1	Position Switch	DPS-M-BK		SU
1	Power Supply	PS914 900-2RS-FA		VO

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Operational Narrative:
1. Door normally closed and secure.
2. Authorized access by card reader unlocking lever trim.
3. Egress free for immediate exit.
4. Lockset REX switch allows authorized exit without alarm condition.
5. Door position switch monitors open/closed status.
6. Lever remains locked (fail secure) in event of power loss.
7. Keyed cylinder override for emergency access.

Set: 6.0
Doors: 0210A, 0311A, 0410A
Description: PR, Alum, Teaching, Access Control

6	Hinge, Full Mortise, Hvy Wt	T4A3786xNRP 4-1/2" x 4-1/2"	US15	MK
2	Electric Power Transfer	EL-CEPT	613E	SU
1	Mullion	KR9954	689	VO
1	Rim Exit MELR	QEL RX 99-LNL 996L-NL	619	VO
1	Rim Exit Only	RX 99EO	619	VO
2	Best Core	As Required	619	BE
2	Best Cylinder	As Required	619	BE
2	Surface Closer - Uni	DC6200 A11	690	RU
1	Gasketing	By Door/Frame Manufacturer		OT
2	Wire Harness	CON-192		SC
2	Wire Harness	CONxx		SC
1	Card Reader	By Security		OT
2	Position Switch	DPS-M-BK		SU
1	Power Supply	PS914 900-2RS-FA		VO

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Operational Narrative:
1. Doors normally closed and secure.
2. Authorized access by card reader retracting exit device latch.
3. Egress free for immediate exit.
4. REX switch in push rail allows authorized exit without alarm condition.
5. Door position switches monitor open/closed status.
6. Exit device latches release (fail secure) in event of power loss.
7. Keyed cylinder override for emergency access.

Set: 7.0
Doors: 0109A, 0109C
Description: Rated, Alum, Teaching, Access Control

3	Hinge, Full Mortise, Hvy Wt	T4A3786xNRP 4-1/2" x 4-1/2"	US15	MK
1	Electric Power Transfer	EPT10 CON	695	VO
1	Rated Rim Exit MELR	QEL RX 99-LNL-F 996L-NL	619	VO
1	Best Core	As Required	619	BE
1	Best Cylinder	As Required	619	BE
1	Surface Closer - Uni	DC6200 A11	690	RU
1	Gasketing	By Door/Frame Manufacturer		OT
1	Wire Harness	CON-192		SC
1	Wire Harness	CONxx		SC
1	Card Reader	By Security		OT
1	Position Switch	DPS-M-BK		SU
1	Power Supply	PS914 900-2RS-FA		VO

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Operational Narrative:
1. Doors normally closed and secure.
2. Authorized access by card reader retracting exit device latch.
3. Egress free for immediate exit.
4. REX switch in push rail allows authorized exit without alarm condition.
5. Door position switches monitor open/closed status.
6. Exit device latches release (fail secure) in event of power loss.
7. Keyed cylinder override for emergency access.

Set: 8.0 In Phase 1 by Others
Doors: S0102B
Description: Ext, Alum, PR, Rated Stair, Exit Only

2	Continuous Hinge	DFM__SLF-HD1		PE
1	Mullion	HW KR9954	689	VO
2	Rim Exit Only	CD HH RX 99EO	619	VO
2	Best Core	As Required	619	BE
2	Best Cylinder	As Required	619	BE
2	Surface Closer - Uni	DC6200 A11	690	RU
1	Gasketing	By Door/Frame Manufacturer		OT
1	Rain Guard	346-10BE		PE
2	Sweep	315-10BE-N		PE
1	Threshold	2005-10BE-T		PE

In Phase 1 by Others

Notes: The hardware specified is listed as a basis of design. Coordinate requirements with Alum Door/Frame Manufacturer.

Exterior doors shall meet FBC standards for hurricane code compliance. The hardware specified is listed as a basis of design. If alternate hardware is proposed, please provide third-party test results and compliance information to architect.

Set: 9.0 In Phase 1 by Others
Doors: S0001, S0201, S0301, S0401
Description: Rated Stair

3	Hinge, Full Mortise, Hvy Wt	T4A3786xNRP 4-1/2" x 4-1/2"	US15	MK
1	Fire Rated Rim Exit, Passage	99-LBE-F 996L-BE	619	VO
1	Best Core	As Required	619	BE
1	Best Cylinder	As Required	619	BE
1	Surface Closer - Reg	DC6200 A10	690	RU
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US15	RO
1	Wall Stop	409/446	US15	RO
1	Gasketing	S88BL		PE

Set: 10.0 In Phase 1 by Others
Doors: S0002, S0101, S0102A, S0202, S0302, S0402
Description: Rated Stair 1

3	Hinge, Full Mortise, Hvy Wt	T4A3786xNRP 4-1/2" x 4-1/2"	US15	MK
1	Fire Rated Rim Exit, Passage	99-LBE-F 996L-BE	619	VO
1	Best Core	As Required	619	BE
1	Best Cylinder	As Required	619	BE
1	Surface Closer - Uni	DC6200 A11	690	RU
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US15	RO
1	Gasketing	S88BL		PE

Set: 11.0
Doors: 0207D
Description: Breakroom

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Passage Lock	ML2051 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Best Cylinder	As Required	619	BE
1	Surface Closer - Reg	DC6200 A10	690	RU
1	Wall Stop	409/446	US15	RO
3	Silencer	608-RKW		RO

Set: 12.0 In Phase 1 by Others
Doors: 0010A, 0010C, 0101B
Description: PR, Steam Room/Storage/ Elec Vault

6	Hinge, Full Mortise	TA2714xNRP 4-1/2" x 4-1/2"	US15	MK
2	Flush Bolt	555	US15	RO
1	Dust Proof Strike	570	US15	RO
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE

In Phase 1 by Others

2	Surface Closer - Uni	DC6200 A11	690	RU
2	Kick Plate	K1050 10" x 2" LDW CSK BEV	10BE	RO
2	Astragal	303-10BE-PK		PE
2	Silencer	608-RKW		RO

Set: 12.1
Doors: 0109E, 0109F
Description: PR, Storage

6	Hinge, Full Mortise	TA2714xNRP 4-1/2" x 4-1/2"	US15	MK
2	Flush Bolt	555	US15	RO
1	Dust Proof Strike	570	US15	RO
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE
2	Astragal	303-10BE-PK		PE
2	Silencer	608-RKW		RO

Set: 13.0
Doors: 0010.1, 0209, 0310, 0409
Description: PR, Mechanical

In Phase 1 by Others

6	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
2	Flush Bolt	555	US15	RO
1	Dust Proof Strike	570	US15	RO
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE
2	Concealed Overhead Holder/Stop	6ADJ-x36	690	NO
2	Surface Closer - Reg	DC6200 A10	690	RU
2	Kick Plate	K1050 10" x 2" LDW CSK BEV	US15	RO
2	Astragal	303-10BE-PK		PE
2	Silencer	608-RKW		RO

Set: 14.0
Doors: 0100A, 0200A, 0300A, 0400A
Description: Shell Space

In Phase 1 by Others

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Wall Stop	409/446	US15	RO
3	Silencer	608-RKW		RO

Set: 15.0
Doors: 0005, 0011, 0105E, 0109D, 0203, 0207E 0303, 0403,

In Phase 1 by Others

3	Hinge, Full Mortise	TA2714xNRP 4-1/2" x 4-1/2"	US15	MK
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Concealed Overhead Holder/Stop	6ADJ-x36	690	NO
3	Silencer	608-RKW		RO

Set: 16.0
Doors: 0002, 0008A, 0101, 0108, 0201, 0208, 0301, 0309, 0401, 0408

In Phase 1 by Others

Description: Campus IT/Elec/Storage

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Surface Closer - Reg	DC6200 A10	690	RU
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US15	RO
1	Wall Stop	409/446	US15	RO
3	Silencer	608-RKW		RO

Set: 17.0 In Phase 1 by Others
Doors: 0010.2
Description: Mechanical

3	Hinge, Full Mortise	TA2714xNRP 4-1/2" x 4-1/2"	US15	MK
1	Storeroom Lock	ML2057 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Surface Closer - Uni	DC6200 A11	690	RU
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US15	RO
3	Silencer	608-RKW		RO

Set: 18.0
Doors: 0105B, 0105C, 0105D, 0105F, 0105G, 0107A, 0107B, 0107C, 0107D, 0206B, 0206C, 0207B, 0207C, 0207F, 0207G, 0207H, 0207J, 0207K, 0207L, 0307C. 0307D, 0308B, 0308C, 0308D, 0308E, 0308F, 0308G, 0308H, 0308J, 0407B, 0407C, 0407D, 0407E, 0407F, 0407G, 0407H, 0407J
Description: Office/Advising

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Office Lock	ML2051 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Wall Stop	409/446	US15	RO
3	Silencer	608-RKW		RO

~~**Set: 18.1**~~
~~Doors: 0308B~~
~~Description: Executive Director~~

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Office Lock	ML2051 NSN LC	619	RU
1	Best Core	As Required	619	BE
1	Concealed Overhead Holder/Stop	6ADJ-x36	690	NO
3	Silencer	608-RKW		RO

Set: 19.0
Doors: 0004, 0006, 0102, 0103, 0202, 0204, 0302, 0304, 0402, 0404
Description: Men's/Women's Restroom

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US15	MK
1	Pull Plate	111x70C	US15	RO
1	Push Plate	81	US15	RO
1	Surface Closer - Reg	DC6200 A10	690	RU
1	Mop Plate	K1050 4" x 1" LDW CSK BEV	US15	RO
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US15	RO
1	Wall Stop	409/446	US15	RO

1 Gasketing	S88BL	PE

END OF SECTION 087100

RECEIVED ALLSTATE CONSTRUCTION 2026-04-02

SECTION 087113
AUTOMATIC DOOR OPERATORS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This section includes the following:
   1. Low-energy door operators for swinging doors.

B. Related Sections:
   1. Section 017419 Construction Waste Management.
   2. Section 018113 Sustainable Design Requirements.
   3. Division 7 Sections for caulking to the extent not specified in this section.
   4. Division 8 Section “Aluminum-Framed Entrances and Storefronts” for entrances furnished separately in Division 8 Section.
   5. Division 8 Section “Door Hardware” for hardware to the extent not specified in this Section.
   6. Division 26 and 28 Sections for electrical connections including conduit and wiring for automatic entrance door operators and access control devices.

1.03 REFERENCES

A. References: Comply with the version year adopted by the Authority Having Jurisdiction.
   1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
   2. ICC/IBC - International Building Code.
   3. CUL - Approved for use in Canada.
   4. NFPA 70 - National Electrical Code.
   5. NFPA 80 - Fire Doors and Windows.
   6. NFPA 101 - Life Safety Code.
   7. NFPA 105 - Installation of Smoke Door Assemblies.

B. American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA).
   1. ANSI/BHMA A156.19 Standards for Power Assist and Low Energy Power Operated Doors.
   2. ANSI/BHMA A156.10 American National Standard for Power Operated Pedestrian Doors.

C. Underwriters Laboratories (UL).
   1. UL Listed R-9469 Fire Door Operator with Automatic Closer.
   2. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
   3. UL991 Listed - Tests for Safety-Related Controls Employing Solid-State Devices.

D. American Association of Automatic Door Manufacturers (AAADM).

E. American Society for Testing and Materials (ASTM).
   1. ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
   2. ASTM B209 Standard Specification for Aluminum and Aluminum Allow Sheet and Plate.

F. National Association of Architectural Metal Manufacturers (NAMM).
   1. Metal Finishes Manual for Architectural Metal Products.

1.04 DEFINITIONS

A. Double Egress Doors: A pair of doors that simultaneously swing with the two doors moving in opposite directions with no mullion between them.

RECEIVED ALLSTATE CONSTRUCTION 2026-04-02

B. Double Swing Doors: A pair of doors that swing with the two doors moving in opposite directions with a mullion between them; each door functioning as a single swing door.

C. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.
   1. Consciously initiating the powered opening of a low energy door using acceptable methods including wall mounted switches such as push plates and controlled access devices such as keypads, card readers and key switches.

D. Safety Device: A device that detects the presence of an object or person within a zone where injury could occur and provides a signal to stop the movement of the door.

E. AAADM: American Association of Automatic Door Manufacturers.

1.05 PERFORMANCE REQUIREMENTS

A. General: Provide door operators that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems.

B. Automatic door equipment accommodates medium pedestrian traffic and up to 200 pound (91 kg) weight of doors, 48 inches (1219 mm) maximum door width.

C. Operator capable of operating within temperature ranges of -20 deg F (-29 deg C) and 160 deg F (71deg C).

D. Opening Force requirements: Doors shall open with a manual force, not to exceed 30lbf (133N) to set the door in motion and 15 lbf to fully open the door applied at 1" (25 mm) from the latch edge of the door. The force required to prevent a stopped door from opening or closing shall not exceed 15 lbf (67 N) measured 1" (25 mm) from the latch edge of the door at any point during opening or closing.

E. Closing Time:
   1. Doors shall be field adjustable to close from 90 degrees to 10 degrees in 3 seconds or longer as applicable per ANSI/BHMA A156.19 standards.
   2. Doors shall be field adjusted to close from 10 degrees to fully closed in not less than 1.5 seconds.

1.06 SUBMITTALS

A. Comply with Division 01 - Submittal Procedures.

B. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, fabrication, operational descriptions and finishes.

C. Shop Drawings: Submit manufacturer's shop drawings, including elevations, sections and details, indicating dimensions, materials, operator, motion/presence sensor control device, anchors, hardware, finish, options and accessories.
   1. Indicate required clearances, and location and size of each field connection.
   2. Indicate locations and elevations of entrances showing activation and safety devices.
   3. Wiring Diagrams: For power, signal, and activation / safety device wiring.

D. Samples: Submit manufacturer's samples of aluminum finish.

E. Manufacturers Field Reports: Submit manufacturer's field reports from AAADM certified technician of inspection and approval of doors for compliance with ANSI/BHMA A156.19 after completion of installation.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door opening installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include spare parts list.

RECEIVED ALLSTATE CONSTRUCTION 2026-04-02

G. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

1.07 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 10 years of documented experience in manufacturing of equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
   1. A manufacturer with company certificate issued by AAADM.

B. Installer Qualifications: Installers, trained by the primary product manufacturers, with a minimum 5 years documented experience installing and maintenance of units similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Certified Inspector Qualifications: Certified by AAADM.

D. Source Limitations for Power Door Operators: Obtain each type of door, frame, operator and sensor components specified in this Section from a single source, same manufacturer unless otherwise indicated.

E. Certifications: Operators shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards.
   1. ANSI/BHMA A156.19 American National Standard for Power Assist and Low Energy Operated Doors.
   2. NFPA 101 - Life Safety Code.
   3. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
   4. UL Listed R-9469 Fire Door Operator with Automatic Closer.

F. Emergency Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrance doors serving as a required means of egress.

1.08 COORDINATION

A. Coordinate door operators with doors, frames and related work to ensure proper size, thickness, hand, function and finish. Coordinate hardware for automatic entrances with hardware required for rest of the project.

B. Electrical System Roughing-in: Coordinate layout and installation of power door operators with connections to power supplies and access control system as applicable.

1.09 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Automatic Door Operators shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.

C. During the warranty period a factory-trained technician shall perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.

D. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal business hours.

E. Manufacturer shall have in place a dispatch procedure that shall be available 24 hours a Day, 7 Days a week for emergency call back service.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Besam Entrance Solutions, 1900 Airport Road, Monroe, North Carolina 28110. Toll Free (877) SPEC-123. Phone (704) 290-5520 Fax (704) 290- 5555 Website www.besam-usa.com contact: specdesk@besam-usa.com

B. Substitutions: Requests for substitution and product approval in compliance with the specifications must be submitted in writing and in accordance with the procedures outlined in Division 1, Section, "Substitution Procedures". Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.02 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated, as indicated below:
   1. Extruded Aluminum, Alloy 6063-T5.

2.03 LOW ENERGY SWING DOOR OPERATOR

A. Model: Besam SW100 low energy power door operator (Basis of Design):
   1. Configuration: Operator to control single swinging doors and pairs of swinging doors as indicated on the drawings and specified below:
      a. Traffic Pattern: Two way.
      b. Pairs of Doors: Simultaneous swing.
   2. Door Operator: Electro-mechanical, non-handed operator, powered by 24 volt, 1/8 hp motor. Spring shall be adjustable to compensate for different manual push forces required on varying door widths.
      1) Operator Housing: Operator is completely contained in a 5-3/16" (132mm) deep x 4-5/16" (110mm) high extruded aluminum housing.
         (a) Header Length: Extended Width,

full width of door frame.

         (b) Connecting Hardware: Steel arm from the operator, secured to the top of the swing door.
      2) UL Listed R-9469 Fire Door Operator with Automatic Closer.
      3) Electrical Characteristics: Nominal current draw 75 watts (.625 amps at 120 VAC), built-in thermal overload protection.
      4) Battery Convenience Mode: Operator can maintain continuous operation by battery power during power failure. Battery is continuously monitored and will provide a notification if the battery is not working properly.
      5) Digital Cycle Counter: Battery powered, 7 digit LCD cycle counter with a reset feature to track door usage cycles. The battery has a 15+ year life span.
   3. Door Operation:
      1) Opening Cycle: The adjustable speed operator shall control the door opening to the back check position, where the opening speed is reduced.
      2) Hold Open: The operator shall stop and hold the door open at the selected door opening angle for an adjustable period of time.
      3) Closing Cycle: Power closing shall be provided by means of clock spring and motor. The door will slow to low speed at latch check before it reaches the fully closed position.
      4) Obstruction Control: The operator will stop and reverse the door movement.
      5) Electronic Dampening: Operator to include standard electric dampening system which automatically counteracts additional forces applied to the door during the opening or closing cycle by reducing door speed.

6) Stack Pressure Compensation: Electronic control allows for increases of forces to overcome minor stack pressures while compensating to lower manual push forces when the door is used in manual mode in order to comply with ANSI/BHMA A156.19.
7) Lock retry circuit: If attempt to fully close the door is unsuccessful, the operator will automatically reverse open 10 degrees and reclose in an attempt to successfully close the door.
8) Electronic Controls: Microprocessor controlled unit shall control the operation and switching of the swing power operator. The microprocessor unit provides low voltage power supply for all means of actuation. The controls include time delay (1.5 to 30 seconds) for normal cycle.

4. Operator Interface:
1) Safety Sensor Integration: To interface operator with door mounted reactivation safety device.
2) Electric Strike Integration: To interface operator with electrified door hardware.

2.04 ACTIVATION BY SMOKE EVACUATION SYSTEM

A. General: Provide activation by the smoke evacuation system and/or fire detection system. Coordinate other required activation devices and safety devices with door operation and door operator mechanisms.

B. Smoke evacuation system and/or fire detection system shall provide activation of the operator by means of a normally open maintained contact to control the opening and closing of the door systems in the event of an alarm condition. Doors are to be held open until the smoke evacuation/fire detection system is reset.

2.05 ACTIVATION AND SAFETY DEVICES

A. General: Provide the types of activation and safety devices specified in accordance with ANSI/BHMA standards, for the condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate activation and safety devices with door operation and door operator mechanisms.

B. Knowing Act Activation:
1. Push Plate: Hard wired, 4-1/2 inch square stainless steel push plate switches engraved with "Push to Open" with a blue handicap logo.

C. Manual Operation:
1. Operator shall provide power assist function to the doors to provide ease of manual operational forces.

D. Safety Devices:
1. Door Mounted Presence Detector: Shall be a door mounted (mounted at top of each door), infrared presence safety device utilizing a “distance measurement” method of detection; adjustable to provide detection field sizes and functions required by ANSI/BHMA A156.10. Unit to provide detection during the travel of the door.
2. Presence Detector: Shall be a header mounted, overhead infrared presence safety device utilizing a combination of focused and diffused infrared technology for detection; adjustable to provide detection field sizes and functions required by ANSI/BHMA A156.10. Unit to provide the following two independently adjustable patterns of detection:
a. The door closed position covering the area on the swing side of the door.
b. The door open position including an area of detection that reaches through the threshold toward the non-swing side of the door.
c. This unit is not active during the door closing cycle.

2.06 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.07 ALUMINUM FINISHES

A. Door Operator Enclosure:
   1. Painted Finish:
      a. Kynar finish, 2 coat, to match architect's sample.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of swinging power operated doors.

B. Examine roughing-in for electrical source power to verify actual locations of wiring connections.

C. Proceed only after such discrepancies or conflicts have been resolved.

3.02 INSTALLATION

A. Do not install damaged components. Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints.

B. Operators: Install door operators plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
   1. Install surface mounted hardware using concealed fasteners to greatest extent possible.
   2. Set headers, carrier assemblies, tracks, operating brackets and guides level and true to location with anchorage for permanent support.

C. Door Operators: Connect door operators to electrical power distribution system and [smoke evacuation system and/or fire detection system] as specified in Division 26 Sections.

D. Sealants: Comply with requirements specified in division 7 Section "Joint Sealants" to seal between the operator housing and the adjacent wall surface to provide a weather tight closure.

E. Signage: Apply signage on both sides of each door and sidelite as required by ANSI/BHMA A156.19 for low energy operators, and manufacturer's installation instructions.

3.03 FIELD QUALITY CONTROL

A. Manufacturers Field Services:
   1. Manufacturer's representative shall provide technical assistance and guidance for installation of doors.
   2. Before placing doors into operation, AAADM certified technician shall inspect and approve doors for compliance with ANSI/BHMA A156.19. Certified technician shall be approved by manufacturer.

3.04 ADJUSTING

A. Adjust door operators, controls and hardware for smooth and safe operation and for weather tight closure. Adjust doors in compliance with ANSI/BHMA A156.19.

3.05 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door installation.

B. Clean metal surfaces promptly after installation. Remove excess sealants, compounds, dirt and other substances. Repair damages finish to match original finish.

3.06 DEMONSTRATION

A. Engage a factory-authorized representative to train Owner's maintenance personnel to adjust, operate, and maintain safe operation of the door.

END OF SECTION

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units, monolithic.

C. Glazing compounds.

1.02 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.

C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.

F. ASTM C1036 - Standard Specification for Flat Glass; 2011.

G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.

H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.

I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2015.

J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

K. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2012a.

L. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.

M. GANA (SM) - GANA Sealant Manual; 2008.

N. ICC (IBC) - International Building Code; 2015.

O. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (Reaffirmed 2016).

P. ITS (DIR) - Directory of Listed Products; current edition.

Q. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2014.

R. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2014.

S. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2014.

T. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data on Insulating Glass Unit, Glazing Unit, Plastic Sheet Glazing Unit, Plastic Film, and _____ Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Samples: Submit two samples 8 by ___ inch in size of glass units.

E. Certificate: Certify that products of this section meet or exceed specified requirements.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least 10 years documented experience.

1.05 MOCK-UPS

A. Provide on-site glazing mock-up with the specified glazing components.

B. Locate where directed.

1.06 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F.

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

C. Laminated Glass: Provide a ten (10) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.

D. Polycarbonate Sheet Glazing: Provide a ten (10) year manufacturer warranty to include coverage for breakage, coating failure, abrasion resistance, including providing products to replace failed units.

E. Heat Soaked Tempered Glass: Provide a ten (10) year manufacturer warranty to include coverage for spontaneous breakage of fully tempered glass caused by nickel sulfide (NiS) inclusions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries; _____: www.cardinalcorp.com/#sle.
   2. Pilkington North America Inc; _____: www.pilkington.com/na/#sle.
   3. Vitro Architectural Glass (formerly PPG Glass); _____: www.vitroglazings.com/#sle.

B. Laminated Glass Manufacturers:
   1. Cardinal Glass Industries; _____: www.cardinalcorp.com/#sle.
   2. Viracon, Architectural Glass segment of Apogee Enterprises, Inc; _____: www.viracon.com/#sle.

C. Fire-Resistance-Rated Glass: Provide products as required to achieve indicated fire-rating period.
   1. SAFTIFIRST, a division of O'Keeffe's Inc; SuperLite II-XL: www.safti.com/#sle.

2. Technical Glass Products; Pilkington Pyrostop: www.fireglass.com/#sle.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
   3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
   1. In conjunction with weather barrier related materials described in other sections, as follows:

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
   1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
   2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
   3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
   4. Heat-Soak Testing (HST): Provide HST of fully tempered glass used on high-risk or other demanding applications of project, to reduce risks of spontaneous breakage due to nickel sulfide (NiS) induced fractures in accordance with industry established testing requirements.

2.04 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
   1. Applications: Exterior insulating glass glazing unless otherwise indicated.
   2. Space between lites filled with air.
   3. Total Thickness: 1 inch.
   4. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.29, nominal.
   5. Visible Light Transmittance (VLT): 64 percent, nominal.
   6. Solar Heat Gain Coefficient (SHGC): 0.23, nominal.
   7. Visible Light Reflectance, Outside: 12 percent, nominal.
   8. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   9. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   10. Metal Edge Spacers: Aluminum, manufacturer's standard corners.
   11. Spacer Color: Black.
   12. Edge Seal:
      a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone or polyurethane sealant as secondary seal applied around perimeter.
   13. Color: Black.

14. Purge interpane space with argon gas, hermetically sealed.
15. Basis of Design - Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
16. Type G1 - 1" Insulated Glass
    a. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
        1) Low-E Coating: "Acuity" by Vitro Architectural Glass, sputter coated (Solarban 90) on #2 surface.
        2) Glass: Clear.
    b. Inboard Lite: Heat-strengthened float glass, 1/4 inch thick.
        1) Coating: No coating on inboard lite.
        2) Glass: Clear.
17. Type G2 - 1" Insulated /Tempered Glass
    a. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
        1) Low-E Coating: Vitro Architectural Glass, sputter coated (Solarban 90) on #2 surface..
        2) Glass: Clear.
        3) Glass Tint: _____.
    b. Inboard Lite: Fully tempered float glass, 1/4 inch thick.
        1) Coating: No coating on inboard lite.

2.05 GLAZING UNITS

A. Type GL-2 - Monolithic Exterior Vision Glazing:
   1. Applications: As scheduled.
   2. Glass Type: Heat-strengthened float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch, nominal.

B. Type GL-1 - Monolithic Interior Vision Glazing:
   1. Applications: As scheduled.
   2. Glass Type: Annealed float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch, nominal.

C. Type FG-1 - Fire-Resistance-Rated Glazing: Type, thickness, and configuration of glazing that contains flame, smoke, and blocks radiant heat, as required to achieve indicated fire-rating period exceeding 45 minutes.
   1. Applications:
      a. Glazing in fire-rated door assembly.
      b. Glazing in fire-rated window assembly.
      c. Glazing in sidelites, borrowed lites, and other glazed openings in fire-rated wall assemblies.
   2. Glass Type: Multi-laminate annealed glass with intumescent fire retardant interlayers.
   3. Provide products listed by ITS (DIR) or UL (DIR) and approved by authorities having jurisdiction.
   4. Safety Glazing Certification: 16 CFR 1201 Category II.
   5. Glazing Method: As required for fire rating.
   6. Fire-Rating Period: 60 minutes.
   7. Markings for Fire-Resistance-Rated Glazing Assemblies: Provide permanent markings on fire-resistance-rated glazing in compliance with ICC (IBC), local building code, and authorities having jurisdiction.
      a. "W" - meets wall assembly criteria of ASTM E119 or UL 263 fire test standards.
      b. "D" - meets fire door assembly criteria of NFPA 252, UL 10B, or UL 10C fire test standards.
      c. "H" - meets fire door assembly hose stream test of NFPA 252, UL 10B, or UL 10C fire test standards.

d. "T" - meets temperature rise of not more than 450 degrees F above ambient at end of 30 minutes fire exposure in accordance with NFPA 252, UL 10B, or UL 10C fire test standards.
e. "XXX" - placeholder that represents fire-rating period, in minutes.

2.06 GLAZING COMPOUNDS

A. Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

B. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; _____ color.

2.07 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

E. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

C. Verify that sealing between joints of glass framing members has been completed effectively.

D. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 FIELD QUALITY CONTROL

A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

B. Monitor and report installation procedures and unacceptable conditions.

3.05 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.06 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal stud wall framing.

C. Metal channel ceiling framing.

D. Acoustic insulation.

E. Gypsum sheathing.

F. Cementitious backing board.

G. Gypsum wallboard.

H. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.

F. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.

G. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.

H. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2015.

I. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.

J. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.

K. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.

L. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.

M. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.

N. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel; 2013.

O. ASTM C1325 - Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units; 2014.

P. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.

Q. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels; 2015.

R. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.

S. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.

T. ASTM E413 - Classification for Rating Sound Insulation; 2010.

U. GA-216 - Application and Finishing of Gypsum Board; 2013.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.

C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

D. Test Reports: For stud framing products that do not comply with ASTM C645 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

B. Interior Partitions: Provide completed assemblies with the following characteristics:
   1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

C. Shaft Walls at HVAC Shafts: Provide completed assemblies with the following characteristics:
   1. Air Pressure Within Shaft: Sustained loads of 5 lbf/sq ft with maximum mid-span deflection of L/240.
   2. Acoustic Attenuation: STC of 50-54 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

D. Fire Rated Assemblies: Provide completed assemblies as indicated on drawings.
   1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.
   2. Marino: www.marinoware.com.
   3. Phillips Manufacturing Co; ____: www.phillipsmfg.com/#sle.
   4. Steel Construction Systems; _____: www.steelconsystems.com/#sle.
   5. Substitutions: See Section 016000 - Product Requirements.

B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
   1. Studs: "C" shaped with flat or formed webs with knurled faces.
   2. Runners: U shaped, sized to match studs.

3. Ceiling Channels: C-shaped, Slotted when contected to deflection - prime structure above.
4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.

C. Shaft Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.

D. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.

E. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.
3. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems indicated on drawings.
4. Provide mechanical anchorage devices as described above that accommodate deflection while maintaining the fire-rating of the wall assembly.
5. Deflection and Firestop Track:
   a. Provide mechanical anchorage devices as described above that accommodate deflection while maintaining the fire-rating of the wall assembly.
   b. Products:
      1) FireTrak Corporation; Posi Klip.
      2) Metal-Lite, Inc; The System.

F. Preformed Top Track Firestop Seal:
1. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems indicated on drawings.
2. Products:
   a. Hilti, Inc; Top Track Seal CFS TTS: www.us.hilti.com/#sle.

G. Non-Loadbearing Framing Accessories:
1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
   a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
3. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.

2.03 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:
   a. As indicated on drawings.
   b. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
5. Paper-Faced Products:
   a. American Gypsum Company; LightRoc Gypsum Wallboard.
   b. American Gypsum Company; FireBloc Type X Gypsum Wallboard.
   c. Georgia-Pacific Gypsum; ToughRock.
   d. Georgia-Pacific Gypsum; ToughRock Fireguard X.

e. Substitutions: See Section 016000 - Product Requirements.

6. Mold Resistant Paper Faced Products:
   a. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall.
   b. Georgia-Pacific Gypsum; ToughRock Mold-Guard.
   c. National Gypsum Company; Gold Bond XP Gypsum Board.
   d. Substitutions: See Section 016000 - Product Requirements.

B. Backing Board For Wet Areas: One of the following products:
   1. Application: Surfaces behind tile in wet areas including restrooms and breakrooms.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
      a. Thickness: 5/8 inch.

C. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
   1. Application: Vertical surfaces behind thinset tile, except in wet areas.
   2. Type: Regular and Type X, in locations indicated.
   3. Type X Thickness: 5/8 inch.
   4. Regular Board Thickness: 5/8 inch.
   5. Edges: Tapered.

D. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Ceilings, unless otherwise indicated.
   2. Thickness: 5/8 inch.
   3. Edges: Tapered.

E. Acoustical Sound Dampening Wall and Ceiling Board: Two layers of heavy paper faced, high density gypsum board separated by a viscoelastic polymer layer and capable of achieving STC rating of 50 or more in typical stud wall assemblies as calculated in accordance with ASTM E413 and when tested in accordance with ASTM E90.
   1. Thickness: 5/8 inch.
   2. Long Edges: Tapered.
   3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

F. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
   1. Application: Exterior sheathing, unless otherwise indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
   4. Core Type: Regular and Type X, as indicated.
   5. Type X Thickness: 5/8 inch.
   6. Regular Board Thickness: 5/8 inch.
   7. Edges: Square.
   8. Glass Mat Faced Products:
      a. American Gypsum Company; M-Glass Exterior Sheathing Type X.
      b. American Gypsum Company; M-Glass Exterior Sheathing.
      c. Georgia-Pacific Gypsum; DensGlass Sheathing.
      d. Georgia-Pacific Gypsum; DensGlass Fireguard Sheathing.
      e. Substitutions: See Section 016000 - Product Requirements.

G. Shaftwall and Coreboard: Type X; 1 inch thick by 24 inches wide, beveled long edges, ends square cut.
   1. Paper-Faced Type: Gypsum shaftliner board or gypsum coreboard as defined ASTM C1396/C1396M; water-resistant faces.

2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. Products:
   a. American Gypsum Company; Shaft Liner.
   b. Georgia-Pacific Gypsum; ToughRock Shaftliner.
   c. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 inch.

B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.

C. Joint Accessories: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
   1. Corner Beads: Low profile, for 90 degree outside corners.
   2. Architectural Reveal Beads:
      a. Shapes: As indicated on drawings.
      b. Products:
   3. Expansion Joints:
      a. Type: V-shaped metal with factory-installed protective tape.

D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
   1. Joint Compound: Drying type, vinyl-based, ready-mixed.

E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.

F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
   1. Install studs at spacing required to meet performance requirements.

3.03 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.
   3. Install bracing as required at exterior locations to resist wind uplift.

C. Studs: Space studs as permitted by standard.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

E. Standard Wall Furring: Install at masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 16 inches on center.
   1. Orientation: Vertical.
   2. Spacing: As permitted by standard.

F. Furring for Fire Ratings: Install as required for fire resistance ratings indicated U.L. Assembly requirements..

G. Blocking: Install wood blocking for support of:
   1. Framed openings.
   2. Wall mounted cabinets.
   3. Plumbing fixtures.
   4. Toilet partitions.
   5. Toilet accessories.
   6. Wall mounted door hardware.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.05 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Double-Layer Non-Rated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

F. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
   1. Seal joints, cut edges, and holes with water-resistant sealant.

G. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of non-rated double-layer assemblies, which may be installed by means of adhesive lamination.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

D. Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

3.07 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.

B. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   3. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.
   2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
   3. Taping, filling and sanding is not required at base layer of double layer applications.

E. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.08 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 093000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Tile for stairs.

D. Ceramic trim.

E. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 092116 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2014.

B. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.

E. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.

F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.

G. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2024).

H. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.

I. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).

J. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2010 (Reaffirmed 2016).

K. ANSI A108.12 - Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Modified Dry-Set Mortar; 2023.

L. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2010).

M. ANSI A108/A118/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium).; 2017.

N. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2012 (Revised).

O. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2010 (Revised).

P. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2010 (Revised).

Q. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).

R. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-set Ceramic Tile and Dimension Stone Installation; 2014.

S. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.

T. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.

U. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2015.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, color arrangement, junctions with dissimilar materials, control and expansion joints, and setting details.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Tile: 5 percent of each size, color, and surface finish combination.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

B. Installer Qualifications: Company specializing in performing tile installation, with minimum of five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE: AS INDICATED ON DRAWINGS

2.02 TRIM AND ACCESSORIES

A. Ceramic Trim: cove base ceramic shapes in sizes indicated.
   1. Manufacturers: Same as for tile.

B. Non-Ceramic Trim: matte black extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
   1. Applications:
      a. Open edges of wall tile.
      b. Outside wall corners.
      c. Transition between floor finishes of different heights.
      d. Thresholds at door openings.
      e. Borders and other trim as indicated on drawings.

2. Manufacturers:
   a. Schluter-Systems: Schluter schiene - www.schluter.com.
   b. Substitutions: See Section 016000 - Product Requirements.

2.03 SETTING MATERIALS

A. Manufacturers: provide setting materials by same manufacturer as grout.

B. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
   1. Products:
      a. ARDEX Engineered Cements; ARDEX N 23 MICROTEC: www.ardexamericas.com/#sle.
      b. Merkrete, by Parex USA, Inc; Merkrete 735 Premium Flex: www.merkrete.com/#sle.
      c. TEC, an H.B. Fuller Construction Products Brand; TEC Ultimate Large Tile Mortar: www.tecspecialty.com/#sle.

2.04 THIN-SET ACCESSORY MATERIALS

A. Concrete floor crack isolation membrane: material complying with ANSI A118.12; not intended as water proofing.
   1. Thickness: 20 mils, maximum.
   2. Crack resistance: no failure at 1/16 inch gap, minimum.

B. Standard Grout: ANSI A118.6 standard cement grout.
   1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
   2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
   3. Color(s): As selected by Architect from manufacturer's full line.

2.05 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
   1. Applications: Between tile and plumbing fixtures.
   2. Color(s): As selected by Architect from manufacturer's full line.

B. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
   1. Composition: Water-based colorless silicone.

2.06 ACCESSORY MATERIALS

A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
   1. Thickness: 20 mils, maximum.
   2. Crack Resistance: No failure at 1/16 inch gap, minimum.

B. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 5/8 inch thick; 2 inch wide coated glass fiber tape for joints and corners.

C. Mesh Tape: 2 inch wide self-adhesive fiberglass mesh tape.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.

D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and stair treads and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.13, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor, base, and wall joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles square.

F. Install non-ceramic trim in accordance with manufacturer's instructions.

G. Sound tile after setting. Replace hollow sounding units.

H. Keep control and expansion joints free of mortar, grout, and adhesive.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
   1. Use uncoupling membrane under all tile unless other underlayment is indicated.

B. Install tile-to-tile floor movement joints in accordance with TCNA (HB) Method EJ171F.

3.05 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms and janitor's closets.

3.06 CLEANING

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

C. Supplementary acoustical insulation above ceiling.

1.02 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.

B. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

C. UL (FRD) - Fire Resistance Directory; current edition.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on suspension system components and acoustical units.

C. Manufacturer's Installation Instructions: Indicate special procedures.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Acoustical TileType ACT-1: Painted mineral fiber, ASTM E1264 Type IV, Form A2.2, Pattern E, Fire Class A, with the following characteristics:
   1. VOC Content: Certified as Low Emission by one of the following:
   2. Size: 24 by 24 inches.
   3. Thickness: 3/4 inches.
   4. Composition: Mineral fiber, wet formed.
   5. Light Reflectance: 0.88 percent, determined in accordance with ASTM E1264.
   6. NRC Range: .75 to .80, determined in accordance with ASTM E1264.
   7. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
   8. Edge: Beveled tegular.
   9. Surface Color: White.
   10. Recycled Content: 80 percent.

11. Suspension System Basis of Design: 9/16" Armstrong Suprafine .
12. Products:
    a. Basis of Design: Armstrong 1912HRC.
    b. Substitutions: See Section 016000 - Product Requirements.

B. Acoustical TileType ACT-2: Wet-formed mineral fiber, painted, ASTM E1264 Type IV,Type A, Form 1.2, Pattern E, Fire Class A with the following characteristics:
1. Size: 24 by 24 inches.
2. Thickness: 5/8 inches.
3. Light Reflectance: 0.81 percent, determined in accordance with ASTM E1264.
4. NRC: 0.50 in accordance with ASTM E1264.
5. Edge: Square.
6. Surface Color: White.
7. Recycled Content: 50 percent.
8. Suspension System Basis of Design: 15/16" Armstrong Prelude XL.
9. Products:
    a. Basis of Design: Armstrong 1772.

C. Wood Veneer Acoustic Panels Type AWPC-1: Particle board core with micro-perforated wood veneer face and non-woven acoustical material backer.
1. Panel Thickness: 3/4 inch , for fire rated substrate.
2. Provide MDF with no added urea formaldehyde (NAUF).
3. Surface Veneer Species: Rift white oak.
    a. Factory Finish: Wood stain as selected.
4. NRC Range: ____ to ____, determined in accordance with ASTM E1264.
5. Perforated Panel:
    a. Hole Diameter: 0.020 inch.
    b. On Center Spacing: 0.050 inch.
6. Edge Profile: Square.
7. Infill panel: 3/4 inch BioAcoustic Infill in black matte or equal
8. Recycled Content: 75 percent.
9. Fire Rating: Class A, ASTM 84 with flame spread index 25 or less. Smoke Developed Classification 50 or less.
10. Suspension System: 15/16" vector with 1/4" reveal.
11. Products:
    a. Basis of Design: Armstrong 5401F01P2.
    b. Substitutions: See Section 016000 - Product Requirements.

D. Base Bid: Wood Veneer Acoustic Panels Type AWPC-2: Particle board core with micro-perforated wood veneer face and non-woven acoustical material backer.
1. Panel Thickness: 3/4 inch , for fire rated substrate.
2. Provide MDF with no added urea formaldehyde (NAUF).
3. Surface Veneer Species: Rift white oak.
    a. Factory Finish: Wood stain as selected.
4. NRC Range: ____ to ____, determined in accordance with ASTM E1264.
5. Perforated Panel:
    a. Hole Diameter: 0.020 inch.
    b. On Center Spacing: 0.050 inch.
6. Edge Profile: Square.
7. Infill panel: 3/4 inch BioAcoustic Infill in black matte or equal
8. Perimeter Trim: made of same species and finish as panel. Height varies; reference drawings.
9. Fire Rating: Class A, ASTM 84 with flame spread index 25 or less. Smoke Developed Classification 50 or less.

10. Suspension System: according to manufacturer's suggested method of suspension as per the design details in the drawings.
11. Products:
    a. Basis of Design: Armstrong/ACGI SS5-xxxx-C.
    b. Substitutions: See Section 016000 - Product Requirements.

E. Alternate Bid: Acoustical Panels Type APC-1: Painted mineral fiber, [<>] ASTM E1264 Type IV, Form A2.2, Pattern E, Fire Class A, with the following characteristics:
1. Thickness: 3/4 inches.
2. Light Reflectance: 0.88 percent, determined in accordance with ASTM E1264.
3. NRC Range: 0.75 to 0.80, determined in accordance with ASTM E1264.
4. Edge: Beveled tegular.
5. Surface Color: White.
6. Products:
    a. Armstrong Techzone with Ultima Tegular, sizes vary.
    b. Substitutions: See Section 016000 - Product Requirements.
7. Suspension System Basis of Design: 9/16" Suprafine XL Beveled Tegular
    a. Custom layout as indicated on drawings.
    b. Substitutions: See Section 016000 - Product Requirements.

2.02 SUSPENSION SYSTEM(S)

A. Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required. See system descriptions above.

B. See drawings for product selections.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

B. Wood Veneer Panel Safety Clips: Galvanized 1-9/16 by 5-1/2 inch bent sheet metal clips screw anchored to back of adjacent panels and spanning over top of suspended tee grid.
1. Wire Ties: No. 12 galvanized wire.

C. Perimeter Moldings: Armstrong Shadow Molding 7874.
1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
2. At Concealed Grid: Provide concealed molding.

D. Acoustical Insulation: Specified in Section 072100.
1. Thickness: 2 inch.
2. Size: To fit acoustical suspension system.

E. Gasket For Perimeter Moldings: Closed cell rubber sponge tape.

F. Extruded Aluminum Perimeter System, white.
1. In locations and profiles indicated on drawings.

G. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

D. Locate system on room axis according to reflected plan.

E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

J. Do not eccentrically load system or induce rotation of runners.

K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Miter corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

G. Where round obstructions occur, provide preformed closures to match perimeter molding.

H. Lay acoustical insulation for a distance of 48 inches either side of acoustical partitions as indicated.

I. Install safety clips on wood veneer panels 2 inches from outside edge of panel and at 24 inches on center.
   1. Use wire ties to attach safety clips.

J. Install wood veneer trim using aluminum L angle to attach to suspended grid system as required for application.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 096433
LAMINATED WOOD FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Laminated wood flooring.

B. Installation accessories.

1.02 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, wood species and colors available; and installation instructions.

C. Shop Drawings: Indicate floor joint pattern and termination details.

D. Samples: Submit two samples ___ by ___ inch in size illustrating floor finish, color, and sheen.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Flooring Material: 10 square yards matching installed flooring.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.04 FIELD CONDITIONS

A. Do not install wood flooring until wet construction work is complete and ambient air at installation space has moisture content stabilized at maximum moisture content of 40 percent.

B. Provide heat, light, and ventilation prior to installation.

C. Store materials in area of installation for minimum period of 24 hours prior to installation.

D. Maintain minimum room temperature of 65 degrees F and relative humidity in accordance with adhesive manufacturer's instructions for a minimum period of 48 hours prior to delivery of materials to installation space, during installation, and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Laminated Wood Flooring:
   1. Basis of Design: Nydree Flooring Engineered Acrylic Infused Wood.

2.02 MATERIALS

A. Laminated Wood Flooring:
   1. Construction: Tongue and groove, self-locking, _____ laminated wood planks.
   2. Installation Method: Glued down.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   4. Surface Burning Characteristics: Flame Spread Index of 200, maximum; Smoke Developed Index of 450, maximum; when tested in accordance with ASTM E84.
   5. Species: White Oak.
   6. Color: As selected from manufacturer's full range for species specified above.
   7. Thickness: 7/16 inch.
   8. Face Width: 2 2/3 inch.
   9. Edge Profile: Beveled.
   10. Length: Random, minimum of 12 inches.
   11. Wear Layer: 1/10 inch.
   12. Treatment: Acrylic impregnated.

13. Finish: Factory applied, UV cured urethane with ceramic particles.
14. Warranty: Limited lifetime acrylic infused wear surface, limited lifetime structural defect, urethane finish 15 years commercial.

B. Vapor Retarder: Polyethylene sheet, 6 mil thick; 2 inch wide polyethylene tape for sealing joints.

2.03 ACCESSORIES

A. Adhesives: Water-resistant; types recommended by flooring manufacturer for project substrates.

B. Transition Strip: Same species and finish as flooring material; profiles indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances required for type of substrate and ready to receive laminated wood flooring.

B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of materials to substrate surface.

C. Verify that concrete sub-floor surfaces are ready for wood flooring installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are outside the limits recommended by adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare sub-floor in accordance with flooring manufacturer's installation instructions.

B. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

3.03 INSTALLATION

A. Vapor Retarder: Install loose laid, seams overlapped 4 inches and sealed with polyethylene tape on grade level only. Run material 2 inches up the wall and trim after flooring is installed.

B. Adhesives: Install in accordance with adhesive manufacturer's installation instructions.

C. Wood Flooring:
1. Install flooring in accordance with manufacturer's installation instructions.
2. Lay flooring in patterns indicated on drawings. Verify alignment as work progresses.
3. Arrange flooring with end matched grain set flush and tight.
4. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar; provide divider strips and transition strips in accordance with flooring manufacturer's recommendations and as indicated.
5. Install edge strips at unprotected or exposed edges, and where flooring terminates.
6. Secure edge strips before installation of flooring with stainless steel screws.
7. Install flooring tight to floor access covers.
8. Within two (2) hours of adhesive applied flooring installation, roll work thoroughly in both directions with 100 lb roller.

3.04 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damaging surfaces.

B. Clean floor surfaces in accordance with the flooring manufacturer's instructions.

3.05 PROTECTION

A. Prohibit traffic on finished floor for 24 hours after installation.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

B. Place protective coverings over finished floors; do not remove coverings until after Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring.

B. Resilient base.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2025.

B. ASTM F1700 - Standard Specification for Solid Vinyl Tile; 2013a.

C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012).

D. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

E. NSF 332 - Sustainability Assessment for Resilient Floor Coverings; 2015.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Verification Samples: Submit two samples, 4 by 4 inch in size illustrating color and pattern for each resilient flooring product specified.

D. Sustainable Design Submittal: Submit VOC content documentation for flooring and adhesives.

E. Concrete Sub-floor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

F. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of sub-floor is acceptable.

G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Flooring Material: 40 square feet of each type and color.
   3. Extra Wall Base: 30 linear feet of each type and color.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum ____ years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum 5 years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

D. Protect roll materials from damage by storing on end.

E. Do not double stack pallets.

1.07 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 TILE FLOORING

A. Vinyl Tile - LVT-1: Printed film type, with transparent or translucent wear layer.
   1. Minimum Requirements: Comply with ASTM F1700, of Class corresponding to type specified.
   2. VOC Content Limits: As specified in Section 016116.
   3. NSF 332 Certification: Platinum level.
   4. Square Tile Size: 20 by 20 inch.
   5. Wear Layer Thickness: 22 mil.
   6. Total Thickness: 0.197 inch.
   7. Finish: Exoguard or equal.
   8. Color: As indicated on drawings.
   9. Warranty: 15 Year Commercial Limited.

2.02 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TP, rubber, thermoplastic; top set Style B, Cove.
   1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   2. Height: 6 inch.
   3. Thickness: 0.125 inch.
   4. Finish: Satin.
   5. Length: Roll.
   6. Color and size: As indicated on drawings.

2.03 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer. For use only under areas to recieve carpet, tile, and resilient flooring.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
   1. VOC Content Limits: As specified in Section 016116.

C. Adhesive for Vinyl Flooring:

D. Filler for Coved Base: Plastic.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
   1. Test in accordance with ASTM F710.
   2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).

B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

D. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Spread only enough adhesive to permit installation of materials before initial set.
   2. Fit joints and butt seams tightly.
   3. Set flooring in place, press with heavy roller to attain full adhesion.

D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
   1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
   2. Resilient Strips: Attach to substrate using adhesive.

F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

G. Install flooring in recessed floor access covers, maintaining floor pattern.

H. Spread only enough adhesive to permit installation of materials before initial set.

I. Fit joints and butt seams tightly.

J. Set flooring in place, press with heavy roller to attain full adhesion.

K. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

L. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
   1. Resilient Strips: Attach to substrate using adhesive.

M. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

N. Install flooring in recessed floor access covers, maintaining floor pattern.

3.04 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 096813
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, fully adhered.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 017419 - Construction Waste Management and Disposal: Reclamation/Recycling of new carpet tile scrap, removed carpet tile, and _____.

1.03 REFERENCE STANDARDS

A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2006 (Reapproved 2011).

B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2025.

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.

D. CRI 104 - Standard for Installation of Commercial Carpet; 2018.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

C. Sustainable Design Submittal: Submit VOC content documentation for adhesives.

D. Concrete Sub-floor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

1.06 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Entryway Tile Carpeting: Tufted, manufactured in one color dye lot.
   1. Tile Size: as indicated on drawings inch, nominal.
   2. Color: as indicated on drawings.
   3. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
   4. VOC Content: Comply with Section 016116.
   5. Pile Weight: 30 oz/sq yd.
   6. Fiber System: Ecosolution Q100 Nylong

7. Warranty: Lifetime Commercial Limited

2.02 ACCESSORIES

A. Edge Strips: as indicated, color as selected by Architect.

B. Adhesives:
   1. Compatible with materials being adhered; maximum VOC content as specified in Section 016116.

C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.

C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for flooring installation by testing for moisture and pH.
   1. Test in accordance with ASTM F710.
   2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Locate change of color or pattern between rooms under door centerline.

F. Fully adhere carpet tile to substrate.

G. Trim carpet tile neatly at walls and around interruptions.

H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Clean and vacuum carpet surfaces.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 097200
WALL COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation and prime painting.

B. Wall covering.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

A. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes; 2002 (Reapproved 2013).

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

C. ASTM F793/F793M - Standard Classification of Wall Coverings and Ceiling Coverings by Use Characteristics; 2025.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on wall covering and adhesive.

C. Manufacturer's Installation Instructions: Indicate special procedures.

D. Maintenance Data: Submit data on cleaning, touch-up, and repair of covered surfaces.

E. Manufacturer's Qualification Statement.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Wall Covering Materials: 25 linear feet of each color and pattern of wall covering; store where directed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum 5 years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least 5 years of documented experience.

1.06 WARRANTY

A. Manufacturer's limited 5-year written warranty againgsmanufacturing defects.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Inspect roll materials at arrival on site, to verify acceptability.

B. Protect packaged adhesive from temperature cycling and cold temperatures.

C. Do not store roll goods on end.

1.08 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the adhesive or wall covering product manufacturer.

B. Maintain these conditions 24 hours before, during, and after installation of adhesive and wall covering.

C. Provide lighting level of 80 ft candles measured mid-height at substrate surfaces.

PART 2 PRODUCTS

2.01 WALL COVERINGS

A. General Requirements:
   1. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.
   2. Chemical and Stain Resistance: No visible staining or discoloration and no damage to surface texture when tested in accordance with ASTM D1308.

B. Wall Covering: Fabric-backed vinyl roll stock.
   1. Comply with ASTM F793/F793M, Category V, Type II.
   2. Total Weight: 20 oz/sq yd.
   3. Roll Width: 54 inches.
   4. Color: Varies, as indicated on drawings.
   5. Pattern: Varies, as indicated on drawings..
   6. Fire Rating: ASTM E84 Class A Fire Rated
   7. Micro-perforation requirement: All wall covering installed on exterior walls must be factory perforated to allow moisture transmission.

C. Adhesive: Type recommended by wall covering manufacturer to suit application to substrate

D. Substrate Filler: As recommended by adhesive and wall covering manufacturers; compatible with substrate.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are prime painted and ready to receive work, and comply with requirements of wall covering manufacturer.

B. Measure moisture content of surfaces using an electronic moisture meter. Do not apply wall coverings if moisture content of substrate exceeds level recommended by wall covering manufacturer.

C. Verify flatness tolerance of surfaces does not vary more than 1/8 inch in 10 feet nor vary at a rate greater than 1/16 inch/ft.

3.02 PREPARATION

A. Fill cracks in substrate and smooth irregularities with filler; sand smooth.

B. Wash impervious surfaces with tetra-sodium phosphate, rinse and neutralize; wipe dry.

C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces that affect work of this section. Remove existing coatings that exhibit loose surface defects.

E. Vacuum clean surfaces free of loose particles.

3.03 INSTALLATION

A. Apply adhesive and wall covering in accordance with manufacturer's instructions.

B. Apply adhesive to wall surface immediately prior to application of wall covering.

C. Razor trim edges on flat work table. Do not razor cut on gypsum board surfaces.

D. Apply wall covering smooth, without wrinkles, gaps or overlaps. Eliminate air pockets and ensure full bond to substrate surface.

E. Butt edges tightly.

F. Overlap adjacent panels as recommended by manufacturer.

G. Horizontal seams are not acceptable.

H. Do not seam within 2 inches of internal corners or within 6 inches of external corners.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

I. Install wall covering before installation of bases and items attached to or spaced slightly from wall surface.

J. Cover spaces above and below windows, above doors, in pattern sequence from roll.

K. Apply wall covering to electrical wall plates prior to replacing.

L. Where wall covering tucks into reveals, or metal wallboard or plaster stops, apply with contact adhesive within 6 inches of wall covering termination. Ensure full contact bond.

M. Remove excess adhesive while wet from seam before proceeding to next wall covering sheet. Wipe clean with dry cloth.

3.04 CLEANING

A. Clean wall coverings of excess adhesive, dust, dirt, and other contaminants.

B. Reinstall wall plates and accessories removed prior to work of this section.

3.05 PROTECTION

A. Do not permit construction activities at or near finished wall covering areas.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 098414
ACOUSTIC STRETCHED-FABRIC WALL AND CEILING SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Acoustic stretched-fabric wall system.

1.02 REFERENCE STANDARDS

A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2023, with Editorial Revision (2024).

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

C. ASTM E795 - Standard Practices for Mounting Test Specimens During Sound Absorption Tests; 2005 (Reapproved 2012).

D. ASTM E2573 - Standard Practice for Specimen Preparation and Mounting of Site-Fabricated Stretch Systems to Assess Surface Burning Characteristics; 2024.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Specimen warranty.

C. Selection Samples: Fabric swatches representing manufacturer's full range of available colors, textures, and patterns.

D. Manufacturer's Qualification Statement.

E. Installer's Qualification Statement.

F. Warranty Documentation: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Supply an additional 10 (ten) percent of accessories installed for Owner's use in maintenance of project.
   2. Supply an additional 5 (five) percent of fabric installed for Owner's use in maintenance of project.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect fabric, acoustical backing, and track from excessive moisture in shipment, storage, and handling.

B. Do not deliver materials to project until wet work such as concrete and plaster has been completed.

C. Store products in manufacturer's unopened packaging until ready for installation.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

1.06 FIELD CONDITIONS

A. Do not begin installation until interior conditions have reached temperature and humidity that will be maintained during occupancy.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year manufacturer warranty for _____.

PART 2 PRODUCTS

2.01 ACOUSTIC STRETCHED-FABRIC SYSTEM

A. Acoustic Stretched-Fabric System: Field installed, fabric is stretched and set into framework and laid over acoustic material anchored to substrate. Framework consists of continuous perimeter and intermediate mounting frames anchored to substrate, and designed to permit removal and replacement of fabric within framed areas without affecting adjacent areas.

1. Surface Burning Characteristics: Flame Spread Index of 25, maximum; Smoke Developed Index of 450, maximum; when whole system is tested in accordance with ASTM E84 using mounting specified in ASTM E2573 for stretched systems.
2. Noise Reduction Coefficient (NRC): 0.80, minimum, when tested in accordance with ASTM C423, Type A mounting per ASTM E795.
3. Seams in fabric are not permitted; adjust frame layouts to accommodate width of fabric; obtain written approval of frame layouts from Architect.

B. Provide materials and systems made of recycled content, at least 50 percent post-consumer or pre-consumer (post-industrial).

C. Verify that adhesives and sealants used in installation of acoustic stretched-fabric system have acceptable low VOC emission ratings.

2.02 MATERIALS

A. Frame: Extruded polymer framing system with serrated jaws of sufficient strength to hold fabric in place after repeated applications.

B. Acoustic Material:

1. Provide type of acoustic material in thickness required to achieve Noise Reduction Coefficient (NRC) indicated.

C. Fabric: Heavy-duty fire-retardant commercial fabric, as provided by manufacturer of acoustic stretched-fabric system; color, pattern, and texture as selected from system manufacturer's fabric supplier's standard line of fabric.

D. Fabric:

1. Manufacturers:
2. Style Number: 3582.
3. Wall Color: As selected by Architect.
4. Width; Wall System: Full length of wall indicated on the drawings.

E. Fasteners: As recommended by manufacturer of acoustic stretched-fabric system in accordance with project requirements.

F. Adhesives: Low VOC or water-based, and approved by acoustic stretched-fabric system manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install acoustic stretched-fabric system at locations indicated in accordance with approved shop drawings and manufacturer's instructions.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

B. Frames: Install perimeter and intermediate frames using appropriate fasteners for prepared substrate, firmly secured to ensure frames do not separate from substrate.
   1. Follow contours of wall and scribe to adjoining work at borders, penetrations, and imperfections.
   2. Install framing around openings and penetrations.
   3. Allow for spacing of framework to accommodate insertion of installation tool.

C. Fabric: Stretch fabric over acoustic material, locking edges of fabric into frame's serrated jaws using manufacturer's recommended tool. Maintain fabric weave plumb, level and true, in proper relation to building lines, without ripples, waviness, hourglass, or other deleterious effects.
   1. Upon fabric installation, do not employ adhesives or mechanical fasteners of any type, and ensure fabric is free-floating and in contact with acoustic material as necessary.
   2. Stapling or gluing of fabric to cores or channel framework is not permitted.
   3. Provide tension in fabric sufficient to prevent sagging under anticipated changes in temperature and humidity.

3.02 CLEANING

A. Clean exposed surfaces of acoustic stretched-fabric system in compliance with manufacturers instructions for cleaning and repair of minor damage to exposed surfaces.

B. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage to system.

3.03 PROTECTION

A. Protect installed materials upon completion of this work, using methods that will ensure that the finished work is without damage or deterioration upon Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 098430
SOUND-ABSORBING WALL AND CEILING UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sound-absorbing panels.

B. Mounting accessories.

1.02 RELATED REQUIREMENTS

A. Section 095100 - Acoustical Ceilings: Ceiling suspension system.

1.03 REFERENCE STANDARDS

A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2023, with Editorial Revision (2024).

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

C. ASTM E795 - Standard Practices for Mounting Test Specimens During Sound Absorption Tests; 2005 (Reapproved 2012).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's printed data sheets for products specified.

C. Shop Drawings: Fabrication and installation details, panel layout, and fabric orientation.

D. Selection Samples: Manufacturer's color charts for fabric covering, indicating full range of fabrics, colors, and patterns available.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Panels: Quantity equal to 5 percent of total installed, but not less than one of each type.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company with not less than five years of experience in manufacturing acoustical products similar to those specified.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect acoustical units from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until units are needed for installation.

B. Store units flat, in dry, well-ventilated space; do not stand on end.

C. Protect edges from damage.

1.07 MOCK-UP

A. See Section 014000 - Quality Requirements, for additional mock-up requirements.

B. Construct mock-up of acoustical units at location as indicated by Architect.
   1. Minimum mock-up dimensions; 96 by 96 inches.
   2. Approved mock-up may remain as part of the Work.

PART 2 PRODUCTS

2.01 FABRIC-COVERED SOUND-ABSORBING UNITS

A. Sound Absorbing Units: Prefinished, factory assembled fabric-covered panels.
   1. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

B. Fabric-Covered Acoustical Panels for Walls:
   1. Panel Core: Manufacturer's standard core.
   2. Noise Reduction Coefficient (NRC): 0.55 when tested in accordance with ASTM C423 for Type ____ mounting, per ASTM E795.
   3. Panel Size: Varies
   4. Panel Thickness: 1/2 to 3/4 inches.
   5. Fabric: Acoustic PET Felt.
   6. Color: As selected by Architect from manufacturer's full range.
   7. Mounting Method: Direct applied with adhesive.

2.02 FABRICATION

A. Tolerances: Fabricate to finished tolerance of plus or minus 1/16 inch for thickness, overall length and width, and squareness from corner to corner.

2.03 ACCESSORIES

A. Panel Adhesive: Acceptable to acoustical panel manufacturer for application as indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates for conditions detrimental to installation of acoustical units. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install acoustical units in locations as indicated, following manufacturer's installation instructions.

B. Align panels accurately, with edges plumb and top edges level. Scribe to fit accurately at adjoining work and penetrations.

C. Install acoustical units to construction tolerances of plus or minus 1/16 inch for the following:
   1. Plumb and level.
   2. Flatness.

3.03 CLEANING

A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.

3.04 PROTECTION

A. Provide protection of installed acoustical panels until Date of Substantial Completion.

B. Replace panels that cannot be cleaned and repaired to satisfaction of the Architect.

END OF SECTION

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints, stains, and varnishes.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
   1. Exposed surfaces of steel lintels and ledge angles.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, zinc, and lead.
   6. Floors, unless specifically indicated.
   7. Brick, glass unit masonry, architectural concrete, cast stone, integrally colored plaster and stucco.
   8. Glass.
   9. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management.

B. Section 018113 Sustainable Design Requirements.

C. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum 10 years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 5 years experience and approved by manufacturer.

1.05 MOCK-UP

A. See Section 014000 - Quality Requirements, for general requirements for mock-up.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Paints:
1. Pittsburgh Paints: www.ppgpaints.com/#sle.
2. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
4. Supply each paint material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content: Comply with Section 016116.

C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

D. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - EXTERIOR

A. Exterior Surfaces to be Painted, where indicated: .
1. Two top coats and one coat primer.
2. Top Coat(s): Exterior Light Industrial Coating, Water Based; MPI # 163.
a. Application: General, all exterior primed metal including exposed structural steel, hollow metal doors and frames.
b. Products:
1) Pittsburgh Paints Pitt-Tech Plus WB DTM Industrial Enamel, 90-1210 Series, Semi-Gloss. (MPI #163)

3. Top Coat(s): Exterior High Build Latex; MPI #40.
    a. Application: General, concrete and concrete masonry units. Apply at CMU, back side of loading dock masonry walls.
    b. Products:
        1) Pittsburgh Paints Perma-Crete Exterior Acrylic High Build, 4-22 Series.

B. Paint E-OP-FL - Concrete floors to be Painted.
1. Application: floor graphics for life safety egress zones.
2. Two top coats without primer.
3. Top Coat(s): Latex Floor Paint, Gloss.
    a. Products:
        1) Pittsburgh Paints Floor and Porch Enamel WB Alkyd, 3-610 Series, Gloss.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior/Exterior Latex Block Filler; MPI #4.
    a. Products:
        1) Kilz Pro-X p50 Block Filler Primer.
2. Anti-Corrosive Alkyd Primer for Metal; MPI #79.
    a. Products:
        1) Pittsburgh Paints Speedhide Interior/Exterior Rust Inhibitive Steel Primer, 6-212 Series. (MPI #79)

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Exterior Plaster and Stucco: 12 percent.
2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi at 6 to 12 inches. Allow to dry.
3. Clean concrete according to ASTM D4258. Allow to dry.

G. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.
3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi at 6 to 12 inches. Allow to dry.

H. Exterior Plaster: Fill hairline cracks, small holes, and imperfections with exterior patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

I. Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
2. Prepare surface according to SSPC-SP 2.

J. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

K. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Elevator pit ladders.
   3. Prime surfaces to receive wall coverings.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, and lead items.
   6. Marble, granite, slate, and other natural stones.
   7. Floors, unless specifically indicated.
   8. Ceramic and other tiles.
   9. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.
   10. Glass.
   11. Acoustical materials, unless specifically indicated.
   12. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.

D. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.

E. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

F. SSPC-SP 1 - Solvent Cleaning; 2015.

G. SSPC-SP 2 - Hand Tool Cleaning; 1982 (Ed. 2004).

H. SSPC-SP 13 - Surface Preparation of Concrete; 2018.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").

2. MPI product number (e.g. MPI #47).
3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
4. Manufacturer's installation instructions.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Allow 30 days for approval process, after receipt of complete samples by Architect.

D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

E. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 016000 - Product Requirements, for additional provisions.
2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minumum 10 years of documeneted experience.

1.05 MOCK-UP

A. See Section 014000 - Quality Requirements, for general requirements for mock-up.

B. Provide panel, 4 feet long by 4 feet wide, illustrating paint color, texture, and finish.

C. Provide door and frame assembly illustrating paint color, texture, and finish.

D. Locate where directed by Architect.

E. Mock-up may remain as part of the work.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer.
   1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
   2. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
   1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
   2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   4. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
   5. Supply each paint material in quantity required to complete entire project's work from a single production run.
   6. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
      b. Architectural coatings VOC limits of the State in which the Project is located.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, and plaster.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
      a. Products:
         1) Pittsburgh Paints Pure Performance Interior Latex, 9-300XI Series, Eggshell. (MPI #144)
         2) Pittsburgh Paints Speedhide zero Latex, 6-4310XI Series, Eggshell. (MPI #144)
         3) Pittsburgh Paints Speedhide zero Latex, 6-4410XI Series, Satin. (MPI #145)
         4) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Low Sheen. (MPI #144)

5) Substitutions: Section 016000 - Product Requirements.

3. Top Coat Sheen:
   a. Eggshell: MPI gloss level 3; use this sheen at walls.
   b. Satin: MPI gloss level 4; use this sheen at locations to receive accent paint. Also, accent color P1.2.
4. Primer: As recommended by top coat manufacturer for specific substrate.

B. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including:
1. Medium duty applications include doors, door frames, and handrails.
2. Two top coats and one coat primer.
3. Top Coat(s): High Performance Architectural Interior Latex; MPI #139, 140, or 141.
   a. Basis of Design Products:
      1) Pittsburgh Paints Pitt-Tech Plus WB DTM Industrial Enamel, 90-1210 Series, Semi-Gloss.
      2) Substitutions: Section 016000 - Product Requirements.

C. Paint I-OP-MD-WC - Medium Duty Overhead: Including gypsum board.
1. Two top coats and one coat primer.
2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
   a. Products:
      1) Pittsburgh Paints Speedhide zero Latex, 6-4110XI Series, Flat. (MPI #143)
      2) Pittsburgh Paints Speedhide zero Latex, 6-4310XI Series, Eggshell. (MPI #44)
      3) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Flat.
      4) Substitutions: Section 016000 - Product Requirements.
3. Top Coat Sheen:
   a. Flat: MPI gloss level 1; use this sheen for ceilings and other overhead surfaces.
   b. Eggshell: MPI gloss level 3; use this sheen at interior walls.
   c. Semi-Gloss: MPI gloss level 5; use this sheen at hollow-metal doors, door frames, and handrails.
4. Primer: As recommended by top coat manufacturer for specific substrate.

D. Paint WI-OP-2L - Wood, Opaque, Latex, 2 Coat (Type P2.1) :
1. One coat of latex primer sealer.
2. Semi-gloss: One coat of latex enamel.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Plaster and Stucco: 12 percent.
   3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
   4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
   5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
   2. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

G. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
   2. Prepare surface as recommended by top coat manufacturer.

H. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

I. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

J. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

K. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

L. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
   2. Prepare surface according to SSPC-SP 2.

M. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
   3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

N. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

O. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

P. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

Q. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 099600
HIGH-PERFORMANCE COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. High performance coatings.

B. Surface preparation.

1.02 RELATED REQUIREMENTS

A. Section 017419 Construction Waste Management and Disposal.

B. Section 018133 Sustainable Design Requirements.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

E. SSPC V1 (PM1) - Good Painting Practice: Painting Manual Volume 1; 2024.

F. SSPC V2 (PM2) - Systems and Specifications: Steel Structures Painting Manual Volume 2; 2021.

G. SSPC-PA 1 - Shop, Field, and Maintenance Coating of Metals; 2024, with Errata (2025).

H. SSPC-PA 2 - Procedure For Determining Conformance To Dry Coating Thickness Requirements; 2015.

I. SSPC-SP 1 - Solvent Cleaning; 2015.

J. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide complete list of all products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified coating system(s) product is to be used in; include description of each system.

C. Samples: Submit two samples 8 by 8 inch in size illustrating colors available for selection.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

F. Maintenance Data: Include cleaning procedures and repair and patching techniques.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Coating Materials: 1 gallon of each type and color.
   2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

1.05 QUALITY ASSURANCE

A. Maintain one copy of each referenced document that applies to application on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum 10 yearsdocumented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

1.06 MOCK-UP

A. See Section 014000 - Quality Requirements, for general requirements for mock-up.

B. Locate where directed.

C. Mock-up may remain as part of the work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of coating, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Coating Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the coating product manufacturer.

C. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.

D. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.

E. Restrict traffic from area where coating is being applied or is curing.

1.09 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for bond to substrate.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Only materials (primers, coatings, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project.

B. Provide high performance coating products from the same manufacturer to the greatest extent possible.
   1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
   2. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.

C. High-Performance Coatings:
   1. Dow Chemical Company; _____: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
   2. Pittsburgh Paints; _____: www.ppgpaints.com/#sle.
   3. Sherwin-Williams Company; _____: www.protective.sherwin-williams.com/industries/#sle.
   4. Substitutions: Section 016000 - Product Requirements.

2.02 HIGH-PERFORMANCE COATINGS

A. Provide the following: One top coat and one coat primer.

B. Note: Certain colors may require multiple coats depending on method of application and finish coat color. When feasible, the preceding coat should be in the same color family (blue, gray, etc.), but noticeably different.

C. MPI Standards: Provide products that comply with MPI standards indicated and are listed in "MPI Approved Products List."

2.03 TOP COAT MATERIALS

A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.

B. Epoxy Coating for wet locations:
   1. Number of coats: Two.
   2. Top Coat(s): Polyamide Epoxy; MPI #77.
      a. Sheen: Gloss.
      b. Basis of Design:
         1) Pittsburgh Paints; Amerlock 2VOC: www.ppgpaints.com/#sle.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by coating manufacturer.
   1. Primer Sealer, Interior, Institutional Low Odor; MPI #149.
   2. Block Filler, Epoxy; MPI #116.
      a. Products:
         1) PPG Paints; Amerlock 400 Epoxy Block Filler, 400BF: www.ppgpaints.com/#sle.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Do not begin application of coatings until substrates have been properly prepared.

C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.

D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

F. Test shop-applied primer for compatibility with subsequent cover materials.

G. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Masonry, Concrete, and Concrete Unit Masonry: 4 percent.

H. Masonry: Verify masonry joints are struck flush.

I. Proceed with coating application only after unacceptable conditions have been corrected.
   1. Commencing coating application constitutes Contractor's acceptance of substrates and conditions.

3.02 PREPARATION

A. Clean surfaces of loose foreign matter.

B. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.

C. Remove finish hardware, fixture covers, and accessories and store.

D. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning", and protect from corrosion until coated.

E. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

3.03 PRIMING

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.04 COATING APPLICATION

A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified and recommendations in "MPI Architectural Painting and Specification Manual".

B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean surfaces immediately of overspray, splatter, and excess material.

C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

A. Protect finished work from damage.

END OF SECTION

SECTION 099723
CONCRETE & MASONRY COATINGS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Water-based, 100 percent acrylic, smooth, easy-cleaning, waterproof coating for exterior, above- grade, vertical surfaces of Cast Stone, and Masonry.

1.02 RELATED SECTIONS

A. Section 01 74 19 - Construction Waste Management.

B. Section 01 81 13 - Sustainable Design Requirements.

C. Section 03 30 00 – Cast-in-Place Concrete.

D. Section 04 22 00 – Concrete Unit Masonry.

E. Section 07 24 00 – Exterior Insulation and Finish Systems.

F. Section 09 24 00 – Cement Plastering: Stucco.

1.03 REFERENCE STANDARDS

A. ASTM D522/D522M - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings; 2013.

B. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test; 2009.

C. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers; 2009.

D. ASTM D5590 - Standard Test Method for Determining the Resistance of Paint Films and Related Coatings to Fungal Defacement by Accelerated Four-Week Agar Plate Assay; 2000 (Reapproved 2010).

E. ASTM G155 - Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials; 2013.

F. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation; 2013.

G. ISO 9001 - Quality Management Systems-Requirements; 2008.

H. ASTM D 1475 – Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.

I. ASTM D 3719 – Standard Test Method for Quantifying Dirt Collection on Coated Exterior Panels.

J. ASTM D 5201 – Standard Practice for Calculating Formulation Physical Constants of Paints and Coatings.

K. ASTM E 96 – Standard Test Methods for Water Vapor Transmission of Materials.

L. Miami/Dade TAS 143-95 – Dirt Pickup Resistance.

1.04 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer’s product data, including surface preparation, mixing, and application instructions.

C. Samples: Submit manufacturer’s samples of standard colors of waterproof coating.
   1. Sample Size: Minimum 3 inches by 3 inches.

D. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.

E. Manufacturer's Project References: Submit manufacturer's list of successfully completed waterproof coating projects, including project name and location, name of architect, and type and quantity of waterproof coatings furnished.

F. Applicator's Project References: Submit applicator's list of successfully completed waterproof coating projects, including project name and location, name of architect, and type and quantity of waterproof coatings applied.

G. Cleaning Instructions: Submit manufacturer's cleaning instructions.

H. Warranty Documentation: Submit manufacturer's standard warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Manufacturer regularly engaged, for a minimum of 10 years, in the manufacturing of waterproof coatings of similar type to that specified.
   2. ISO 9001:2008 certified.

B. Applicator's Qualifications:
   1. Applicator regularly engaged, for a minimum of 5 years, in application of waterproof coatings of similar type to that specified.
      a. Employ persons trained for application of waterproof coatings.

C. Mock-ups:
   1. Apply materials to 4-foot by 4-foot (1.2-m by 1.2-m) mock-up to verify acceptable color, texture, and adhesion.
   2. Measure adhesion in accordance with ASTM D3359, Method A.
      a. Required Minimum Adhesion Rating, 0 to 5 Scale: 4A.
   3. Construct mock-ups using same materials, surface preparation, mixing, and application for use in the Work.
   4. Construct mock-ups at locations determined by Architect.
   5. Do not proceed until mock-ups are approved by Architect.
   6. Retain approved mock-ups.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:
   1. Store and handle materials in accordance with manufacturer's instructions.
   2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
   3. Store materials in clean, dry area.
   4. Store materials out of direct sunlight.
   5. Keep materials from freezing.
   6. Protect materials during storage, handling, and application to prevent contamination or damage.

1.07 AMBIENT CONDITIONS

A. Do not apply materials when substrate or ambient temperatures are 40 degrees Fahrenheit or below during application or within 24 hours after application.

B. Do not apply materials when rain, snow, or excessive moisture is expected during application or within 24 hours after application.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS FROM THE FOLLOWING MANUFACTURER:

A. Sika Corporation, 201 Polito Avenue, Lyndhurst NJ 07071. Toll Free 800-933-SIKA (7452), www.sikausa.com.

B. Substitutions: See section 012500

C. Single Source: Provide materials from single manufacturer.

2.03 CONCRETE AND MASONRY COATINGS

A. Waterproof Coating: “Sika Thorocoat 350 Aquasol”.
   1. Description: Water-based, 100 percent acrylic, smooth, easy-cleaning, waterproof coating.
   2. Use: Exterior, above-grade, vertical surfaces.
   3. Tint base: Pastel.
   4. Color: .
   5. Hydrophobic.
   6. Breathable.
   7. UV resistant.
   8. VOC Content: Less than 50 g/L, less water and exempt solvents.

B. Test Data:
   1. Density, ASTM D 1475: 11.8 lbs/gal (1.41 kg/L).
   2. Solids by Volume, ASTM D 5201: 41 percent.
   3. Adhesion to Concrete, ASTM D4541, 28 Days: 500 psi.
   4. Dirt Pickup Resistance, Miami/Dade TAS 14395, Section 7.8 (Modified): Greater than 90 percent retention of reflectance.
   5. Dirt Collection, ASTM D 3719, 61 Days, 45-Degree Angle, Southern Exposure, Dc Index: 0.98.
   6. Artificial Weathering and UV Resistance, ASTM G155, Xenon Arc, Type B, 2,000 Hours: No deleterious effect.
   7. Water-Vapor Permeance, ASTM E 96, Wet Cup Test: 20 perms.
   8. Flexibility, ASTM D 522, 7 Wet Mils, 1/2-Inch Mandrel, 40 Degrees F (4 Degrees C) and 70 Degrees F (21 Degrees C): No cracking.
   9. Fungus Resistance, ASTM D5590, 30-Day Exposure: No growth.

2.04 ACCESSORIES

A. Patching Compound: “Sika Thorocoat 748”.
   1. Description: 100 percent acrylic-emulsion patching compound.
   2. Use: Crack repair.

B. Block Filler: “Sika Thorocoat -749 / Block Filler”.
   1. Description: Acrylic copolymer-based block filler.
   2. Use: Base coat for new concrete masonry units.

C. Base Coat: “Sika Thorocoat -200”.
   1. Description: Water-based, 100 percent acrylic, smooth, waterproof coating.
   2. Use: Base coat for waterproof coating.

D. Primer: “Sika Thorocoat -150 Primer”.
   1. Description: Modified acrylic primer.
   2. Use: Primer for Sika Thorocoat coatings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive waterproof coating.

B. Notify Architect of conditions that would adversely affect application or subsequent use.

C. Do not begin surface preparation or application until unacceptable conditions are corrected.

3.02 PROTECTION OF IN-PLACE CONDITIONS

A. Protect adjacent surfaces and landscaping from contact with waterproof coating.

3.03 SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer's instructions.

B. Ensure surfaces are sound, clean, dry, and free of bond-inhibiting contaminants.

C. Ensure concrete substrates are fully cured.

D. Repair Materials: Repair holes, spalled areas, and damaged concrete with appropriate repair materials from same manufacturer as waterproof coating.
   1. Apply repair materials in accordance with manufacturer's instructions.
   2. Ensure repair materials are compatible with waterproof coating.
   3. Allow repair materials to fully cure.

E. Remove protruding concrete accessories.

F. Smooth out surface irregularities.

G. Roughen concrete surfaces in accordance with manufacturer's instructions to achieve surface profile of CSP 3 inch accordance with ICRI 310.2R.

H. Use chemical cleaning compounds in accordance with manufacturer's instructions, if necessary to remove stains.

I. Existing Coatings:
   1. Check adhesion of existing coatings in accordance with ASTM D3359, Method A.
   2. Remove blisters and delaminated areas.
   3. Sand edges to smooth rough areas and provide transition to existing coating areas.

J. Crack Repair:
   1. Treat cracks larger than 1/32 inch with patching compound from same manufacturer as waterproof coating.
      a. Apply patching compound in accordance with manufacturer's instructions.
      b. Ensure patching compound is compatible with waterproof coating.
      c. Allow patching compound to fully cure.
   2. Treat cracks larger than 1/4 inch as expansion joints and fill with appropriate sealant from same manufacturer as waterproof coating.
      a. Apply sealant in accordance with manufacturer's instructions.
      b. Ensure sealant is compatible with waterproof coating.
      c. Allow sealant to fully cure.

K. New Concrete Masonry Units:
   1. Apply to new concrete masonry units a base coat of block filler from same manufacturer as waterproof coating.
      a. Apply block filler in accordance with manufacturer's instructions.
      b. Ensure block filler is compatible with waterproof coating.
      c. Apply block filler to be free of pinholes.
      d. Allow block filler to fully cure.

L. Priming:
   1. If applying to bare concrete, prime surface with Sika Thorocoat® -150 Primer prior to coating.
   2. Chalky surfaces should be primed with Sika Thorocoat® -100 Primer.

3.04 MIXING

A. Mix waterproof coating in accordance with manufacturer's instructions.

B. Mix waterproof coating to ensure uniform color and texture.

C. Mix waterproof coating to minimize air entrapment.

3.05 APPLICATION

A. Apply waterproof coating in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Apply 2 coats of coating.

C. Maintain proper uniform wet-film thickness (WFT) during application.

D. Work to natural break and maintain wet edge during application.

E. Apply waterproof coating using consistent techniques to achieve uniform thickness, consistent appearance, and uniform color and texture.

F. Do not thin waterproof coating.

3.06 PROTECTION

A. Protect applied waterproof coating to ensure that, except for normal weathering, coating will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 101100
VISUAL DISPLAY UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Markerboards.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Blocking and supports.

B. Section 092116 - Gypsum Board Assemblies: Concealed supports in metal stud walls.

C. Section 099123 - Interior Painting: Finishing of wood frame and chalkrail.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's data on markerboard, trim, and accessories.

C. Shop Drawings: Indicate wall elevations, dimensions, joint locations , special anchor details.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year warranty for markerboard to include warranty against discoloration due to cleaning, crazing or cracking, and staining.

PART 2 PRODUCTS

2.01 VISUAL DISPLAY BOARDS

A. Markerboards: _____.

1. Basis of design:
   a. Manufacturer: Clarus Depth
2. Color: White.
3. Steel Face Sheet Thickness: 24 gage, 0.0239 inch .
4. Core: Plywood, manufacturer's standard thickness, laminated to face sheet.
5. Backing: Aluminum foil, laminated to core.
6. Size: As indicated on drawings.
7. Corner detail: Square.
8. Magnetic backing
9. Orientation: landscape
10. Hanging method: Stand-offs, stainless steel
11. Accessories: Provide chalk tray and magnetic marker caddy, and 4 magnets per unit.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that internal wall blocking is ready to receive work and positioning dimensions are as indicated on shop drawings.

3.02 INSTALLATION

A. Install boards in accordance with manufacturer's instructions.

B. Secure units level and plumb.

3.03 CLEANING

A. Clean board surfaces in accordance with manufacturer's instructions.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

B. Cover with protective cover, taped to frame.

C. Remove temporary protective cover at Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 101400
SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Room and door signs.

B. Building identification signs.

1.02 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.

1. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
3. Submit for approval by Owner through Architect prior to fabrication.

D. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years of documented experience.

1.05 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.

1. Sign Type: Flat signs with applied character panel media as specified.
2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
3. Character Height: 1 inch.
4. Sign Height: 2 inches, unless otherwise indicated.
5. Office Doors: Identify with the room names and numbers indicated on drawings.

6. Conference and Meeting Rooms: Identify with the room names and numbers indicated on drawings.
7. Service Rooms: Identify with the room names and numbers indicated on drawings.
8. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN", room numbers indicated on the drawings, and braille.

C. Building Identification Signs:
1. Use individual metal letters.
2. Mount on outside wall in location indicated on drawings.

2.02 SIGN TYPES

A. Flat Signs: Signage media without frame.
1. Edges: Square.
2. Corners: Square.
3. Wall Mounting of One-Sided Signs: Tape adhesive.

B. Color and Font: Unless otherwise indicated:
1. Character Font: Helvetica, Arial, or other sans serif font.
2. Character Case: Upper case only.
3. Background Color: As scheduled.
4. Character Color: Contrasting color.

2.03 TACTILE SIGNAGE MEDIA

A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
1. Total Thickness: 1/8 inch.

B. Applied Character Panels: Acrylic plastic base, with applied acrylic plastic letters and braille.
1. Total Thickness: 1/8 inch.
2. Letter Thickness: 1/8 inch.
3. Letter Edges: Square.

2.04 DIMENSIONAL LETTERS

A. Metal Letters:
1. Metal: Aluminum casting.
2. Finish: Brushed, satin.
3. Mounting: Returns with concealed fasteners, painted black with clear polyurethane finish..

2.05 ACCESSORIES

A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 102113.19
PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Solid plastic toilet compartments.

B. Urinal and vestibule screens.

1.02 REFERENCE STANDARDS

A. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

B. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.

C. Samples: Submit two samples of partition panels, __6__x__6__ inch in size illustrating panel finish, color, and sheen.

D. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Solid Plastic Toilet Compartments:
   1. Basis of Design: Scranton Products (Santana/Comtec/Capital): www.scrantonproducts.com.
   2. Substitutions: Section 016000 - Product Requirements.

2.02 PLASTIC TOILET COMPARTMENTS

A. Solid Plastic Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid molded high density polyethylene (HDPE), tested in accordance with NFPA 286; floor-mounted headrail-braced.
   1. Provide zero sight-line partition and hardware installation.
   2. Color: As selected by Architect from manufacturer's full color line.

B. Standard Partitions
   1. Basis of Design: Hiny Hiders
      a. Doors:
         1) Thickness: 1 inch.
         2) Width: 24 inch.
         3) Width for Handicapped Use: 36 inch, out-swinging.
         4) Height: 66 inch.
      b. Panels:
         1) Thickness: 1 inch.
         2) Height: 66 inch.
      c. Pilasters:
         1) Thickness: 1 inch.
         2) Width: As required to fit space; minimum 3 inch.
         3) 82 inches high, fastened to floor.

C. Screens: Without doors; to match compartments; mounted to wall with two panel brackets.

2.03 ACCESSORIES

A. Pilaster Shoes: Stainless steel, satin finish, 3 inches high; concealing floor fastenings.

B. Head Rails: Heavy-duty extruded 6463-T5 alloy aluminum, anti-grip profile.
   1. Size: Manufacturer's standard size.

C. Pilaster Brackets: Satin stainless steel.

D. Wall Brackets: Continuous type, satin stainless steel.

E. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.

F. Hinges: Anodized aluminum; satin finish.
   1. Continuous-type hinge, self closing.

G. Door Hardware: Anodized aluminum; satin finish.
   1. Provide "Zero Sight-line" hardware.
   2. Door strike/keeper: Heavy-duty extruded aluminum 6436-T5 alloy with a bright dip anodized finish. Secured to pilasters with stainless steel tamper resistant Torx head sex bolts. Bumper shall be made of extruded black vinyl.
   3. Provide occupancy indicator.
   4. Equip outswing handicapped doors with second door pull and door stop.
   5. Door Latch: Slide type with exterior emergency access feature.
   6. Door Strike and Keeper with Rubber Bumper: Mount on pilaster in alignment with door latch.
   7. Provide door pull for outswinging doors.

H. Coat Hook with Rubber Bumper: One per compartment, mounted on door.

I. SOLID PLASTIC PRIVACY SCREENS
   1. Provide plastic privacy screens in urinal and entry toilet room applications as indicated or scheduled.
   2. Panels, and pilasters, if required, 1 inch (25 mm) thick with edges rounded to a radius. Screens to be mounted at 14 inches (356 mm) above the finished floor. Color as selected by Architect from manufacturer's full line of current colors.
   3. Screen Type: Wall mounted.
      a. Urinal Screens: 24 inches (610 mm) wide by 42 inches (1067 mm) high.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify correct spacing of and between plumbing fixtures.

C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

E. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch.

B. Maximum Variation From Plumb: 1/8 inch.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.

B. Adjust hinges to position doors in full closed position when unlatched. Return out-swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 102601
WALL AND CORNER GUARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Corner guards.

1.02 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Indicate physical dimensions, features, anchorage details, and rough-in measurements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wall and Corner Guards:
   1. Construction Specialties, Inc: www.c-sgroup.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 COMPONENTS

A. Corner Guards - Flush Mounted: Rigid vinyl drywall corner bead with semi-rigid vinyl corner guard.
   1. Corner: 90 degrees.
   2. Color: As selected from manufacturer's standard colors.

B. Corner Guards - Flush Mounted:
   1. Material: Polyethylene terephthalate (PET or PETG); PVC-freewith full height extruded aluminum retainer.
   2. Performance: Resist lateral impact force of 100 lbs at any point without damage or permanent set.
   3. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
   4. Width of Wings: 3 inches.
   5. Corner: Radiused.
   6. Color: As selected from manufacturer's standard colors.
   7. Length: One piece to extend full height of corner, from top of wall base to ceiling.
   8. Preformed end caps.

C. Mounting Brackets and Attachment Hardware: Appropriate to component and substrate.

2.03 FABRICATION

A. Fabricate components with tight joints, corners and seams.

B. Pre-drill holes for attachment.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to wall framing members only.

3.03 TOLERANCES

A. Maximum Variation From Required Height: 1/4 inch.

B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

B. Under-lavatory pipe supply covers.

C. Diaper changing stations.

D. Utility room accessories.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Concealed supports for accessories, including in wall framing and plates, above ceiling framing, and _____.

B. Section 088300 - Mirrors: Other mirrors.

C. Section 093000 - TILING: Ceramic washroom accessories.

D. Section 102113.19 - Plastic Toilet Compartments.

E. Section 224000 - Plumbing Fixtures: Under-lavatory pipe and supply covers.

1.03 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

B. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

D. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

E. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2011.

F. ASTM C1036 - Standard Specification for Flat Glass; 2011.

G. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2008 (Reapproved 2013).

H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

I. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2004 (Reapproved 2010).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet, Shower, and Bath Accessories:
   1. ASI - American Specialties, Inc: www.americanspecialties.com.
   2. Bradley Corporation; _____: www.bradleycorp.com.
   3. Bobrick Washroom Equipment, Inc.: www.bobrick.com.
   4. Substitutions: Section 016000 - Product Requirements.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Keys: Provide 2 keys for each accessory to Owner; master key lockable accessories.

C. Stainless Steel Sheet: ASTM A666/A666M, Type 304.

D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

F. Adhesive: Two component epoxy type, waterproof.

G. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES - AS SCHEDULED

2.05 UNDER-LAVATORY PIPE AND SUPPLY COVERS

A. Under-Lavatory Pipe and Supply Covers:
   1. Insulate exposed drainage piping including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
   2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
   3. Construction: 1/8 inch flexible PVC.
      a. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
   4. Color: Gray.
   5. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.

D. Verify that field measurements are as indicated on drawings.

E. See Section 061000 for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated. See drawings.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 105113
METAL LOCKERS

PART 2 PRODUCTS

1.01 LOCKER APPLICATIONS

A. Janitorial: Metal lockers, free-standing with matching closed base.
   1. Basis of Design: Linds Upright Locker, Model LKS30 (Alternate)
      a. Width: 12 inches.
      b. Depth: 12 inches.
   2. Configuration: Five tier.
   3. Fittings:
      a. Single shoe shelf.
      b. Hooks: One single prong.
   4. Ventilation: Louvers at top and bottom of door panel.
   5. Locking: Padlock hasps, for padlocks provided by Owner.
   6. Provide sloped top.

1.02 METAL LOCKERS

A. Lockers: Factory assembled, made of formed sheet steel, ASTM A653/A653M SS Grade 33/230, with G60/Z180 coating, stretcher leveled; metal edges finished smooth without burrs; baked enamel finished inside and out.
   1. Color: To be selected by Architect.

B. Doors: Channel edge; welded construction, manufacturer's standard stiffeners, grind and finish edges smooth.
   1. Door Thickness: 16 gage, 0.0598 inch, minimum.
   2. Form recess for operating handle and locking device.

C. Hinges: Continuous piano hinge with powder coat finish to match locker color.

D. Sloped Top: 20 gage, 0.0359 inch, with closed ends.

E. Coat Hooks: Stainless steel or zinc-plated steel.

F. Locks: Locker manufacturer's standard type indicated above.

PART 3 EXECUTION

2.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Place and secure on prepared base.

C. Install lockers plumb and square.

D. Secure lockers with anchor devices to suit substrate materials. Minimum Pullout Force: 100 pounds.

E. Install end panels and sloped tops.

F. Install fittings if not factory installed.

G. Replace components that do not operate smoothly.

2.02 CLEANING

A. Clean locker interiors and exterior surfaces.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 122400
WINDOW SHADES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Interior manual roller shades.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Concealed wood blocking for attachment of headrail brackets.

1.03 REFERENCE STANDARDS

A. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2015.

B. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.

C. WCMA A100.1 - Standard for Safety of Window Covering Products; 2022.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Sequencing:
   1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
   2. Do not install shades until final surface finishes and painting are complete.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.

B. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.

C. Selection Samples: Include fabric samples in full range of available colors and patterns.

D. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product.

E. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.

F. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of this type with minimum three years of documented experience with shading systems of similar size and type.

1.07 MOCK-UP

A. Mock-Up: Provide full size mock-up of window shade system complete with selected shade fabric including example of seams and batten pockets when applicable.
   1. Obtain Architect's approval of light and privacy characteristics of fabric prior to fabrication.
   2. Full-sized mock-up may become part of the final installation.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.

B. Handle and store shades in accordance with manufacturer's recommendations.

1.09 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

A. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:
   1. Shade Hardware: One year.
   2. Fabric: One year.
   3. Aluminum and Steel Coatings: One year.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Interior Manually Operated Roller Shades:
   1. Draper, Inc; Clutch Operated FlexShade: www.draperinc.com/#sle.
   2. Hunter Douglas Architectural; RB500 Manual Roller Shades: www.hunterdouglasarchitectural.com/#sle.
   3. Levolor; _____: www.commercial.levolor.com/#sle.
   4. Lutron Electronics Co., Inc; Contract Roller Manual Roller Shades: www.lutron.com/#sle.
   5. Substitutions: See Section 016000 - Product Requirements.

2.02 ROLLER SHADES

A. General:
   1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
   2. Provide shade system that operates smoothly when shades are raised or lowered.

B. Roller Shades:
   1. Description - Interior Roller Shades: Single roller, manually operated fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and accessories.
      a. Drop Position: Regular roll.
      b. Roll Direction: Roll down, closed position is at window sill.
      c. Mounting: Window jamb mounted - inside, between jambs.
   2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
   3. Roller Tubes: As required for type of shade operation.
   4. Hembars: Designed to maintain bottom of shade straight and flat.
      a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
   5. Manual Operation for Interior Shades:
      a. Clutch Operator: Manufacturer's standard material and design, permanently lubricated.
      b. Drive Chain: Continuous loop, beaded ball chain with restraining device, 95 lb minimum breaking strength; comply with WCMA A100.1. Provide upper and lower limit stops.
      c. Chain Retainer:
         1) Chain tensioning device complying with WCMA A100.1.
   6. Accessories:
      a. End Caps: Provide manufacturer's standard end caps to cover exposed ends of brackets.

2.03 SHADE FABRIC

A. Fabric for Light-Filtering Shades: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
   1. Material Certificates and Product Disclosures:
      a. Low-Emitting Material Certification: Greenguard Gold certified and listed in UL (GGG).

2. Performance Requirements:
   a. Flammability: Pass NFPA 701 large and small tests.
   b. UV Blockage: 97 percent.
3. Openness Factor: 3 percent.
4. Color: As selected by Architect from manufacturer's full range of colors.

2.04 ROLLER SHADE FABRICATION

A. Field measure finished openings prior to ordering or fabrication.

B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.
   1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch space between bottom bar and window stool.
   2. Horizontal Dimensions - Inside Mounting: Provide symmetrical light gaps on both sides of shade not to exceed 1/2 inch total.

C. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine finished openings for deficiencies that may preclude satisfactory installation.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.

B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.

B. Replace shades that exceed specified dimensional tolerances at no extra cost to Owner.

C. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 CLEANING

A. Clean soiled shades and exposed components as recommended by manufacturer.

B. Replace shades that cannot be cleaned to "like new" condition.

3.05 PROTECTION

A. Protect installed products from subsequent construction operations.

B. Touch-up, repair, or replace damaged products before Substantial Completion.

3.06 MAINTENANCE

A. See Section 017000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 123600
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural cabinet work.

B. Wall-hung counters and vanity tops.

1.02 RELATED REQUIREMENTS

A. Section 064100 - Architectural Wood Casework.

B. Section 093000 - TILING: Tile for countertops.

C. Section 224000 - Plumbing Fixtures: Sinks.

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

D. ISFA 3-01 - Classification and Standards for Quartz Surfacing Material; 2013.

E. MIA (DSDM) - Dimensional Stone Design Manual, Version VIII; 2016.

F. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

G. PS 1 - Structural Plywood; 2009.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Specimen warranty.

C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.

D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.

E. Sustainable Design Submittal: Documentation for sustainably harvested wood-based components.

F. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

G. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

H. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

B. Quality Certification:
   1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.

2. Provide designated labels on shop drawings as required by certification program.
3. Provide designated labels on installed products as required by certification program.
4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Natural Quartz self-supporting over structural members.
1. Flat Sheet Thickness: 1-1/8" inch, minimum.
2. Natural Quartz Slabs: Complying with ISFA 3-01 and NEMA LD 3; _____ resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
    a. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with the MIA Dimension Stone Design Manual.
    b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
    c. Finish on Exposed Surfaces: Polished.
    d. Color and Pattern: As indicated on drawings.
3. Other Components Thickness: 3/4 inch, minimum.
4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; ogee edge.
5. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.
6. Skirts: As indicated on drawings.
7. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Premium Grade.

2.02 MATERIALS

A. Wood-Based Components:
1. Wood fabricated from old growth timber is not permitted.
2. Provide sustainably harvested wood, certified or labeled as specified in Section 016000 - Product Requirements.
3. Provide wood harvested within a 500 mile radius of the project site.

B. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.

C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

D. Joint Sealant: Mildew-resistant silicone sealant, clear.

2.03 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
1. Join lengths of tops using best method recommended by manufacturer.

2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
2. Height: 4 inches, unless otherwise indicated.

C. Solid Surfacing: Fabricate tops up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

D. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

B. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.

B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.

C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

SECTION 104400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

B. Fire extinguisher cabinets.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

A. FM (AG) - FM Approval Guide; current edition.

B. NFPA 10 - Standard for Portable Fire Extinguishers; 2013.

C. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide extinguisher operational features, color and finish, anchorage details, and installation instructions.

C. Shop Drawings: Indicate locations of cabinets, cabinet physical dimensions, rough-in measurements for recessed cabinets, and locations of individual fire extinquishers.

D. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.05 FIELD CONDITIONS

A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers:
1. Ansul, a Tyco Business: www.ansul.com/#sle.
2. Kidde, a unit of United Technologies Corp; _____: www.kidde.com/#sle.
3. Pyro-Chem, a Tyco Business: www.pyrochem.com.
4. Strike First Corporation of America: www.strikefirstusa.com/#sle.
5. Substitutions: See Section 016000 - Product Requirements.

B. Fire Extinguisher Cabinets and Accessories:
1. Ansul, a Tyco Business: www.ansul.com.
2. Larsen's Manufacturing Co: www.larsensmfg.com.
3. Pyro-Chem, a Tyco Business: www.pyrochem.com.
4. Strike First Corporation of America; EL-Elite Architectural Series Fire Extinguisher Cabinet, Non-Fire-Rated: www.strikefirstusa.com/#sle.

2.02 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.

B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
1. Class: A:B:C type.
2. Size: 5 pound.
3. Finish: Baked polyester powder coat, color as selected.
4. Temperature range: Minus 40 degrees F to ___ degrees F.

RECEIVED ALLSTATE CONSTRUCTION 2026-06-30

2.03 FIRE EXTINGUISHER CABINETS

A. Cabinet Configuration: 1 1-2" square trim, Semi-recessed type.
   1. Size to accommodate accessories.
   2. Trim: Flat rolled edge, with ____ inch wide face.
   3. Provide cabinet enclosure with right angle inside corners and seams, and with formed perimeter trim and door stiles.

B. Door: 0.036 inch thick, reinforced for flatness and rigidity; latch. Hinge doors for 180 degree opening with two butt hinge. Provide nylon catch.

C. Door Glazing: Float glass, clear, 1/8 inch thick, and set in resilient channel glazing gasket.

D. Door style: Vertical Duo

E. Finish of Cabinet Exterior Trim and Door: #4 Stainless Steel.

F. Applied Graphics: Provide applied vinyl lettering as follows: FIRE EXTINGUISHER. Color - black, orientation - vertical.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure rigidly in place.

C. Place extinguishers in cabinets.

3.03 MAINTENANCE

A. Provide a separate maintenance contract for specified maintenance service.

END OF SECTION

SECTION 323500
SCREENING DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal screening devices.

1.02 RELATED REQUIREMENTS

A. Section 311000 - Site Clearing.

B. Section 312316 - Excavation.

1.03 REFERENCE STANDARDS

A. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate plan layout, post foundation dimensions, hardware anchorage, and spacing and schedule of components.

PART 2 PRODUCTS

2.01 MATERIALS

A. Metal Screening Devices:
   1. Posts: Aluminum, extruded in accordance with ASTM B221.
   2. Panels: Aluminum, in accordance with ASTM B209/B209M.
      a. Pattern: As shown on documents.
      b. Size: 48 by 78 inches.
      c. Color: As indicated on drawings.
      d. Finish: Smooth.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:
   1. Verify installation area is clear; see Section 311000.
   2. Verify grades and elevations; see Section 312316.

3.02 INSTALLATION

A. Concrete Footings:
   1. Install according to manufacturer's recommendations.

B. Metal Screening Devices:
   1. Install according to manufacturer's written instructions.
   2. Post Framing:
      a. Embed posts 3 feet in concrete footings.
      b. Set posts level and plumb in position indicated on drawings.
      c. Make provisions for erection loads and sufficient temporary bracing to maintain structure plumb and in true alignment until completion of erection and installation of permanent bracing.
   3. Panel Sheathing:
      a. Securely fasten to posts.

END OF SECTION

MEI PROJECT NO. 052.038.000

TECHNICAL SPECIFICATIONS
ASBESTOS ABATEMENT – KELLOGG BUILDING
FLORIDA STATE UNIVERSITY
TALLAHASSEE, FLORIDA

Prepared for

ARCHITECTS LEWIS WHITLOCK
206 WEST VIRGINIA STREET
TALLAHASSEE, FLORIDA 32301

14 JANUARY 2026

Mihir Environics Inc.
3161 ELIZA ROAD UNIT # 2
TALLAHASSEE, FL 32308
(850) 422-1255

MEI PROJECT NO. 052.038.000

TECHNICAL SPECIFICATIONS
ASBESTOS ABATEMENT – KELLOGG BUILDING
FLORIDA STATE UNIVERSITY
TALLAHASSEE, FLORIDA

Prepared for

ARCHITECTS LEWIS WHITLOCK
206 WEST VIRGINIA STREET
TALLAHASSEE, FLORIDA 32301

14 JANUARY 2026

Reviewed by: Ajay Thakkar, C.I.H.
Florida License No. IA00000056

Mihir Environics Inc.
3161 ELIZA ROAD UNIT # 2
TALLAHASSEE, FL 32308
(850) 422-1255

INDEX

1 **SUMMARY OF WORK** **1**
2 **GENERAL WORK REQUIREMENTS** **1**
3 **DEFINITIONS** **2**
4 **PROJECT RECORDS AND COORDINATION** **8**
5 **REGULATIONS** **8**
6 **LICENSE REQUIREMENTS** **9**
7 **AGENCY NOTIFICATIONS** **9**
8 **SPECIAL REPORTS** **10**
9 **SUBMITTALS** **11**
10 **MATERIALS AND EQUIPMENT** **13**
11 **UTILITIES** **17**
12 **TEMPORARY PRESSURE DIFFERENTIAL SYSTEM** **18**
13 **DECONTAMINATION ENCLOSURE SYSTEM** **20**
14 **WORKER PROTECTION - ASBESTOS ABATEMENT** **21**
15 **WORK AREA PREPARATION** **24**
16 **REMOVAL OF ASBESTOS-CONTAINING MATERIAL** **27**
17 **WORK AREA CLEARANCE PROCEDURES** **28**
18 **LOAD-OUT AND DISPOSAL OF ACM** **29**

APPENDIX

Certificate of Worker's Release A1
Respiratory Protection Justification A2
Drawings
Drawing Notes 11 pages
Drawings 18 pages

Asbestos Survey Update Report – Kellogg Building – 22 March 2024

1 SUMMARY OF WORK

1.1 PROJECT IDENTIFICATION: The project is Asbestos Abatement – Kellogg Building, Florida State University, Tallahassee, Florida, The Owner is Florida State University (FSU), Tallahassee, Florida. The Technical Specifications dated 14 January 2026 was prepared for Architects Lewis Whitlock by Mihir Environics, Inc. (MEI). This specifications for asbestos abatement as part of Kellogg Building Remodeling, Phase 1 project.

1.2 SCOPE OF WORK: The Contractor shall be responsible for compliance with all current requirements for removal and disposal all asbestos-containing materials (ACM) as identified in the Drawings and Drawing Notes. The Contractor shall furnish all labor, equipment, materials, worker training, transportation and disposal, and is responsible for costs, fees, licenses and permits related to handling and disposal of the ACM in Kellogg Building. Asbestos abatement work shall include removal of asbestos-containing and asbestos-contaminated material (ACM) from the work areas as shown on the drawings. ACM scheduled for removal includes the following: Asbestos containing spray applied fireproofing material, flooring material and mastic; asbestos-containing material (ACM) such as sink coating, lab counter tops, piping insulation, debris, etc. There are other materials which are considered as asbestos contaminated material located in the building include HVAC components, walls which are scheduled for demolition, piping insulation, ceiling, light fixtures, etc.

1.3 APPROXIMATE QUANTITIES: Approximate quantity of asbestos containing material (ACM) to be removed is indicted in the Drawing Notes and Asbestos Survey Update Report for Kellogg Building.

1.4 SCHEDULE OF WORK: The Work shall be completed in accordance with the Construction Manager schedule for Kellogg Building Remodeling project.

2 GENERAL WORK REQUIREMENTS

2.1 SUPERVISION AND QUALITY OF THE WORK:

2.1.1 Contractor's Representative: From the start of work through completion of the project the Contractor shall have on-site a responsible and competent Superintendent. The Superintendent will be the Contractor's representative at the site, shall have authority to act on behalf of the Contractor, and shall retain complete jurisdiction over the work. All communications to the Superintendent by the Owner shall be as binding as if given to the Contractor.

2.1.2 Quality of Work: The Superintendent shall supervise, inspect and direct the Work competently and efficiently, devoting such skills and expertise as may be necessary to perform the Work in accordance with this Specification.

3 DEFINITIONS

3.1 TERMINOLOGY: The following commonly used terms are defined in the context of these specifications.

3.1.1 Abatement: Procedures to control or decrease fiber release from asbestos-containing building materials or insulation material containing asbestos. Includes removal, enclosure, and encapsulation.

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

3.1.3 Aggressive Sampling: Air monitoring samples collected while a leaf blower, fans, or other such devices are used to generate air turbulence within the work area.

3.1.4 Air Filtration Device (AFD) - A portable local exhaust system equipped with HEPA filtration, capable of maintaining a constant low velocity air flow into contaminated areas from adjacent, uncontaminated areas and capable of maintaining a negative air pressure with respect to the adjacent, uncontaminated areas.

3.1.5 Air Lock: A system for permitting ingress or egress to the work area while permitting minimal air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways placed a minimum of three feet apart.

3.1.6 Air Monitoring: The process of measuring the fiber content of a specific volume of air in a stated period of time. Personal air sampling results shall be calculated to reflect the employee's eight-hour time weighted average (TWA) exposure. Area sampling results are reported directly, without calculating the TWA.

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

3.1.8 Approximate Quantity: The term "approximate quantity" when used to describe the quantities of materials scheduled for asbestos abatement or replacement shall mean the quantity stated plus or minus 5 percent.

3.1.9 Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker

protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.

3.1.10 Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.

3.1.11 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.

3.1.12 Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.

3.1.13 Asbestos Debris: Pieces of ACBM that can be identified by color, texture, or composition, or means dust if determined by an accredited inspector to be ACM.

3.1.14 Asbestos Removal Encapsulant: A chemical solution used in place of amended water during asbestos removal to penetrate, bind, and encapsulate the asbestos-containing material.

3.1.15 Authorized Visitor: The Owner or the Owner's representatives or representatives of any regulatory or other agency having jurisdiction over the project.

3.1.16 Barrier: Any surface that seals off the work area to inhibit the movement of air.

3.1.17 Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

3.1.18 Class I and Class II Asbestos Work: Work as defined by OSHA in Standard 29 CFR 1926.1101(b).

3.1.18.1 Class I Asbestos Work means activities involving the removal of thermal system insulation (TSI) and surfacing asbestos-containing material (ACM) and presumed asbestos-containing material (PACM).

3.1.18.2 Class II Asbestos Work means activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, asphaltic roofing, asbestos cement roofing and siding shingles, and construction mastics.

3.1.19 Competent Person: Definition and responsibilities as set down in 29 CFR 1926.1101(b) and as outlined herein. One who is capable of identifying existing asbestos hazards 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), and for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent.

3.1.20 Critical Seal: An airtight seal that covers openings along the perimeter walls, ceiling and floor of the work area. The critical seals consist of one layer of reinforced fire-retardant plastic sheeting that covers each opening. Critical seals are established prior to plasticizing the work area.

3.1.21 Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

3.1.22 Decontamination Enclosure System: A series of connected rooms for the decontamination of workers (a Personnel Decontamination Enclosure System) or of materials and equipment (Equipment Decontamination Enclosure System).

3.1.23 Differential Air Pressure Recording Device: A device capable of producing a continual strip record, in increments of 0.001 inches of water of the pressure differential between the containment area (work area) and the ambient air pressure.

3.1.24 Disposal Bags: Properly labeled 6-mil thick leak-tight plastic bags used for transporting asbestos waste from regulated area to the disposal site.

3.1.25 Equipment Decontamination Enclosure System: A decontamination system for waste materials and equipment, typically consisting of a designated area of the work area, a washroom, and a holding area, with an air lock between any two adjacent rooms and a curtained doorway between the holding area and the non-work area. Not to be used for personnel entry/exit.

3.1.26 Encapsulant (Sealant): A liquid material which can be applied to ACM and which controls the possible release of asbestos fibers from the material, either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

3.1.27 Encapsulation: Application of an encapsulant to asbestos-containing building materials to control the possible release of asbestos fibers into the ambient air.

3.1.28 Engineer: The Owner's representative who is authorized to exercise general administration and supervision of the work under the direction of the Owner.

3.1.29 Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area.

3.1.30 Friable ACM: A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

3.1.31 Full Facepiece High Efficiency Respirator (FFHER): A respirator which covers the wearer's entire face from the hairline to below the chin and which is equipped with a HEPA filter.

3.1.32 Glove Bag Technique: A method of limited application for removing small amounts of ACM from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces. The glove bag assembly is a manufactured or fabricated device typically constructed of 6-mil transparent plastic with two inwardly projecting, long-sleeved rubber gloves, one inwardly projecting waterwand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove bag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process. All workers who are permitted to use the glove bag technique must be highly trained, experienced, and skilled in this method.

3.1.33 Half Mask High Efficiency Respirator (HMHER): A respirator which covers one-half of the wearer's face, from the bridge of the nose to below the chin, and is equipped with HEPA filters.

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

3.1.35 HEPA Vacuum Equipment: High efficiency particulate air (HEPA) filtered vacuuming equipment having a UL 586 filter system capable of collecting and retaining asbestos fibers.

3.1.36 Lockdown: Procedure of applying an encapsulant as a protective coating or sealant to a surface from which ACM has been removed in order to control and minimize airborne asbestos fiber generation that might result from residual asbestos-containing debris.

3.1.37 Movable Object: A unit of equipment or furniture which can be removed from the work area.

3.1.38 Negative Initial Exposure Assessment: A demonstration by the employer that employee exposure during an operation is expected to be consistently below the PEL.

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

3.1.40 Negative Pressure Ventilation System: A pressure differential and ventilation system.

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

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

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

3.1.42 Permissible Exposure Limits (PELs): PELs shall be as determined using the SAMPLING AND ANALYTICAL PROCEDURE as promulgated in 29 CFR 1926.1101, Appendix A.

3.1.42.1 Time Weighted Average Limit: No employee shall be exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an eight (8) hour time-weighted average (TWA).

3.1.42.2 Excursion Limit: No employee shall be exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty (30) minutes.

3.1.43 Personnel Decontamination Enclosure System: A decontamination system for personnel and limited equipment, typically consisting of an equipment room, shower room, and clean room, with an air lock between any two adjacent rooms, and a curtained doorway between the equipment room and the work

area, and a curtained doorway between the clean room and the non-work area. The decontamination system serves as the only entrance/exit for the work area.

3.1.44 Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

3.1.45 Plasticize: To cover floors and walls with plastic sheeting as herein specified.

3.1.46 Powered Air Purifying Respirator (PAPR): Either a full facepiece, helmet, or hooded respirator that powers breathing air to the wearer after the air has been purified through a HEPA filter.

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

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

3.1.49 RACM: Means “regulated asbestos-containing material” to include: a) friable asbestos material; b) Category I non-friable ACM that has become friable; c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or; d) Category II non-friable 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.

3.1.50 Regulated Area: Area established by the employer to demarcate areas where Class II asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulates. Requirements for regulated areas are set out in 29 CFR 1926.1101(e).

3.1.51 Removal: The act of removing and transporting asbestos-containing or asbestos-contaminated materials from the work area to a suitable disposal site.

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

3.1.53 Testing Laboratory IH Technician: The Testing Laboratory Technician (IH Technician) is the Owner’s representative authorized to perform work related to asbestos sample collection and analysis.

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

3.1.55 Type C Respirator: A respirator which supplies air to the wearer from a source outside the work area by means of a compressor.

3.1.56 Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with amended water or asbestos removal encapsulant and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.

3.1.57 Work Area: Designated rooms, spaces, or areas of the project where asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A Contained Work Area has been sealed, plasticized, and equipped with a decontamination enclosure system. A Non-Contained Work Area is an isolated or controlled-access area which has not been plasticized.

4 PROJECT RECORDS AND COORDINATION

4.1 PROJECT DOCUMENTATION: Maintain on the project site a daily log documenting the dates and times of the following:

a) Meetings: purpose, attendees, brief discussion.
b) Personnel, by name and SSN, entering and leaving the work area.
c) Special or unusual events, equipment failures, accidents.
d) Air monitoring tests and test results (OSHA compliance monitoring performed during the work).
e) Removal of waste materials from the work area.
f) Inspections, and release of the work area for re-occupancy.

5 REGULATIONS

5.1 REGULATORY REQUIREMENTS: All applicable federal, state, and local laws and regulations concerning environmental pollution control and asbestos abatement, as well as the specific requirements stated elsewhere in the Contract Documents, shall be complied with. The Contractor shall be familiar with the following applicable codes and regulations. The most recent issue of each document shall govern. Where conflict exists among various requirements or with these specifications, the more stringent requirements shall apply.

5.1.1 TITLE 29, CODE OF FEDERAL REGULATIONS, U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS.

Part 1910.20 Access to Employee Exposure and Medical Records

Part 1910.134 Respiratory Protection

Part 1926.21 Safety Training and Education

Part 1926.59 Hazard Communication

Part 1926.1101 Asbestos

Part 1926 subpart l, and 1926.450 – 1926.454 Scaffolding

Part 1926 subpart m, and 1926.500 through 1926.503. Fall Protection

Part 1926.1101 Confined Space.

5.1.2 TITLE 40, CODE OF FEDERAL REGULATIONS, U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) STANDARDS.

Part 61, Subpart A — National Emissions Standard for Hazardous Air Pollutants - General Provisions

Part 61, Subpart M — National Emission Standards for Hazardous Air Pollutants - National Emission Standard for Asbestos

Part 763 — Asbestos-Containing Materials in Schools

5.1.3 TITLE 49, CODE OF FEDERAL REGULATIONS, U.S. DEPARTMENT OF TRANSPORTATION (DOT) STANDARDS

Part 171 — Hazardous Substances

Part 172 — Hazardous Materials Tables and Hazardous Materials Communications Regulations

Part 173 — Shippers - General Requirements

5.1.4 STATE OF FLORIDA:

Florida Asbestos Act, Chapter 87-394, Florida Statutes Sections 255.551-255.565 as amended.

Florida Asbestos Act, Chapter 87-394, Florida Statutes Sections 469.001-469.015 as amended.

Florida Air Pollution and Control Act, Florida Statutes Section 403 as amended (Florida Statutes, Chapter 403).

6 LICENSE REQUIREMENTS

6.1 STATE OF FLORIDA LICENSE: The Contractor shall hold a current license as a State of Florida Asbestos Contractor.

7 AGENCY NOTIFICATIONS

7.1 PERMITS AND STATE LICENSES: The Contractor shall be responsible for obtaining necessary permits and state licenses in conjunction with asbestos removal, hauling and disposal, and shall provide timely notification of such actions as may be required by federal, state, regional, and local authorities.

7.2 NOTIFICATIONS: Prior to commencement of asbestos abatement work, the Contractor shall send written notice of the proposed abatement work to the agencies and offices listed below. Notification must be submitted on the "Notification of Demolition & Renovation" form. The listing of applicable agencies and offices is as follows:

a. Asbestos Coordinator
Florida Department of Environmental Protection
Carr building, Suite 115
3800 Commonwealth Blvd., MS 55
Tallahassee, FL 32399
(850) 245-2984

b. Mr. Mark Klawinski, CIH, CSP
Environmental Health & Safety
Florida State University
Carothers Hall
Tallahassee, Florida 32306
Office: (850) 644-8177

c. Project Manager
Mihir Environics, Inc.
3161 Eliza Road, Unit 2
Tallahassee, FL 32308
(850) 422-1255

7.2.1 Original Notification: Notification must be submitted on the "Notification of Demolition and Renovation" form provided in Appendix A to this Section. The notice shall be received by each party at least ten (10) working days before the start of asbestos abatement work.

7.2.2 Revising Notifications: Provide written notification of schedule changes to the agencies and offices requiring notification under this Section.

7.2.3 FSU Police Department Notification: Provide written notification of the proposed abatement work to the local police department. The notification letter shall include the address of the facility, dates work is to be performed, and drawings indicating the areas to undergo abatement.

8 SPECIAL REPORTS

8.1 ACCIDENT REPORTS: When an accident, personal injury or an event of unusual and significant nature occurs at site the Contractor shall prepare and submit a special report listing the chain of events, persons participating, response by the Contractor's personnel, and similar pertinent information.

8.2 BUILDING CONDITION: When an unusual condition of the building is discovered during the work (e.g. leaks, termites, corrosion, structural damage, etc.), prepare and submit a report indicating the condition discovered.

8.3 HAZARDOUS CONDITIONS: When hazardous conditions, hazardous materials or hazardous wastes are unexpectedly uncovered during the work, the Contractor shall stop all Work in connection with such hazardous conditions and immediately notify the Owner's representative. Submit a report indicating the condition discovered and details of the actions taken within 24 hours.

9 SUBMITTALS

9.1 PRE-WORK SUBMITTAL: Provide three copies of the following submittals. The Contractor must receive written approval of the submittals prior to mobilization to project site.

9.1.1 Insurance Certificates: Provide copy of general liability and asbestos coverage insurance.

The Asbestos Contractor shall purchase at the Contractor's expense COMMERCIAL GENERAL LIABILITY INSURANCE coverage in which the **Florida State University Board of Trustees** shall be a Named Insured. Such insurance shall provide coverage for claims arising from bodily injury and/or property damage and/or personal injury resulting from the operations of the Asbestos Contractor on this Project at the Project site. Such insurance coverage shall be provided in a form commonly referred to as Occurrence Coverage. Such insurance shall be provided with limits of liability as stated in Paragraph below. This insurance must be procured through underwriter with an A.M. Best rating of A- or better.

1) LIMITS OF LIABILITY:

EACH OCCURRENCE LIMIT	$1,000,000
PERSONAL INJURY AND ADVERTISING INJURY LIMIT	$1,000,000
FIRE DAMAGE LIMIT (any one fire)	$ 50,000
MEDICAL EXPENSE LIMIT (any one person)	$ 5,000
PRODUCTS AND COMPLETED OPERATIONS AGGREGATE LIMIT	$1,000,000
GENERAL AGGREGATE LIMIT (other than Products/ Completed Operations)	$1,000,000

2) Asbestos Contractor agrees to hold the Owner harmless from any disputes which may arise between the Asbestos Contractor and Insurance Company underwriting such COMMERCIAL GENERAL LIABILITY INSURANCE.

3) Insurance Certificates: Provide copy of Workmen's Compensation Insurance.

9.1.2 Conflict of Interest Affidavit and Public Entities Crime Form: Provide completed forms prior to start of the work.

9.1.3 Work Plan: Provide a written description on the method and removal procedures to be used to accomplish the work. Submit decontamination layout. Also provide health and safety plan including scaffolding, fall protection and

confined space. Provide work procedures for removal, load out and disposal of Transite ducts on third floor and on the roof.

9.1.4 Progress Schedule: Schedule showing the order in which the Contractor proposes to carry on the work, the date he will start work, and the projected date of completion. Note specific hours Contractor intends to work on site, and number of personnel to work each shift.

9.1.5 Notifications: Proof of written pre-work notification submitted to agencies requiring notification under Paragraph "Agency Notifications".

9.1.6 Worker's list: Provide a list of all workers to work at the site to the Building Manager for security clearance. Include name, social security number (last 4 digits), date of birth. The list should be on the Contractor's Letterhead.

9.1.7 Letter of compliance with Training, medical and respirator fit tests. Provide a letter on company letterhead signed by the Owner, indicating that all personnel working on this project (include list of employees at this project including last 4 digits of social security number) are trained in accordance with OSHA, EPA, and Florida DBPR; and have completed annual physical examination and respirator fit tests in accordance with OSHA requirements. Provide certificates upon request.

9.1.8 Training Certificates: Copy of all supervisor's and workers training certificates and any annual re-accreditation records which demonstrate receipt of EPA-approved or OSHA mandated training courses required to perform asbestos-related work.

9.1.9 Respirator fit test verification for asbestos abatement workers.

9.1.10 Copies of current Physician's statement for each employee assigned to perform asbestos abatement work for this project.

9.1.11 Product Information: Provide a list of all materials and equipment including Manufacturer's name to be brought to the site. Provide a Material Safety Data Sheet (MSDS) and Manufacturer's literature for materials, if requested.

9.1.12 Waste Handling Disposal: Written procedures for waste load-out, storage, transportation, and location of disposal site.

9.1.13 Certificate of Worker's Acknowledgment: Provide completed Worker's Acknowledgment for each employee to work on-site (see Appendix for example form).

9.1.14 Respiratory Protection Justification: Provide completed Respiratory Protection Justification prior to beginning work (see Appendix for example form).

9.2 DURING-WORK SUBMITTAL: Provide three copies of the following submittals as they become available.

9.2.1 New Personnel: Names of new personnel assigned to the project during the course of the work. Submit required documentation of training 24-hours in advance of mobilization of new personnel to project site.

9.2.2 Any changes in the Progress Schedule proposed by the Contractor for the work shall be submitted for approval seven (7) days prior to the commencement date of the proposed change, or as soon as practicable after a change in schedule is required. A revised Progress Schedule reflecting actual progress of the work and corrections for the remaining schedule shall be submitted at the end of each week.

9.2.3 Special Reports shall be submitted as soon as practicable following the incident.

9.2.4 Strip chart record of the work area differential air pressure readings. Submit chart each day for the previous 24-hour period.

9.2.5 Personnel air monitoring reports.

9.2.6 Landfill Receipt: Receipts from the landfill operator, that acknowledge delivery(s) of material shall be submitted within three days following removal of ACM from the building.

9.2.7 Waste Shipment Records: Copy of completed Waste Shipment Record form.

9.3 POST-PROJECT SUBMITTAL: Provide three copies of the following submittals on completion of the work.

9.3.1 Notifications: Copy of all notifications submitted to agencies requiring notification under Paragraph "Agency Notifications".

9.3.2 Personnel air monitoring reports.

9.3.3 Permits: Copy of all permits, or written approvals obtained for the work.

9.3.4 Log Book: Copy of all entries made in site log.

10 MATERIALS AND EQUIPMENT

10.1 GENERAL: Materials and equipment to be furnished for the work shall be installed according to the manufacturer's written instructions. Provide the following as required for the project:

10.1.1 Surfactant: Surfactant (Wetting Agent) shall consist of resin materials in a water base, which have been tested to ensure materials are non-toxic and

non-irritating to skin and eyes. Surfactant shall be installed according to the manufacturer's written instructions.

10.1.2 Encapsulants: Encapsulants used during this work shall be compatible with the finish materials to be installed on encapsulated surfaces after asbestos abatement work is completed. The encapsulant shall carry a Class "A" fire resistance rating and shall have an ASTM E-162 flame spread index of 15 or less. A tint shall be given by the Contractor to the encapsulant by means of the addition of non-toxic, nonflammable colorings before application. The encapsulant shall be installed according to the manufacturer's written instructions.

10.1.3 Other Materials and Equipment: Provide HEPA vacuums, sprayers, cutting tools, scrapers, brushes, cleaning materials, adhesive, and other equipment required to perform the Work complete. Materials and equipment shall be new or used, uncontaminated by asbestos, in serviceable condition, and appropriate for intended use.

10.1.4 Spraying Equipment: Equipment used to apply amended water or removal encapsulant shall be of a low pressure type to prevent disturbance of the asbestos prior to physical controlled removal. Asbestos encapsulant shall be spray-applied by an airless method.

10.1.5 Fire-Retardant Plastic: Plastic or polyethylene sheet used for general work area plasticizing shall be minimum 6-mil flame retardant plastic sheeting that meets the NFPA 701 Large-Scale test requirements.

10.1.6 Fire-Retardant Cross-Laminated High Density Polyethylene: Fire-retardant high density polyethylene sheeting shall meet the following requirements: NFPA 701 Large Scale Fire Retardance Requirements; ASTM D-882, 1-inch tensile - MD 21.5 lbf, TD 21.4 lbf; ASTM D-882, 1-inch elongation - MD 570 %, TD 435%; ASTM D-2582, PPT Tear - MD 13 lbf, TD 15 lbf; ASTM D-1709, Cold Crack minus 45 degrees F; ASTM D-2103, Thickness 6.3 mils. Provide PERMALON® X-100 FR as manufactured by Reef Industries, Inc., or approved equal.

10.1.7 Duct Tape: Duct tape shall be capable of sealing joints of adjacent sheets of plastic sheeting and shall be capable of adhering under both dry and wet conditions. Minimum physical properties: adhesion to steel - 45 oz./in width ASTM D-3330; tensile strength at break - 36 lbs./in. width ASTM D-3759; elongation at break - 10% ASTM D-3759.

10.1.8 Plywood: Plywood used for temporary partitions shall be minimum 3/8-inch C-D exterior grade.

10.1.9 Spray Adhesive: Spray Aerosol Adhesive shall be specially formulated to stick to sheet polyethylene. The product shall contain no methylene chloride or restricted chlorofluorocarbons (CFCs).

10.1.10 Other Materials: All other materials, such as lumber, plywood, tools, adhesive, nails, hardware, etc., required to perform the work described in this Section shall be provided. Materials and equipment shall be new or used, uncontaminated by asbestos, in serviceable condition, and appropriate for the intended purpose.

10.1.11 Communication Equipment: Devices suitable for inter-room communications, such as "walkie-talkies" or "radio band" communicators shall be provided.

10.1.12 Fire Extinguisher: Type "ABC" dry chemical extinguisher or a combination of several extinguishers of NFPA recommended types for the fire hazard exposures in each extinguisher location shall be provided. Minimum size of extinguisher shall be 4-A, and 40-B:C. A minimum of one extinguisher shall be provided for every 1,500 square feet of floor area, with a maximum travel distance to an extinguisher of 75-feet. At least one extinguisher shall be provided in each decontamination enclosure. The extinguisher shall be placed in the clean room.

10.1.13 Smoke Detectors:: Provide at a rate of one per 5,000 square feet, with a minimum of one smoke detector in the decontamination enclosure clean room, and one in the work area. Smoke detectors of the battery powered ionization type.

10.1.14 Temporary Partitions: Temporary partitions shall extend from the floor to the ceiling and form an airtight seal. They shall be built using wood or metal framing at 24-inch on-center faced with plywood sheathing on both sides, and shall be braced as necessary. Both sides of the temporary partition shall be covered with a double layer of 6-mil plastic sheeting, with joints staggered and sealed with tape. Edges of the temporary partition at the floor, walls, and ceiling shall be taped and caulked airtight.

10.1.15 Temporary Enclosures: Construct using wood, metal or plastic pipe framing with plastic sheeting mounted on the interior of the work area. Provide curtain doors for entrance into temporary enclosures.

10.1.16 Visual Barrier: Black plastic or similar opaque material to act as a visual screen. Barrier height shall be 6-feet. Mount visual barrier on metal fence posts. Provide warning signs on visual barrier.

10.1.17 Signs: Warning Signs shall be posted at the perimeter of the regulated area prior to abatement operations in accordance with OSHA Standard 29 CFR 1926.1101. Danger sign format and color shall conform to OSHA Standard 29 CFR 1926.200. The signs shall display the legend indicated below:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE
CLOTHING ARE REQUIRED IN THIS AREA

10.1.18 Disposal Bags: Plastic Disposal Bags shall be a minimum of six mils in thickness. Markings and labels on disposal bags and shipping containers shall bear danger labels, transportation packaging marking and labels, and generator identification information. Markings and labels shall be permanently affixed to all bags and shipping containers containing ACM, in accordance with OSHA Standard 29 CFR 1926.1101(k)(7), DOT Standard 49 CFR 172, and EPA Standard 40 CFR Part 61.150(a)(1)(v).

10.1.19 Danger label format and color shall conform to 29 CFR 1926.200. Danger labels shall display the following legend/information in accordance with OSHA 29 CFR 1926.1101(k)(7):

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

10.1.20 Generator identification information shall be affixed to each package. DOT label format and color shall conform to DOT Standard 49 CFR 172.304. Generator identification information labels shall display the following legend/information in accordance with EPA 40 CFR Part 61.150(a)(1)(v):

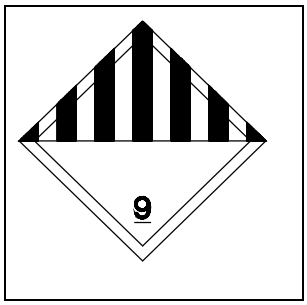
GENERATORS NAME _____
FACILITY ADDRESS _____

10.1.21 DOT Markings and Labels: Markings and Labels shall be permanently affixed to all bags and containers containing ACM, in accordance with DOT 49 CFR 172.304 and 172.407.

Markings shall display the following text:

RQ, ASBESTOS, NA 2212

Labels shall be diamond shape and shall be located near the Marking text. Labels shall consist of a diamond a minimum of 100 millimeters (mm) on each side with each side having a solid line inner boarder 5.0 to 6.3 mm from the edge. The label shall be white with seven black vertical stripes on the top half. Black stripes and white spaces shall be equally spaced. The lower half of the label shall be white with the class number "9" underlined and centered at the bottom. Refer to DOT 40 CFR 172.446 for label format.



10.1.22 Reuse of Containers: If impermeable containers used to transport bagged asbestos waste to the landfill are to be reused, the empty containers shall display the following label:

RESIDUE:
LAST CONTAINED ASBESTOS RQ

11 UTILITIES

11.1 GENERAL: Provide cutoffs and temporary utilities as necessary to perform the Work. Coordinate all utility hook-up and cutoffs with the Building Manager. Use qualified tradesmen for utility cutoffs and installation of temporary service. Work shall be performed in a competent manner by qualified and appropriately trained and licensed tradesmen.

11.2 ELECTRIC SERVICE:

11.2.1 Ground Fault Protection: All circuits used by the Contractor shall be equipped with ground fault circuit interrupters (GFI). The Contractor is responsible for connection to the panel and routing power to his work area.

11.2.2 Lighting: Temporary lighting within the work areas and decontamination enclosures shall be provided as needed. All temporary service shall be equipped with GFI.

11.3 WATER/SEWER HOOKUP:

11.3.1 Water Service: FSU will provide one water service hookup. FSU Building Maintenance will indicate the tap location. The Contractor shall be responsible for connection to the service and distribution of water to his decontamination enclosure system. A backflow preventer shall be used for all connections to water supply systems.

11.4 Wastewater: All water used by the Contractor during asbestos abatement activities shall be collected and passed through a water filtration system capable of filtering and retaining particles larger than 5.0 microns in size prior to being discharged into the sanitary sewer. FSU will indicate an acceptable location to access the sanitary sewer.

The Contractor shall be responsible for connection to the sanitary sewer, and for providing piping, pumps, water filtration systems, and other items necessary to collect, transport, filter, and dispose of the wastewater.

12 TEMPORARY PRESSURE DIFFERENTIAL SYSTEM

12.1 GENERAL: Negative pressure systems shall be installed and operated in accordance with "Specifications and Operating Procedures for the use of Negative Pressure Systems for Asbestos Abatement," Guidance for Controlling Asbestos-Containing Materials in Buildings, EPA Document 560/5-85/024 (June 1985).

12.2 EQUIPMENT:

12.2.1 Air Filtration Device (AFD): Provide AFDs for local exhaust ventilation and work area air filtration. AFDs shall be equipped with high efficiency particulate air (HEPA) filtration systems that comply with ANSI Z9.2. Provide units equipped with:

12.2.1.1 All AFD used for this project shall be inspected by the Contractor. New HEPA filter shall be installed for each unit prior to start of the project.

12.2.1.2 Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed.

12.2.1.3 Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter.

12.2.1.4 Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge.

12.2.1.5 Audible alarm if unit shuts down due to operation of safety systems.

12.2.1.6 Equipment provided shall carry approval of the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection. The motor, fan, fan housing, and cabinet are to be grounded.

12.2.2 Differential Air Pressure Recording Device: Provide a differential pressure meter equipped with a continuous strip recorder. The meter shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.02" of water. Differential Air Pressure Recorders shall carry a label indicating the last date of factory calibration.

12.2.3 HEPA Filters: AFD equipment shall have new unused HEPA and pre-filters installed prior to mobilization to project site.

12.3 NEGATIVE AIR PRESSURE REQUIREMENTS:

12.3.1 Pressure Differential Requirements: Provide a fully operational negative pressure/pressure differential system with any contained work area. The system shall be capable of maintaining a continuous pressure differential of -0.02 to -0.05 inches of water relative to any surrounding non-work area building space when measured across work area enclosures. Provide one air change every 15.0 minutes (4 air changes per hour) during removal of friable and non-friable ACM.

12.3.2 Testing of System: Test pressure differential system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the AFD(s) installed, start the unit(s) one at a time. Demonstrate operation and testing of pressure differential system to the Engineer during the Pre-Removal Inspection.

12.3.3 Operation of System: The following guidelines shall be used during operation of the negative pressure/pressure differential system:

12.3.3.1 AFD exhaust from the work area shall be sufficient to provide specified work area ventilation, and to maintain the required negative pressure (vacuum) in the work area with respect to the adjacent surrounding non-work areas.

12.3.3.2 Start AFDs prior to disturbance of any asbestos-containing material. After abatement work has begun, AFDs shall not be shut down until the work area is released to the Owner following completion of final clearance procedures.

12.3.3.3 Provisions shall be made to change filters without releasing captured asbestos fibers to the surroundings.

12.3.3.4 Continuously monitor and record the pressure differential between the work area and the building outside of the work area. Provide strip chart record that covers the previous 24-hour period. Mark record with work area name, location of chart recorder, date of recording, and start of time for the recording. Indicate on the chart record, for each day, time for starting and stopping abatement work, and type(s) of work in progress. Cut printout into segments by day and attach to 8 1/2" by 11" paper (see Paragraph "Submittals" this Section).

12.3.4 AFD Failure or Power Outage: On loss of negative pressure, failure of AFD equipment, or electric power outage, abatement shall stop immediately and shall

not resume until power is restored and AFDs are operating again. When power failure or loss of AFD equipment lasts or is expected to last longer than one hour, perform the following:

12.3.4.1 Seal make-up air inlets airtight

12.3.4.2 Seal the decontamination enclosure systems airtight after evacuation of workers and/or authorized visitors from the work area.

12.3.5 Dismantling the System: AFDs may be removed from the work area after Final Re-occupancy clearance has been granted. Decontaminate exterior of machine and seal intake to the machine with 6-mil polyethylene sheeting and tape to prevent environmental contamination from the filters. Plastic flexible ductwork shall be disposed as ACM.

13 DECONTAMINATION ENCLOSURE SYSTEM

13.1 GENERAL REQUIREMENTS:

13.1.1 On-Site Facilities: Provide facilities for decontamination of workers. The decontamination enclosure system shall be placed inside the work area as indicated in the drawing. The roof of the decontamination unit shall be capable of supporting a sufficient load so that ACM can be accessed and removed.

13.1.2 Facilities: Provide change rooms and shower facilities that comply with 29 CFR 1910.141(d). The decontamination area shall consist of an equipment room, shower area, and clean room in series. The decontamination enclosure system shall be of sufficient size to accommodate the Contractor's personnel.

13.2 PERSONNEL DECONTAMINATION ENCLOSURE

13.2.1 Structure: Construct a five-stage structure using metal or wood framing. Interior floors, walls and ceiling shall be lined with two layers of 6-mil flame retardant plastic sheeting. Provide the following: equipment room for removal of clothing; shower room for decontamination of workers, and; clean room (change room) with lockers for worker change of clothing.

13.2.1.1 Equipment room. The equipment room shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.

13.2.1.2 Shower area. Shower facilities provided shall comply with 29 CFR 1910.141(d)(3). The showers shall be adjacent both to the equipment room and the clean room. The Contractor shall ensure that workers perform proper decontamination.

13.2.1.3 Clean change room. The clean room shall be equipped with a locker or appropriate storage container for each employee's use.

13.3 ENTRY AND EXIT PROCEDURES

13.3.1 General: The Contractor shall ensure that workers enter and exit the regulated area through the decontamination enclosure system.

13.3.2 Work Area Entry:

a) All workers and authorized visitors shall enter the work area through the worker decontamination enclosure system.

b) All workers shall sign the entry log, located in the clean room, upon each entry and exit. The log shall be permanently bound and shall identify fully the facility, agents, contractor(s), the project, each work area, and respiratory protection employed.

c) In the clean room, remove and deposit street clothing within a locker provided for their use, and put on protective clothing and respiratory protection before leaving the clean room.

d) Before entering the regulated area, the employer shall ensure that employees pass through the equipment room.

13.3.3 Work Area Exit:

a) Before leaving the regulated area, remove all gross contamination and debris from protective clothing.

b) Remove protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers.

c) When exiting the work area workers shall shower and enter the clean room before changing into street clothes.

14 WORKER PROTECTION - ASBESTOS ABATEMENT

14.1 HEALTH AND SAFETY GENERAL REQUIREMENTS: The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods and for any damage which may result from Contractor's improper construction, maintenance, or operation, respectively. He shall erect and maintain at all times adequate safeguards for the protection of workmen and building occupants. The Contractor shall be responsible for monitoring his own construction safety work practices for compliance with the OSHA regulations, and shall provide appropriate personnel protective equipment and training for his workers.

14.1.1 Biological Hazards: The known biological hazard on site includes asbestos-containing material. The Contractor shall provide materials, equipment and training to his workers to ensure their protection from these and any other chemical/biological hazards that may be identified during the Work.

14.1.2 Physical Hazards: In addition to the common physical hazards normally present on construction sites, the known physical hazards specific to this project include: heat stress; contact with active equipment, noise; and trip/fall hazards. The Contractor shall provide safety equipment and training to his workers to ensure their protection from these and any other physical hazards that may be present during the Work.

14.1.3 Emergency Response: The Contractor shall establish an Emergency Response Team made up of members of his work force. The Contractor shall designate a Team Leader and organize workers who are trained to respond in the event of an accident or other emergency. Members of the Emergency Response Team shall be knowledgeable in evacuation procedures and would be the first to respond in the event of an emergency.

14.1.4 Workmen Protection: During the construction period, the Contractor shall provide and maintain safety equipment as required or necessary to properly complete the work. He shall provide and maintain such barricades, warning signs and devices, temporary lighting, and other safety measures necessary to properly protect workmen.

14.2 EXPERIENCE AND QUALIFICATION REQUIREMENTS:

14.2.1 Experience and Training: All phases of the work shall be executed by skilled craftsmen experienced in each respective trade. Improperly trained, untrained, or inexperienced personnel shall not be allowed in the work areas.

14.2.2 The Superintendent shall be thoroughly familiar with and experienced in asbestos removal and related work. The Site Superintendent shall have successfully completed training equivalent to the EPA Model Accreditation Plan asbestos contractor and supervision course (40 CFR Part 763, Subpart E, Appendix C) from a training provider approved by the State of Florida Department of Business and Professional Regulation. The Superintendent shall meet the requirements of a competent person set down in OSHA Standard 29 CFR 1926.1101(o).

14.2.3 All asbestos removal workers shall be knowledgeable, qualified, and trained in the removal, handling, and disposal of asbestos material and in subsequent cleaning of the affected environment. All asbestos abatement workers shall have successfully completed training equivalent to the EPA Model Accreditation Plan asbestos worker training course (40 CFR Part 763, Subpart E, Appendix C) from a training provider approved by the State of Florida Department of Business and Professional Regulation. The Superintendent shall meet the requirements of a competent person set down in OSHA Standard 29 CFR 1926.1101(o).

14.2.4 Medical Surveillance: The Contractor shall provide medical surveillance for all workers engaged in asbestos removal. Provide the medical examination in

accordance with OSHA Standards 29 CFR 1910.134(b) and 1926.1101. The Contractor shall ensure that all employee examination results are on file in his office, are available for review, and are maintained in accordance with OSHA Standard 29 CFR 1926.1101(n)(3).

14.3 RESPIRATORY PROTECTION REQUIREMENTS:

14.3.1 Respiratory Protection: The Contractor shall be solely responsible for providing adequate respiratory protection at all times for all individuals in the work area. Types of respirators used shall be approved by NIOSH for asbestos and in accordance with 29 CFR 1926.1101.

14.3.2 During abatement of SAF and overspray, minimum of PAPR with HEPA cartridge respirators shall be used as minimum respiratory protection.

14.3.3 Respirator Protection Program: Where the use of respirators is required, the Contractor shall develop a written standard operating procedure to govern selection and use of respirators. As a minimum the program shall address components as required by OSHA 29 CFR 1910.134. Program components shall include: written standard operating procedures; medical surveillance; training in selection and use of respirators; proper fitting and fit testing; procedures for inspection, cleaning, maintenance and storage; requirements for surveillance of work area conditions and worker exposures; and respirator program evaluation requirements.

14.3.4 Negative Exposure Assessment: The Contractor shall produce a negative exposure assessment for each asbestos removal task to be performed. The assessment may be developed using historical air monitoring data that meets the requirements of 29 CFR 1926.1101(f)(iii) produced within the last 12 months combined with daily personnel monitoring during the work, or by providing an initial exposure assessment and daily personnel monitoring during the work.

14.3.5 Personal Monitoring: The Owner's Testing Laboratory IH Technician will provide PCM analysis of the Contractor's OSHA compliance personal air monitoring samples. Sample analysis results will be provided to the Contractor for posting, within 24-hours of collection. The Contractor shall be responsible for record keeping requirements.

14.4 WORKER PROTECTIVE CLOTHING AND EQUIPMENT: Protective clothing and equipment shall conform to OSHA requirements. The Contractor shall be solely responsible for enforcing personnel protection requirements.

14.4.1 Protective Clothing: Workers shall be provided with sufficient sets of properly fitting, full-body coveralls and protective gloves, and boot-type foot covers. The Contractor shall provide the Owner and authorized representatives suitable properly fitting protective clothing, whenever they are required to enter the work area.

14.4.2 Equipment: Provide eye protection, ear protection, protective gloves, non-slip steel toe shoes, and hard hats as required for job conditions or by applicable safety regulations.

15 WORK AREA PREPARATION

15.1 GENERAL REQUIREMENTS. Perform asbestos abatement in accordance with procedures outlined 29 CFR 1926.1101 for Class I Work and as outlined here and in the drawing notes.

15.2 GENERAL PREPARATION:

15.2.1 Provide work area layout prior to general preparation of the work area for review and approval.

15.2.2 Remove non-asbestos contaminated furniture/fixtures/ductwork prior to work area preparations. Only remove items when there is no potential for ACM disturbance. The contractor should coordinate removal of items with asbestos project monitor onsite.

15.2.3 Establish a regulated area and restrict access to the work area. Provide warning signs around the perimeter of the regulated area mounted on the visual barrier, or similar approach to the work area.

15.2.4 Provide and install decontamination enclosure systems. Coordinate the location of the facility with the Engineer.

15.2.5 Coordinate and verify shut down, isolate, and lock out or tag heating, ventilating, and air conditioning (HVAC) systems, which serve or which pass through the work area. Install critical seals on HVAC registers; return grills and diffusers using two layers of six-mil plastic sheeting.

15.2.6 Pre-clean surfaces and install critical seal plastic sheeting on window and door openings along the perimeter walls of the work area.

15.2.7 Seal floor drains, sumps and other collection devices with plastic sheeting and plywood, as necessary, and provide a system to collect all water used by the Contractor. Collected water shall be passed through a water filtration system prior to being discharged into the sanitary sewer.

15.2.8 Ensure that the Contractor's communication equipment is in place, in operating condition, and in operation during the Work.

15.2.9 Separate by means of airtight barriers (temporary partitions) parts of the building that are not included in the work area(s) from parts of the building that will undergo asbestos abatement. Install temporary partitions in open

doorways, cased openings, and corridors that will not be used for passage during work.

15.2.10 Completely seal airtight and isolate the work area. All openings, including but not limited to doorways, windows, tunnels, ducts, grilles, and diffusers shall be covered with plastic sheeting and taped airtight. Smaller openings through which pipe conduit passes, cracks, and other small penetrations of the work area shall be sealed using foam sealant.

15.2.11 Maintain emergency and fire exits from the work areas or establish alternative exits satisfactory to the local fire officials. Mark with luminescent paint on work area plastic barriers an outline of exit door(s). Hang a razor knife on a string beside outline. Paint words "EMERGENCY EXIT" with luminescent paint inside the door outline. Modify emergency exit door as necessary so it is secure from outside the work area but permits exiting from the work area. Exits shall be checked daily against exterior blockage or impediments to exiting.

15.3 GROSS REMOVAL AREA PREPARATIONS: To prepare a contained work area for gross removal asbestos abatement perform the following preparations in conjunction with those outlined in the drawing notes and Paragraph "General Preparations" of this Section. Work area preparation and removal shall be performed in accordance with this specification and OSSH Class I removal requirements.

15.3.1 Work Area Precleaning Procedures: After establishing the decontamination enclosure systems, preclean and prepare the work area:

15.3.1.1 Movable and loose items not removed by the Owner from work areas shall be removed and discarded as non-asbestos waste.

15.3.1.2 The work areas shall be cleaned using HEPA vacuum equipment and/or wet cleaning methods, as appropriate, prior to being plasticized.

15.3.1.3 Plasticize the work area after precleaning using the following procedure:

a. Cover floor with one layer of plastic sheet, turning layer a minimum of 16 inches up wall, and sealing to the wall.

b. Cover walls with one layer of plastic sheet, lapping wall layer a minimum of 16 inches over floor layer, and sealing wall layer to floor layer.

c. Repeat procedure for second layer. All joints in plastic sheets shall be glued and taped in such a manner as to prohibit air passage. Joints on plastic layers shall be staggered to reduce the potential for water to penetrate.

d. Mechanically support sheet plastic at top of walls with plywood squares or tack strips. Support plastic sheeting at each end seam, each room corner, and at a maximum four (4) feet on-center.

e. Form sharp right angle bends in plastic sheeting at junction of floor and wall. Spray-glue and duct tape all seams in plastic sheeting covering floor. Install sheeting so that top layer can be removed independently of bottom layer.

f. Do not remove any ceiling tile as ceiling tiles are considered as asbestos contaminated.

15.3.1.4 Install and initiate operation of air filtration devices (see Specification Section 12 TEMPORARY PRESSURE DIFFERENTIAL SYSTEM).

15.4 **FLOORING REMOVAL AREA PREPARATIONS:** To prepare a contained work area for removal of asbestos-containing floor tile and mastic adhesive, perform the following preparations in conjunction with those outlined in Subparagraph "General Preparations" of this Section. This requirements are in the area where only flooring material will be removed, when other ACM to be removed is present in the work area, gross removal work area preparation requirements will apply.

15.4.1 Flooring material removal should be initiated after removal of SAF, TSI and wall demolition.

15.4.2 Work area for flooring removal will be same as gross removal area.

15.5 PRE-REMOVAL INSPECTION: Prior to removal of any ACM, the Contractor shall notify the Engineer and request a pre-removal inspection. Posting of warning signs, construction of temporary partitions, plasticizing of work area, building of personnel and equipment decontamination enclosure systems, and all other preparatory steps shall have been taken prior to notification of the Engineer. The Contractor shall not begin asbestos removal until the Engineer approves the work area preparations.

15.6 MAINTENANCE OF CONTAINED WORK AREA AND DECONTAMINATION ENCLOSURE SYSTEMS:

15.6.1 Inspection of Barriers: Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon their discovery. Visually inspect enclosures at the beginning and end of each work period. Use smoke methods to test effectiveness of barriers.

15.6.2 Repair of Damaged Polyethylene Sheeting: Remove and replace plastic sheeting which has been damaged by removal operations or where the seal has failed allowing water to seep between layers. Remove affected sheeting and

wipe down entire area. Install new sheet plastic only when area is completely dry.

15.6.3 Thoroughly clean the decontamination enclosure systems at the end of each 8-hour work shift, and more frequently if required.

16 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

16.1 GENERAL: The Contractor shall be responsible for the proper removal of ACM from the work area using standard abatement industry removal techniques. Work will be observed by the IH Technician. Approval of the Contractor's abatement techniques is required by the IH Technician to allow for the continuance of work.

16.1.1 ACM shall be wetted with amended water or removal encapsulant prior to being disturbed. Keep ACM wet during removal and disposal of these materials. Material packed in disposal containers shall be in a wet condition.

16.2 SPRAY APPLIED FIREPROOFING (SAF) AND THERMAL SYSTEM INSULATION: The work area shall be prepared as described in Specification Paragraph "Gross Removal Area Preparations". Use methods and equipment that will keep the fiber count during removal operations to less than 0.1 fiber/cc of air when tested by NIOSH Method 7400.

16.2.1 Prepare the area as described in Paragraph "Gross Removal Area Preparations" Specification Section. Establish negative pressure work area.

16.2.2 Remove ceiling tile along south wall of the room to construct an isolation barrier. Seal all wall cavity or opening in the walls using two layers of 6-mil reinforced plastic sheeting. Remove selected SAF from the ceiling to fasten the isolation barrier to the ceiling. Construct an isolation barrier using two layers of 6-mil reinforced plastic sheeting and framing as necessary.

16.2.3 Remove ceiling tiles using wet removal method.

16.2.4 Remove light fixtures, thoroughly clean and take it out from the work area.

16.2.5 Spray asbestos materials with a fine mist of amended water or removal encapsulant, saturating materials to substrate. Spray the asbestos material repeatedly during work process to maintain a wet condition and to minimize asbestos fiber dispersion.

16.2.6 Remove all SAF including overspray from all surfaces.

16.2.7 Remove the saturated asbestos material in small sections. Remove insulation materials carefully and do not permit them to fall to the floor. Pack the material in sealable plastic bags as it is removed. Material shall not be allowed to dry out. As it is removed, pack the material in sealable plastic bags. Asbestos-

contaminated materials that are likely to puncture plastic disposal bags shall be placed in hard-wall shipping containers.

16.2.8 After completion of SAF and TSI removal, proceed with removal of flooring material as outlined in paragraph 16.3.

16.3 FLOORING MATERIAL AND MASTIC: The work area shall be prepared as described in Specification Paragraph "Flooring Material Removal Area Preparations". Use methods and equipment that will keep the fiber count during removal operations to less than 0.1 fiber/cc of air when tested by NIOSH Method 7400.

16.3.1 Mist floors covered with asbestos-containing tile with amended water. Wet the material sufficiently to reduce the release of fibers if the tiles are broken upon removal. Continually wet the material during the removal process to minimize fiber dispersion.

16.3.2 Completely remove floor tile and adhesive backing using appropriate tools and materials. As material is removed, wrap it in two layers of plastic and place it in labeled containers for transport.

16.3.3 Use mechanical stripping/etching equipment or physical methods for flooring mastic removal from concrete subfloors. Mastic solvent removers are not permitted for use.

16.3.4 No bulk mastic residue shall remain on the floor surface following removal and cleaning. It is not necessary to remove asphaltic stain from pores of concrete.

16.3.5 On completion of floor mastic removal the floor shall be smooth, free from ridges, and suitable to receive replacement flooring.

16.4 STOP WORK ORDER:

16.4.1 Fiber Concentration: The Owner will stop the work should the fiber count in the regulated area or adjacent non-work areas exceed 0.01 f/cc of air, or the background count (the greater of these two values will be used as the reference). Work shall not resume until the condition(s) causing the increase are corrected by the Contractor and affected areas have been cleaned as directed by Owner.

17 WORK AREA CLEARANCE PROCEDURES

17.1 CLEARANCE PROCEDURE: Cleaning and clearance for work areas shall be conducted in accordance with the three-step procedure described below.

17.1.1 Step 1. Preliminary Cleanup:

17.1.1.1 Remove any visible accumulation of asbestos material and debris. All sealed drums, plastic bags, and equipment used in the work area shall be removed from the work area

17.1.1.2 The Engineer will perform a visual inspection on receipt of a written request for inspection from the Contractor. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified.

17.1.2 Step 2. Lockdown:

17.1.2.1 All surfaces from which ACM was removed, shall receive lockdown encapsulant. Encapsulate all surfaces of the chase including ducts.

17.1.2.2 When the encapsulant is dry, the layer of plastic sheeting shall be wet cleaned and/or HEPA vacuumed again prior to removal.

17.1.3 Step 3. Final Re-occupancy Clearance:

17.1.3.1 A final inspection for re-occupancy will be performed by the Engineer on receipt of a written request for inspection from the Contractor. Evidence of dust, dirt, or debris identified during the inspection will necessitate further cleaning as heretofore specified.

17.1.3.2 PCM and TEM Clearance: When the work area passes the Engineer's re-occupancy inspection, and the work area is completely dry, the IH Technician shall test for re-occupancy using aggressive sampling techniques. Re-occupancy clearance air samples collected will be analyzed by PCM using NIOSH Method 7400 and by TEM using EPA AHERA TEM analysis procedures. Re-occupancy will be approved by the Engineer if the specified fiber count in the work area is achieved, as reported by the Testing Laboratory. Failure to achieve this level will necessitate further cleaning as heretofore specified. PCM fiber count shall be $\leq$0.01 f/cc for EACH sample, using NIOSH Method 7400 and TEM fiber count shall be equivalent to <0.01 s/cc for EACH sample, using EPA Level II TEM analysis procedures. For the decontamination area floor tile removal, the area shall be cleared with PCM air samples.

17.1.3.3 When the work area passes the re-occupancy test, disconnect AFDs and seal the intake to the machine airtight with 6-mil plastic sheeting and tape. Remove all controls and seals established.

17.2 OTHER INFORMATION: Extra time required to clean work areas in order to achieve clearance criteria shall not be considered grounds for an extension of time for contract completion.

18 LOAD-OUT AND DISPOSAL OF ACM

18.1 WASTE CLASSIFICATION

18.1.1 Regulated ACM: All broken VAT and resultant debris shall be considered as regulated asbestos-containing material (RACM). RACM shall be handled, packaged, transported, and disposed in accordance with OSHA Standard 29 CFR 1926.1101, DOT 49 CFR 171,172 and 173, and EPA Standard 40 CFR Part 61.

18.2 RACM WASTE PACKAGING: Packaging of RACM shall conform to OSHA Standard 29 CFR 1926.1101, DOT 49 CFR 171,172 and 173, and EPA Standard 40 CFR Part 61. RACM waste shall be placed in a wet condition into properly labeled disposal bags or containers. Waste materials shall be double-bagged or wrapped in two layers of 6-mil plastic sheeting before load-out from the work area. The waste material shall be stored in lockable leak tight container.

18.3 TRANSPORTATION AND DISPOSAL OF ASBESTOS WASTE:

18.3.1 General: Sealed and labeled disposal bags shall be used to transport RACM waste to the landfill. Procedures for hauling and disposal shall comply with 40 CFR Part 61, 49 CFR Part 171 and 172, and other applicable state, regional, and local government regulations.

18.3.2 Manifest and Waste Receipt: A properly completed "Waste Shipment Record" form shall accompany asbestos waste transported to a disposal site. Refer to 40 CFR Part 61 for example format of the form.

18.3.3 Movement of RACM Outside Work Area: Provide pedestrian barricades and post with visible Danger Signs during activities involving movement of containerized asbestos waste from the work area, or when loading or unloading containerized asbestos waste. Place signed barricade in a manner that will sufficiently block passage of a pedestrian into a waste handling area. Barricade Danger Sign legend, text size, style and arrangement shall conform to the requirements of EPA Standard 40 CFR Part 61.149 (d)(1).

18.3.4 Landfill Disposal: Only sealed disposal containers are permitted to be deposited in landfill. Workers shall place asbestos waste in the landfill. Throwing or dumping of containers shall not be allowed. Workers unloading and handling the sealed bags/drums at the disposal site shall wear appropriate personnel protective equipment including respirators and protective clothing.

APPENDIX

Certificate of Worker's Release A1

Respiratory Protection Justification A2

Drawings

Drawing Notes 11 pages

Drawings 18 pages

AA-1 Title page
AA-2 Drawing index and General Notes
AA-3 Asbestos Abatement – Basement SAF
AA-4 Asbestos Abatement – Basement Flooring
AA-5 Asbestos Abatement – Basement TSI
AA-6 Asbestos Abatement – First Floor SAF
AA-7 Asbestos Abatement – First Floor Flooring
AA-8 Asbestos Abatement – First Floor TSI
AA-9 Asbestos Abatement – Second Floor SAF
AA-10 Asbestos Abatement – Second Floor Flooring
AA-11 Asbestos Abatement – Second Floor TSI
AA-12 Asbestos Abatement – Third Floor SAF
AA-13 Asbestos Abatement – Third Floor Flooring
AA-14 Asbestos Abatement – Third Floor TSI
AA-15 Asbestos Abatement – Fourth Floor SAF
AA-16 Asbestos Abatement – Fourth Floor Flooring
AA-17 Asbestos Abatement – Fourth Floor TSI
AA-18 Asbestos Abatement – Fifth Floor SAF and Flooring

Asbestos Survey Update Report – Kellogg Building – 22 March 2024

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT
ASBESTOS ABATEMENT WORKERS

PROJECT NAME/CONTRACT NUMBER: _____
NAME OF COMPANY _____
NAME OF EMPLOYEE _____ SSN:_____

I ACKNOWLEDGE AND UNDERSTAND THAT WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAVE BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. I UNDERSTAND THAT IF I SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE OF DEVELOPING LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract for the above project requires that: you be provided with and complete formal and project specific training, you be supplied with proper personal protective equipment and applicable training in its use, and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks if you wear a respirator or your exposure to airborne asbestos fibers is greater that the OSHA permissible exposure limit (PEL). These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you.

FILL IN BELOW THOSE ITEMS THAT ARE APPLICABLE TO THE EMPLOYEE. NOTE: EMPLOYER WILL BE REQUIRED TO PROVIDE VERIFICATION OF TRAINING.

INITIAL TRAINING: I have completed a asbestos abatement training course for Workers; Contractor/Supervisor (circle one) that meets EPA and the State of Florida's requirements.
Date Completed _____

REFRESHER TRAINING: I have completed annual refresher on the above asbestos training courses.
Date Completed _____

MEDICAL EXAMINATION: I have had a medical examination within the last twelve months which was paid for by my employer. I was personally provided a copy and informed of the results of that examination. Check one below:

A physician determined (there were __) (there were no __) limitations to performing asbestos related work. Date medical exam was performed _____

Employee
Signature _____ date _____

Printed Name _____

Contractor's Competent Person or Industrial Hygienist
Signature _____ date _____

Printed Name _____

RESPIRATORY PROTECTION JUSTIFICATION

Project Name _____

Location _____

Date of Submittal _____

Date(s) Historic Monitoring Data Was Collected _____

Based upon airborne asbestos fiber counts encountered on previous projects of a similar type under work place conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations, the following level of respiratory protection is proposed for the indicated operations to maintain an airborne fiber concentration below 0.01 fibers per cubic centimeter (f/cc) exposure limit inside the respirator facepiece of the abatement worker.

Operation	Anticipated F/CC	Respiratory Protection	Protection Factor	F/CC in Mask
Work area preparation for gross removal area				
Gross removal of SAF material		PAPR		
Cleanup of ACM dust and debris				
Disposal of waste material at landfill				
Other (describe)				

The Contractor certifies that to the best of his knowledge and belief the above represent a true and accurate representation of airborne fiber concentrations expected for the operations indicated, and are based upon airborne fiber data from projects with similar materials and operations performed within the past one year period. If requested by the Owner, the Contractor shall provide backup documentation for verification of the above data.

CHECK ONE:

_____ Data will serve as Negative Exposure Assessment

_____ Data will serve as historic data only

Contractor _____

Signature _____ Date _____

Drawing Notes
Asbestos Abatement – Kellogg Building
Florida State University, Tallahassee Florida

DRAWING INDEX

AA-1 Title page
AA-2 Drawing index and General Notes
AA-3 Asbestos Abatement – Basement SAF
AA-4 Asbestos Abatement – Basement Flooring
AA-5 Asbestos Abatement – Basement TSI
AA-6 Asbestos Abatement – First Floor SAF
AA-7 Asbestos Abatement – First Floor Flooring
AA-8 Asbestos Abatement – First Floor TSI
AA-9 Asbestos Abatement – Second Floor SAF
AA-10 Asbestos Abatement – Second Floor Flooring
AA-11 Asbestos Abatement – Second Floor TSI
AA-12 Asbestos Abatement – Third Floor SAF
AA-13 Asbestos Abatement – Third Floor Flooring
AA-14 Asbestos Abatement – Third Floor TSI
AA-15 Asbestos Abatement – Fourth Floor SAF
AA-16 Asbestos Abatement – Fourth Floor Flooring
AA-17 Asbestos Abatement – Fourth Floor TSI
AA-18 Asbestos Abatement – Fifth Floor SAF and Flooring

INTENT OF THE PROJECT

The intent of this project is to remove all asbestos containing and asbestos contaminated materials; other non-asbestos material from the Kellogg Building, Florida State University (FSU). The Kellogg building contains friable and non-friable asbestos containing materials (ACM). The intent of this project is to remove (i) all ACM and asbestos-contaminated materials in preparation for renovation.

SCOPE OF WORK

The scope of work for this project is

- The scope of work includes asbestos abatement of all asbestos containing and asbestos contaminated material; and removal/demolition of all other material from all floors of the Kellogg building as indicated in the drawings and specifications. All items located above ceiling including ceiling; interior of the walls is considered as asbestos containing and asbestos contaminated material where spray applied fireproofing (SAF) material is present. The interior of the walls which are scheduled for demolition in the area where SAF was abated previously are considered as asbestos containing and asbestos contaminated material. Any structure located below the ceiling which is not ACM can be removed and disposed of as construction demolition waste material after approval of the Owner's representative/Asbestos consultant.
- The Contractor shall review demolition scope and drawings (Architecture, Mechanical, Plumbing Etc.). When there is a question about scope of work consult with the CM for clarification.
- Removal of all asbestos containing material, asbestos contaminated material from the Kellogg building. This includes asbestos containing SAF and overspray on structural steel;

SAF over spray on ceiling/roof deck, SAF contaminated walls, ceiling, ducts, light fixtures etc.

- Removal of Asbestos-containing or asbestos-contaminated Piping insulation, debris, HVAC ducts, reheat and VAV units, etc. above suspended ceiling and chase.
- Removal of Asbestos-containing or asbestos-contaminated HVAC supply and return duct and other HVAC components.
- Removal of Asbestos containing and asbestos contaminated ceiling (plaster ceiling and ceiling tiles, light fixtures, HVAC registers, etc.)
- Removal of Asbestos containing (ACM) flooring material and mastic
- Removal of Asbestos containing material (ACM) such as sink coating, lab counter tops etc.
- Removal of all interior walls scheduled for demolition (as specified in drawing) as asbestos contaminated material as ACM.
- All materials inside the work area including ACM, asbestos contaminated materials as well as non-asbestos materials shall be removed by the abatement contractor. The abatement contractor shall coordinate with the CM regarding any materials to remain.

All work shall be performed in strict compliance with project specifications and drawings. Approximate quantities of ACM are indicated below.

PHASES AND WORK AREAS:

The work will require multiple phases and work areas. Asbestos abatement and demolition will be performed floor by floor. Multiple work areas may be required for each floor. Abatement should begin from top floor and then floor below.

PROJECT SCHEDULE

Project schedule shall be determined by the Owner / CM. Multiple mobilizations will be required throughout the project.

APPROXIMATE QUANTITIES

- Approximate ACM quantities are summarized in Table 2 of the Asbestos Survey Update report which is included with the specifications.
- The contractor shall verify ACM and Non-ACM quantities for his scope of work prior to the bid. Any discovered discrepancies should be brought to the attention of the CM prior to the bid.
- The contractor shall review as-built drawings, AE demolition drawings and visit the site to estimate the quantity of ACM, asbestos contaminated material and non-ACM to be removed and disposed of.
- Approximate quantities of ACM are summarized for asbestos abatement.
- Flooring material quantities are indicated as single layer. Many locations may contain multiple layers of flooring materials. No change order shall be considered based upon multiple layers of flooring material. In some locations floor tile may be present underneath the wall or fixed furniture, the asbestos contractor is responsible for removal of these floor tiles as ACM. In many areas the

flooring material is located under carpet. Flooring materials include floor tile, adhesive mastic, sheet flooring, baseboard and baseboard mastic, carpet etc.

- The approximate quantity of spray applied fireproofing (SAF) material is based on the surface area of the ceiling based on the drawing. The actual quantity of SAF may be significantly higher due to overspray. Overspray of SAF on other surfaces are not quantified.
- All piping insulation material in the areas with SAF are considered as ACM or asbestos contaminated. Piping insulation quantity includes only ACM, it does not include asbestos contaminated piping insulation.
- All interior walls which are scheduled for demolition are considered as asbestos contaminated material.
- Ceiling material in the area with SAF is considered as asbestos contaminated material.
- Approximate quantities of ACM and asbestos contaminated material are based on the record drawings and may not include all of the items in the abatement area.
- All lights and other ceiling mounted fixtures in the area with ACM SAF are considered as asbestos contaminated.
- Approximate ACM quantities do not include quantity of asbestos contaminated material.
- Approximate ACM quantities do not include walls to be demolished as ACM.
- Approximate quantity does not include asbestos contaminated material. The contractor is responsible for estimating quantities of these and other material to be abated and demolished. Asbestos survey update report is included with the specifications.

GENERAL NOTES - HAZARDOUS MATERIALS

1. Fluorescent light fixture ballasts are known to contain oil with PCB. Light fixtures demolished during the work shall be checked for the presence of PCB ballasts. All ballasts that are not clearly labeled “NO-PCB” shall be considered as containing PCB.

2. Fluorescent light fixture light bulbs contain mercury and mercury vapors. Bulbs are to be collected without breakage for recycling.

3. The contractor shall be responsible for contracting with an appropriate recycling/disposal company(s), and is responsible for costs related to handling, transportation, recycling/disposal, and recordkeeping for these special wastes. Furnish a copy of waste manifest prior to shipment of waste or recyclable materials to the Owner’s on-site representative. Also furnish the Owner with copies of waste manifests and receipts.

GENERAL NOTES

1. This drawing set was compiled from record drawings and site visits for the purpose of indicating the general location of the work to be performed. All dimensions, material locations, and quantities indicated on the drawings and in drawing notes are approximate.
2. The asbestos abatement contractor shall submit work area layouts, work procedures for abatement and demolition for review and approval.
3. When removal locations, dimensions, quantities, or procedures are in question, consult contract documents, architectural plans, Owner's on-site representative, the CM, and Architect for direction.
4. On-site asbestos abatement contractor competent person shall inspect the floor below area everyday as necessary to identify any leak through floor penetrations.
5. The CM and Asbestos contractor shall review and comply with "OSHA" 29 CFR 1926.1101, subpart (d) for "multi-employer worksites".
6. Fall protection shall be required for work during this project. The contractor shall review and comply with "OSHA" fall protection requirements as outlined in 29 CFR 1926 subpart M, 1926.500 through 1926.503 and all applicable appendices.
7. Scaffolding shall be required for this project. The contractor shall review and comply with "OSHA' scaffolding requirements as outlined in 29 CFR Subpart L and all applicable appendices.
8. The CM and Asbestos Contractor shall review and comply with "OSHA" 29 CFR, Subpart K, Electrical, 1926.400 and by Inference "NFPA 70E" - Standard for Electrical Safety in the Workplace. Further the CM and Asbestos Contractor shall review and comply with "OSHA" 29 CFR, Subpart K, 1926.417 - Lockout and Tagging of Circuits and "OSHA" 29 CFR, Subpart F, 1915.89 - Control of Hazardous Energy.
9. The use of only elevator in the building will be at discretion of the Owner. If use of elevator is allowed, the contractor will be allowed use of approved elevator(s) to move equipment to and from the work area. The elevator shall be protected by installing a cardboard floor and walls of sufficient thickness to prevent scratching of the walls. The door to the elevator shall remain closed except when actively loading or unloading. Elevator(s) shall not remain parked for the contractor's convenience. The use of the elevator should be coordinated with the CM.
10. Provide a list and location of Non-ACM contaminated material which will be removed prior to asbestos abatement, for review and approval. Non-ACM flooring material can be removed prior to asbestos abatement as non-ACM.
11. Parking areas and staging area will be designated by the CM at the pre-construction meeting. Use of other areas for parking, storage, and staging is prohibited.
12. Load-out of ACM waste material shall be performed shall be coordinated with the owner's on-site representative. All bagged asbestos waste materials shall be packed in a wheeled hospital cart (or similar) lined with two (2) layers of plastic sheeting, for transport from the work area to the ground floor loading dock. The ACM waste material shall be placed in closed lockable dumpster for storage and disposal.
13. Coordinate temporary utility hookups and isolation through the CM and the Owner.
14. Shut-down and lock-out / tag out the three HVAC systems as necessary for the work area.
15. Install HVAC blanks in the ducts servicing the work area from AHU located on the other floor.

16. Coordinate Cover all floor drains, airtight using plastic sheeting.
17. Engage AFDs and bring the work area vacuum down to -0.02 in w/c.
18. Connection of temporary power and cutoff of service with the Owner. Verify that all power in the work area has been disconnected. Temporary power shall be installed by a licensed electrician. In instances where wiring inside conduit crossing a work area cannot be de-energized, identify and label energized conduit, "DANGER – ENERGIZED CONDUITS. ELECTROCUTION AND ARC FLASH HAZARD. Also wrap water-tight in two layers of plastic sheeting. Use labeling and candy-striped red duct tape to wrap conduits.
19. Exhaust Air Filtration Device (AFD) to outside the building.
20. In some instances, removal of carpeting is required to access flooring material. Removal of carpeting to access flooring material is considered part of the work. No change order shall be considered based solely upon removal of carpeting.
21. All plastic sheeting and lumber installed within the building shall be fire retardant in accordance with specifications.

WORK AREA NOTES –ASBESTOS ABATEMENT

Fifth Floor

1. Coordinate shutdown of the AHU located on the Fifth Floor.
2. Protect AHU, ducts and other equipment using 2 layers of 6-mil plastic sheeting.
3. Decontamination unit on the floor adjacent to the stair entrance.
4. Plasticize the walls.
5. Establish negative pressure work area.
6. Begin wet removal after pre-removal inspection.

Fourth Floor

1. ACM SAF was abated in the west half of the floor as indicated in the drawing.
2. SAF is present on ceiling deck and also present on internal surface of the plaster/drywall wall/ceiling, wall cavities, above acoustic ceiling tiles where SAF was not abated previously, inside steel column encasements.
3. All interior walls scheduled for demolition are considered as asbestos-contaminated with SAF and should be removed as ACM.
4. In SAF abated area, asbestos containing SAF is also present in the interior surfaces of the plaster/drywall walls, inside steel column encasement. Asbestos is also present in the area where HVAC ducts are flushed with the ceiling beams and columns. At some locations there are signs indicting Asbestos containing SAF at duct locations.
5. Ceiling (plaster/drywall/acoustic ceiling tiles) in the area with SAF is considered as asbestos-contaminated with SAF and should be removed as ACM.
6. All structures/fixtures/piping, ductwork etc. located above the ceiling are considered as asbestos-contaminated with SAF and should be removed as ACM.
7. ACM flooring material may be present underneath the walls which are scheduled for removal.
8. Provide the list of Non-asbestos contaminated building materials to be removed as Non-ACM prior to asbestos abatement, for review and approval. This may include non-ACM flooring material, ceiling and above ceiling non-ACM items in the area where SAF was abated previously,

fixed furniture and other items located below ceiling, etc. Removal of these items can be done prior to start of ACM work area preparation and removal.

9. Provide work area layouts with extent of work area, decontamination unit location, AFD exhaust locations etc. for review and approval.
10. AHU servicing this floor is located on the other floors. Coordinate shutdown of the AHU servicing this floor. Install HVAC blanks in the ducts servicing the work area.
11. Plasticize critical openings, the floors/walls as necessary.
12. Establish a regulated area and install Decontamination Unit. Personnel and Equipment Decontamination Units shall be required. The contractor shall submit Decontamination unit layouts for review and approval. Five stage decontamination with shower with hot water is required for personnel decontamination unit.
13. Establish negative pressure work area.
14. Begin wet removal after pre-removal inspection.
15. Begin with removal of SAF and then other ACM (walls/flooring etc.). Use of PAPR will be required during removal of SAF.
16. Remove all SAF from beams, columns and any overspray on adjacent structures. SAF may be discovered in areas impossible to access. In these areas the space adjacent to the material shall be cleaned to the point of No Residue and the material sealed in place, airtight behind a fire rated structure.
17. Remove old ACM SAF in the area where SAF was previously abated. Old ACM SAF may be present at duct/pipe penetrations, at walls etc.
18. Remove all pipe insulation and dispose of as ACM. All pipe risers from the floor below should be capped at floor level.
19. Remove all flooring including mastic and dispose of as ACM
20. Wall Demolition as ACM. Demolish the walls which are scheduled for demolition and dispose of the wall components and debris as ACM. Review the extent of wall demolition as indicated in the AE demolition drawings.
21. After completion of removal, thoroughly clean the work area.
22. Upon successful removal and cleaning, request a pre-lock down inspection from the owner's representative.
23. Upon successful pre-lock down inspection, spray the area with lock down encapsulant and request post-abatement air testing.

Third Floor

1. ACM SAF was abated in the west half of the floor as indicated in the drawing.
2. SAF is present on ceiling deck and also present on internal surface of the plaster/drywall wall/ceiling, wall cavities, above acoustic ceiling tiles where SAF was not abated previously, inside steel column encasements.
3. All interior walls scheduled for demolition are considered as asbestos-contaminated with SAF and should be removed as ACM.
4. In SAF abated area, asbestos containing SAF is also present in the interior surfaces of the plaster/drywall walls, inside steel column encasement. Asbestos is also present in the area where HVAC ducts are flushed with the ceiling beams and columns. At some locations there are signs indicting Asbestos containing SAF at duct locations.
5. Ceiling (plaster/drywall/acoustic ceiling tiles) in the area with SAF is considered as asbestos-contaminated with SAF and should be removed as ACM.

6. All structures/fixtures/piping, ductwork etc. located above the ceiling are considered as asbestos-contaminated with SAF and should be removed as ACM.
7. ACM flooring material may be present underneath the walls which are scheduled for removal.
8. Provide the list of Non-asbestos contaminated building materials to be removed as Non-ACM prior to asbestos abatement, for review and approval. This may include non-ACM flooring material, ceiling and above ceiling non-ACM items in the area where SAF was abated previously, fixed furniture and other items located below ceiling, etc. Removal of these items can be done prior to start of ACM work area preparation and removal.
9. Provide work area layouts with extent of work area, decontamination unit location, AFD exhaust locations etc. for review and approval.
10. AHU servicing this floor is located on the other floors. Coordinate shutdown of the AHU servicing this floor. Install HVAC blanks in the ducts servicing the work area.
11. Plasticize critical openings, the floors/walls as necessary.
12. Establish a regulated area and install Decontamination Unit. Personnel and Equipment Decontamination Units shall be required. The contractor shall submit Decontamination unit layouts for review and approval. Five stage decontamination with shower with hot water is required for personnel decontamination unit.
13. Establish negative pressure work area.
14. Begin wet removal after pre-removal inspection.
15. Begin with removal of SAF and then other ACM (walls/flooring etc.). Use of PAPR will be required during removal of SAF.
16. Remove all SAF from beams, columns and any overspray on adjacent structures. SAF may be discovered in areas impossible to access. In these areas the space adjacent to the material shall be cleaned to the point of No Residue and the material sealed in place, airtight behind a fire rated structure.
17. Remove old ACM SAF in the area where SAF was previously abated. Old ACM SAF may be present at duct/pipe penetrations, at walls etc.
18. Remove all pipe insulation and dispose of as ACM. All pipe risers from the floor below should be capped at floor level.
19. Remove all flooring including mastic and dispose of as ACM
20. Wall Demolition as ACM. Demolish the walls which are scheduled for demolition and dispose of the wall components and debris as ACM. Review the extent of wall demolition as indicated in the AE demolition drawings.
21. After completion of removal, thoroughly clean the work area.
22. Upon successful removal and cleaning, request a pre-lock down inspection from the owner's representative.
23. Upon successful pre-lock down inspection, spray the area with lock down encapsulant and request post-abatement air testing.

Second Floor

1. ACM SAF was not abated on the second floor.
2. SAF is present on ceiling deck and also present on internal surface of the plaster/drywall wall/ceiling, wall cavities, above acoustic ceiling tiles where SAF was not abated previously, inside steel column encasements.
3. All interior walls scheduled for demolition are considered as asbestos-contaminated with SAF

and should be removed as ACM.

4. Ceiling (plaster/drywall/acoustic ceiling tiles) in the area with SAF is considered as asbestos-contaminated with SAF and should be removed as ACM.
5. All structures/fixtures/piping, ductwork etc. located above the ceiling are considered as asbestos-contaminated with SAF and should be removed as ACM.
6. ACM flooring material may be present underneath the walls which are scheduled for removal.
7. Provide the list of Non-asbestos contaminated building materials to be removed as Non-ACM prior to asbestos abatement, for review and approval. This may include non-ACM flooring material, ceiling and above ceiling non-ACM items in the area where SAF was abated previously, fixed furniture and other items located below ceiling, etc. Removal of these items can be done prior to start of ACM work area preparation and removal.
8. Provide work area layouts with extent of work area, decontamination unit location, AFD exhaust locations etc. for review and approval.
9. AHU servicing this floor is located on the other floors. Coordinate shutdown of the AHU servicing this floor. Install HVAC blanks in the ducts servicing the work area.
10. Plasticize critical openings, the floors/walls as necessary.
11. Establish a regulated area and install Decontamination Unit. Personnel and Equipment Decontamination Units shall be required. The contractor shall submit Decontamination unit layouts for review and approval. Five stage decontamination with shower with hot water is required for personnel decontamination unit.
12. Establish negative pressure work area.
13. Begin wet removal after pre-removal inspection.
14. Begin with removal of SAF and then other ACM (walls/flooring etc.). Use of PAPR will be required during removal of SAF.
15. Remove all SAF from beams, columns and any overspray on adjacent structures. SAF may be discovered in areas impossible to access. In these areas the space adjacent to the material shall be cleaned to the point of No Residue and the material sealed in place, airtight behind a fire rated structure.
16. Remove old ACM SAF in the area where SAF was previously abated. Old ACM SAF may be present at duct/pipe penetrations, at walls etc.
17. Remove all pipe insulation and dispose of as ACM. All pipe risers from the floor below should be capped at floor level.
18. Remove all flooring including mastic and dispose of as ACM
19. Wall Demolition as ACM. Demolish the walls which are scheduled for demolition and dispose of the wall components and debris as ACM. Review the extent of wall demolition as indicated in the AE demolition drawings.
20. After completion of removal, thoroughly clean the work area.
21. Upon successful removal and cleaning, request a pre-lock down inspection from the owner's representative.
22. Upon successful pre-lock down inspection, spray the area with lock down encapsulant and request post-abatement air testing.

First Floor

1. ACM SAF was abated in the first floor as indicated in the drawing. Duct chase was not abated.
2. All interior walls scheduled for demolition are considered as asbestos-contaminated with SAF

and should be removed as ACM.

3. In SAF abated area, asbestos containing SAF is also present in the interior surfaces of the plaster/drywall walls, inside steel column encasement. Asbestos is also present in the area where HVAC ducts are flushed with the ceiling beams and columns. At some locations there are signs indicting Asbestos containing SAF at duct locations.
4. Ceiling (plaster/drywall/acoustic ceiling tiles) in the area with SAF is considered as asbestos-contaminated with SAF and should be removed as ACM.
5. ACM flooring material may be present underneath the walls which are scheduled for removal.
6. Provide the list of Non-asbestos contaminated building materials to be removed as Non-ACM prior to asbestos abatement, for review and approval. This may include non-ACM flooring material, ceiling and above ceiling non-ACM items in the area where SAF was abated previously, fixed furniture and other items located below ceiling, etc. Removal of these items can be done prior to start of ACM work area preparation and removal.
7. Provide work area layouts with extent of work area, decontamination unit location, AFD exhaust locations etc. for review and approval.
8. AHU servicing this floor is located on the other floors. Coordinate shutdown of the AHU servicing this floor. Install HVAC blanks in the ducts servicing the work area.
9. Plasticize critical openings, the floors/walls as necessary.
10. Establish a regulated area and install Decontamination Unit. Personnel and Equipment Decontamination Units shall be required. The contractor shall submit Decontamination unit layouts for review and approval. Five stage decontamination with shower with hot water is required for personnel decontamination unit.
11. Establish negative pressure work area.
12. Begin wet removal after pre-removal inspection.
13. Begin with removal of SAF and then other ACM (walls/flooring etc.). Use of PAPR will be required during removal of SAF.
14. Remove all SAF from beams, columns and any overspray on adjacent structures. SAF may be discovered in areas impossible to access. In these areas the space adjacent to the material shall be cleaned to the point of No Residue and the material sealed in place, airtight behind a fire rated structure.
15. Remove old ACM SAF in the area where SAF was previously abated. Old ACM SAF may be present at duct/pipe penetrations, at walls etc.
16. Remove all pipe insulation and dispose of as ACM. All pipe risers from the floor below should be capped at floor level.
17. Remove all flooring including mastic and dispose of as ACM
18. Wall Demolition as ACM. Demolish the walls which are scheduled for demolition and dispose of the wall components and debris as ACM. Review the extent of wall demolition as indicated in the AE demolition drawings.
19. After completion of removal, thoroughly clean the work area.
20. Upon successful removal and cleaning, request a pre-lock down inspection from the owner’s representative.
21. Upon successful pre-lock down inspection, spray the area with lock down encapsulant and request post-abatement air testing.

Basement Floor

1. ACM SAF was abated in certain areas of the basement floor as indicated in the drawing.
2. SAF is present on ceiling deck and also present on internal surface of the plaster/drywall wall/ceiling, wall cavities, above acoustic ceiling tiles where SAF was not abated previously, inside steel column encasements.
3. All interior walls scheduled for demolition are considered as asbestos-contaminated with SAF and should be removed as ACM.
4. In SAF abated area, asbestos containing SAF is also present in the interior surfaces of the plaster/drywall walls, inside steel column encasement. Asbestos is also present in the area where HVAC ducts are flushed with the ceiling beams and columns. At some locations there are signs indicting Asbestos containing SAF at duct locations.
5. Ceiling (plaster/drywall/acoustic ceiling tiles) in the area with SAF is considered as asbestos-contaminated with SAF and should be removed as ACM.
6. All structures/fixtures/piping, ductwork etc. located above the ceiling are considered as asbestos-contaminated with SAF and should be removed as ACM.
7. ACM flooring material may be present underneath the walls which are scheduled for removal.
8. Provide the list of Non-asbestos contaminated building materials to be removed as Non-ACM prior to asbestos abatement, for review and approval. This may include non-ACM flooring material, ceiling and above ceiling non-ACM items in the area where SAF was abated previously, fixed furniture and other items located below ceiling, etc. Removal of these items can be done prior to start of ACM work area preparation and removal.
9. Provide work area layouts with extent of work area, decontamination unit location, AFD exhaust locations etc. for review and approval.
10. AHU servicing this floor is located on the other floors. Coordinate shutdown of the AHU servicing this floor. Install HVAC blanks in the ducts servicing the work area.
11. Plasticize critical openings, the floors/walls as necessary.
12. Establish a regulated area and install Decontamination Unit. Personnel and Equipment Decontamination Units shall be required. The contractor shall submit Decontamination unit layouts for review and approval. Five stage decontamination with shower with hot water is required for personnel decontamination unit.
13. Establish negative pressure work area.
14. Begin wet removal after pre-removal inspection.
15. Begin with removal of SAF and then other ACM (walls/flooring etc.). Use of PAPR will be required during removal of SAF.
16. Remove all SAF from beams, columns and any overspray on adjacent structures. SAF may be discovered in areas impossible to access. In these areas the space adjacent to the material shall be cleaned to the point of No Residue and the material sealed in place, airtight behind a fire rated structure.
17. Remove old ACM SAF in the area where SAF was previously abated. Old ACM SAF may be present at duct/pipe penetrations, at walls etc.
18. Remove all pipe insulation and dispose of as ACM. All pipe risers from the floor below should be capped at floor level.
19. Remove all flooring including mastic and dispose of as ACM
20. Wall Demolition as ACM. Demolish the walls which are scheduled for demolition and dispose of the wall components and debris as ACM. Review the extent of wall demolition as indicated in the

AE demolition drawings.

21. After completion of removal, thoroughly clean the work area.
22. Upon successful removal and cleaning, request a pre-lock down inspection from the owner's representative.
23. Upon successful pre-lock down inspection, spray the area with lock down encapsulant and request post-abatement air testing.

WORK AREA CLEARANCE

Each work area will be cleared for re-occupancy as outlined below after successful visual inspection by the Owner's representative, using aggressive sampling.

CLEARANCE> WORKAREA	PCM < 0.01 F/CC	TEM < 0.01 S/CC	Comment
Each work area	5	5	**Asbestos Consultant representative will determine number of TEM air samples**

Asbestos Abatement - Kellogg Building
Kellogg Building Remodeling Phase I
Florida State University
Tallahassee, Florida

Prepared For
Architects Lewis + Whitlock
206 West Virginia Street
Tallahassee, Florida 32301

Mihir Environics Inc.

Environmental Health & Safety Consultants

3161 ELIZA ROAD, UNIT 2, TALLAHASSEE, FL 32308

PHONE: (850) 422-1255 FAX: (850) 422-1866

www.mihirenvironics.com

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT #2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Abatement Drawings - Title Page

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-1 DWG. NUMBER

OF SHEET

Drawing Index

AA-1 Title page
AA-2 Drawing index and General Notes
AA-3 Asbestos Abatement - Basement SAF
AA-4 Asbestos Abatement - Basement Flooring
AA-5 Asbestos Abatement - Basement TSI
AA-6 Asbestos Abatement - First Floor SAF
AA-7 Asbestos Abatement - First Floor Flooring
AA-8 Asbestos Abatement - First Floor TSI
AA-9 Asbestos Abatement - Second Floor SAF
AA-10 Asbestos Abatement - Second Floor Flooring
AA-11 Asbestos Abatement - Second Floor TSI
AA-12 Asbestos Abatement - Third Floor SAF
AA-13 Asbestos Abatement - Third Floor Flooring
AA-14 Asbestos Abatement - Third Floor TSI
AA-15 Asbestos Abatement - Fourth Floor SAF
AA-16 Asbestos Abatement - Fourth Floor Flooring
AA-17 Asbestos Abatement - Fourth Floor TSI
AA-18 Asbestos Abatement - Fifth Floor SAF and Flooring

General Drawing Notes

1. Coordinate demolition scope of work with the Architects's demolition drawings. Refer to Architects's drawings and specifications for extent and requirement of demolition. Refer to AE Arcitectural, mechaincal and plumbing drwings for scope of demolition.
2. Asbestos containing spray applied fireproofing (SAF) is present on ceiling deck including beams and columns; and also present in the interior surfaces of the plaster/drywall walls, inside steel column encasement, and SAF over spray/debris in above ceiling space.
3. In SAF abated area, asbestos is containing SAF is also present in the interior surfaces of the plaster/drywall walls, inside steel column encasement. Asbestos is also present in the area where HVAC ducts are flushed with the ceiling beams and columns. At some locations there are signs indicting Asbestos containing SAF at duct locations.
4. All interior walls which are scheduled for demolition are considered as asbestos-contaminated with spray applied fire proofing (SAF) material, should be removed as ACM.
5. Ceiling (plaster/Drywall/Acoustic tiles) in the area with SAF is considered as asbestos-contaminated with spray applied fire proofing (SAF) material, should be removed as ACM.
6. All structures/fixtures/piping, ductwork etc. located above the ceiling in the area with SAF is considered as asbestos-contaminated with SAF material, should be removed as ACM.
7. ACM flooring may be present underneath the walls which are scheduled for demolition.
8. Provide a list and location of Non-ACM contaminated material which will be removed prior to asbestos abatement, for review and approval.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

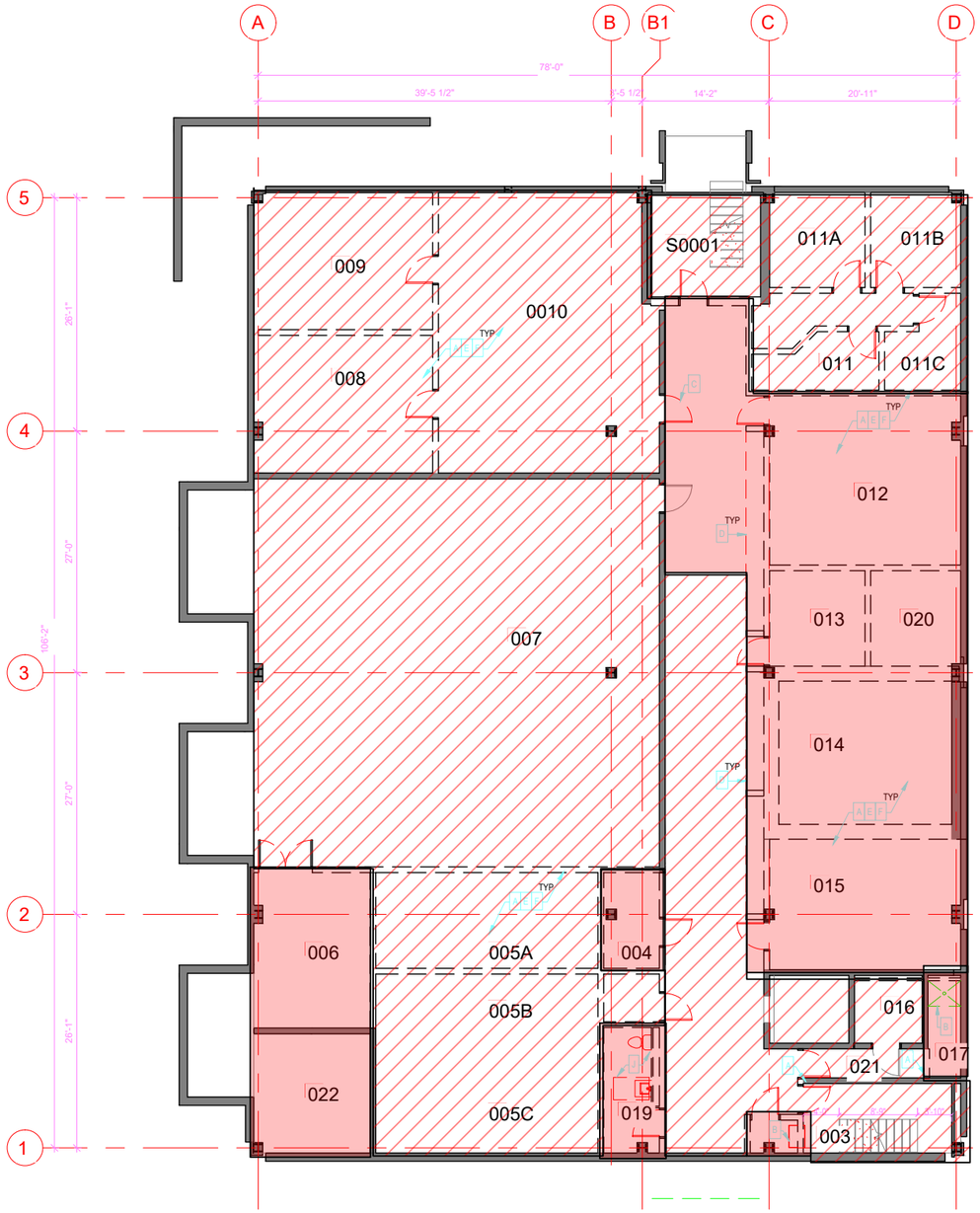
DRAWING TITLE
Drawing Index and General Drawing Notes

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-2 DWG. NUMBER

OF SHEET



ACM SAF to be abated,

SAF abated, SAF contamination in wall cavities, column, duct/Beam intersection may conseal ACM SAF.

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM SAF was abated previously in multiple areas of the floor.
- When the floor is divided into multiple work areas, provide work area layout for review and approval.

Basement Floor

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT #2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

DRAWING TITLE
Basement Floor - SAF

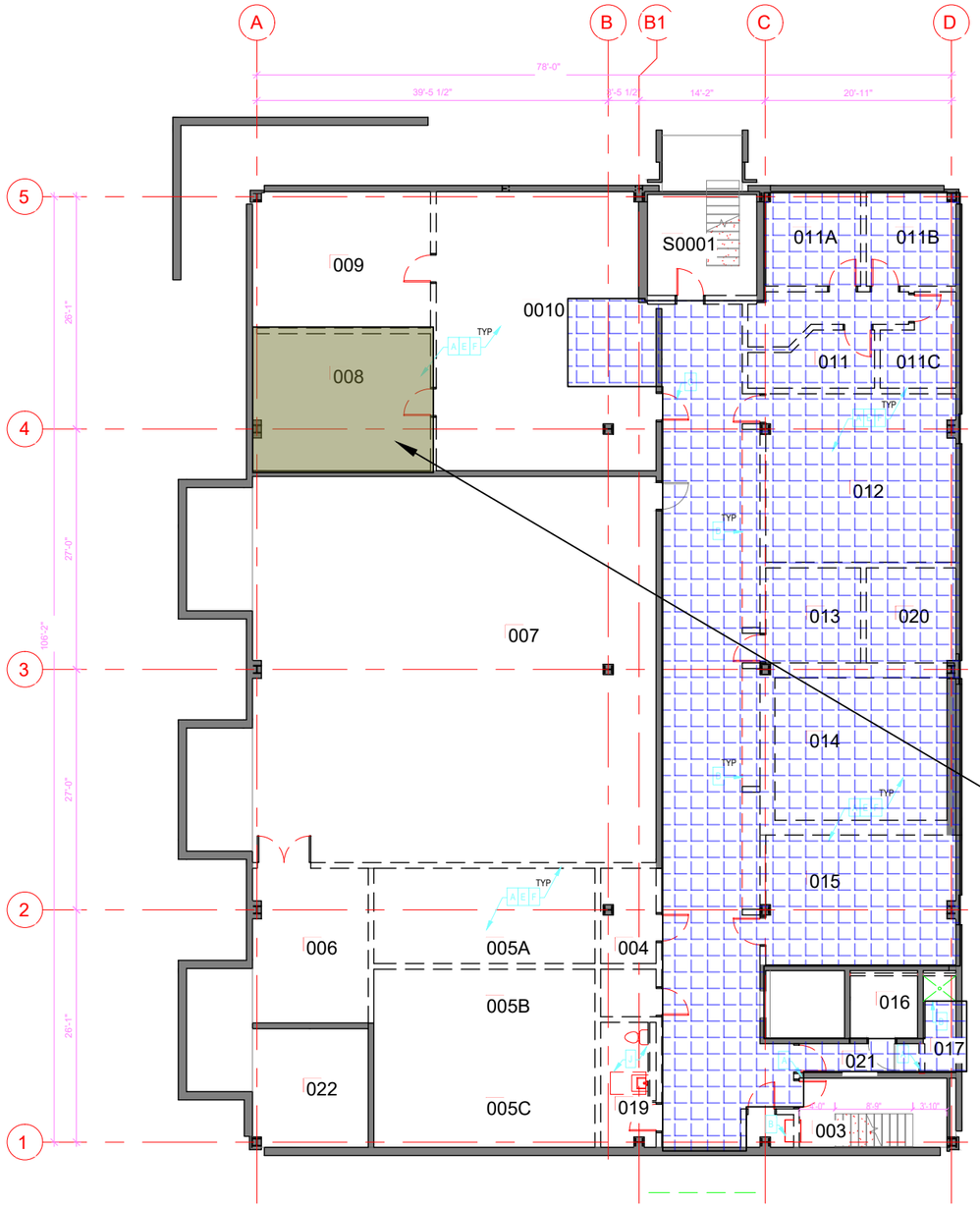
PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-3 DWG. NUMBER

1 OF 1 SHEET



ACM Flooring and mastic, Baseboard and Mastic

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- ACM Flooring material may be present underneath walls/furniture.

Lab counter tops - ACM, to be removed as ACM

Basement Floor

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

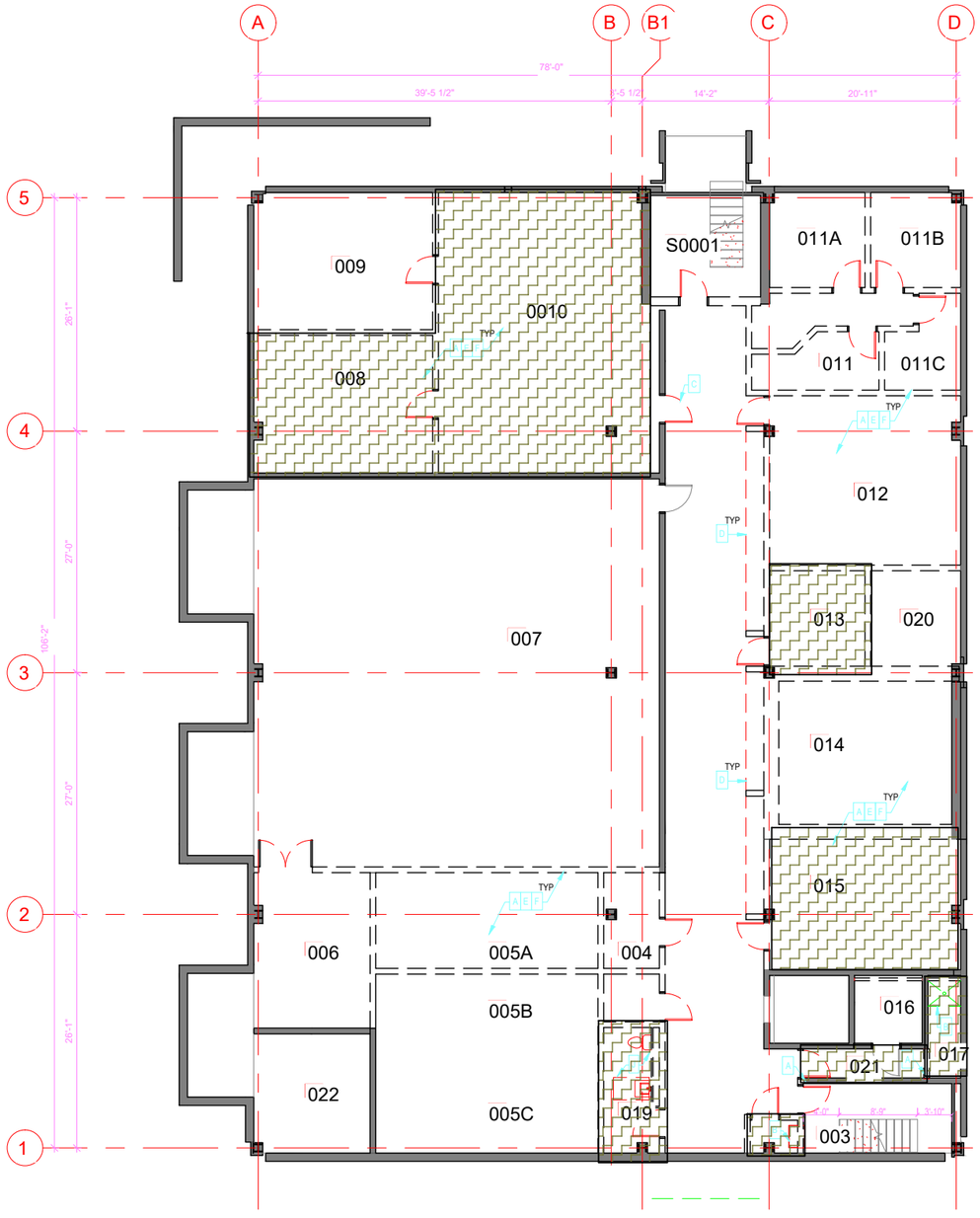
DRAWING TITLE
Basement Floor - Flooring

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-4 DWG. NUMBER

OF SHEET



ACM Piping run and Fittings Insulation, Approximate area

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- All pipe insulation including fittings is considered as ACM. See asbestos survey update report for detail.

Basement Floor

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

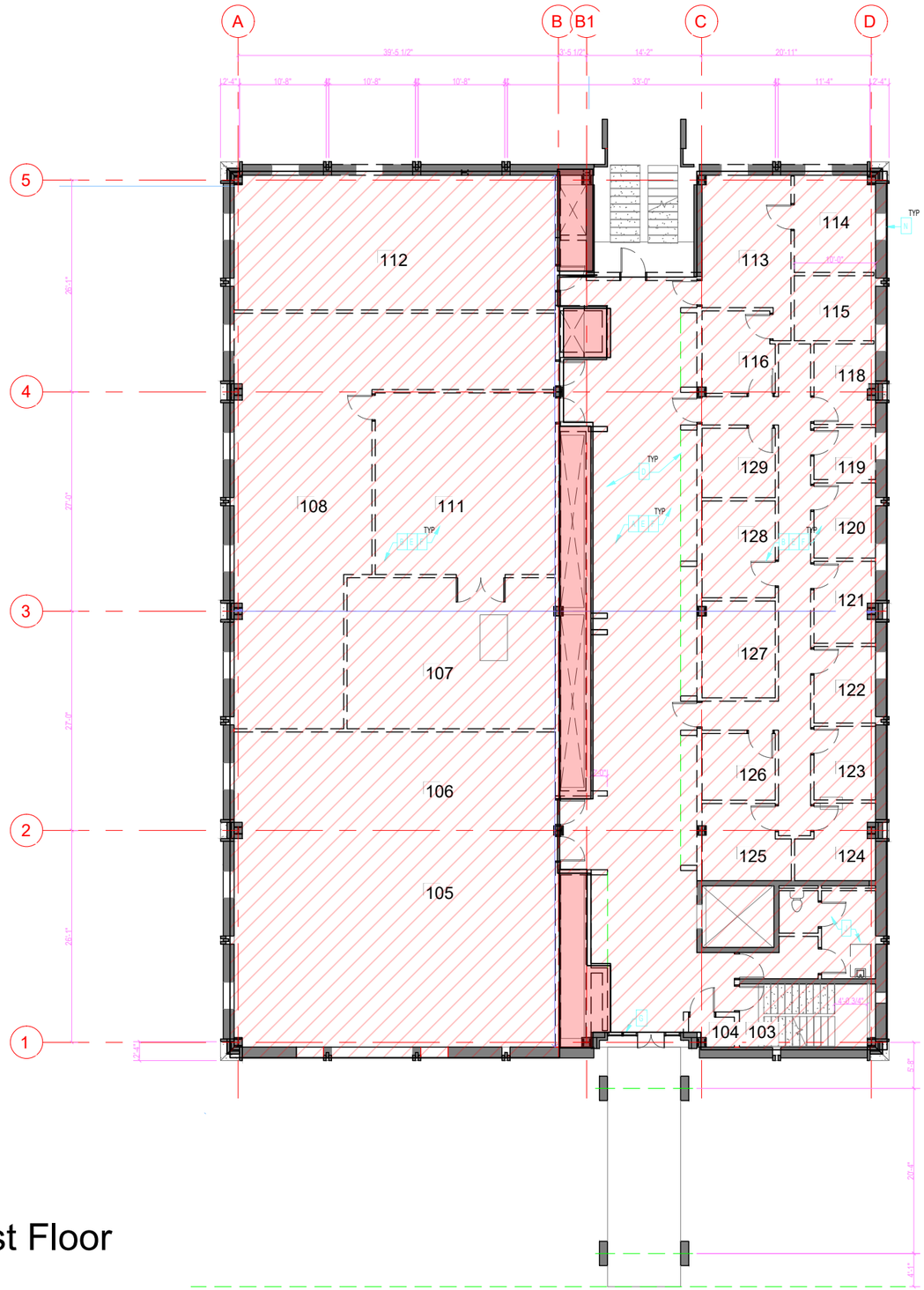
DRAWING TITLE
basement Floor - TSI

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-5 DWG. NUMBER

OF SHEET



First Floor

ACM SAF to be abated,

SAF abated, SAF contamination in wall cavities, column, duct/Beam intersection may conseal ACM SAF.

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM SAF was abated previously in the First Floor except chases.
- Provide a list and location of Non-ACM contaminated material which will be removed prior to asbestos abatement, for review and approval.
- When the floor is divided into multiple work areas, provide work area layout for review and approval.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT #2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

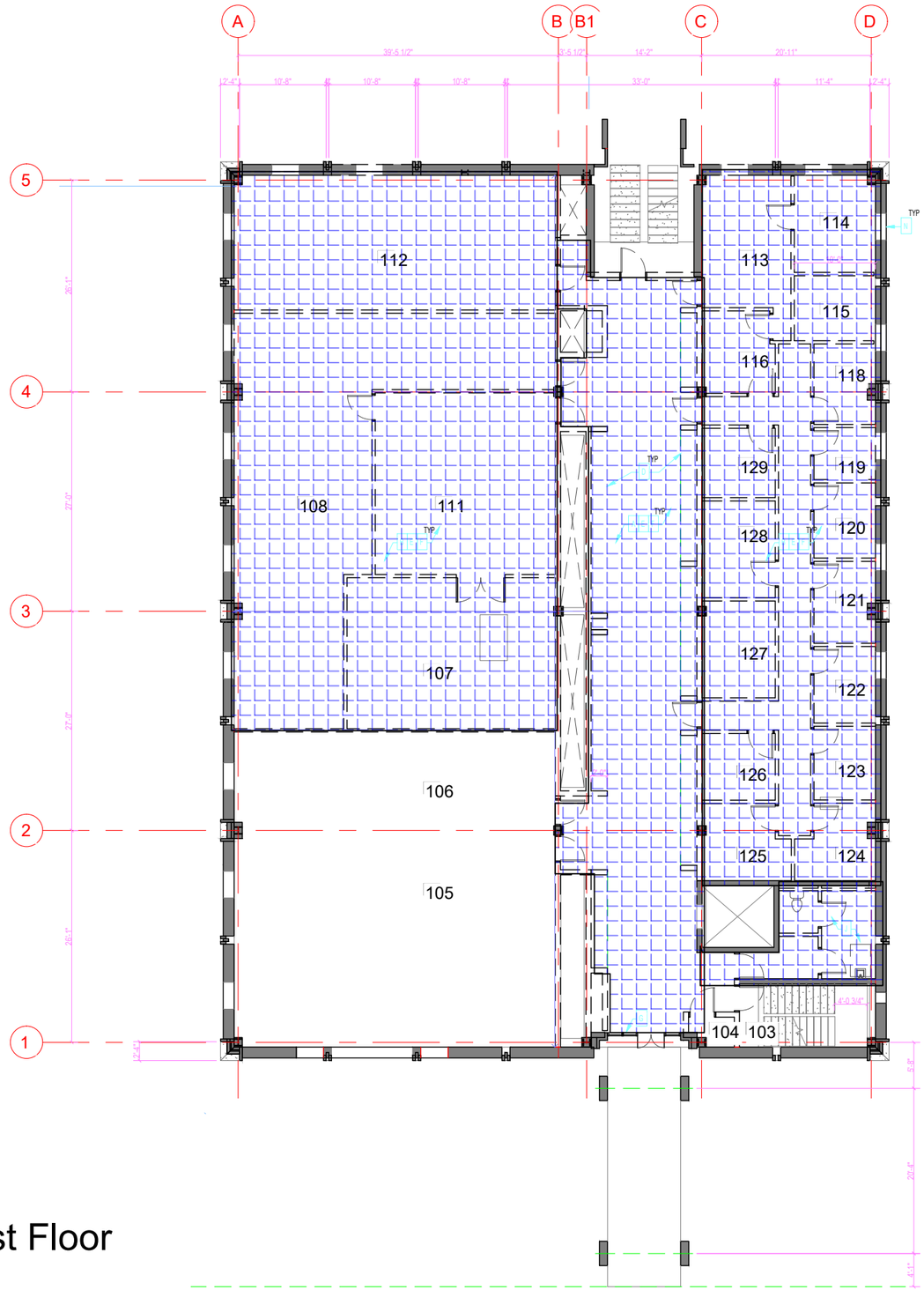
DRAWING TITLE
First Floor SAF

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-6 DWG. NUMBER

OF SHEET



First Floor

ACM Flooring and mastic, Baseboard and Mastic

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- ACM Flooring material may be present underneath walls/furniture.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

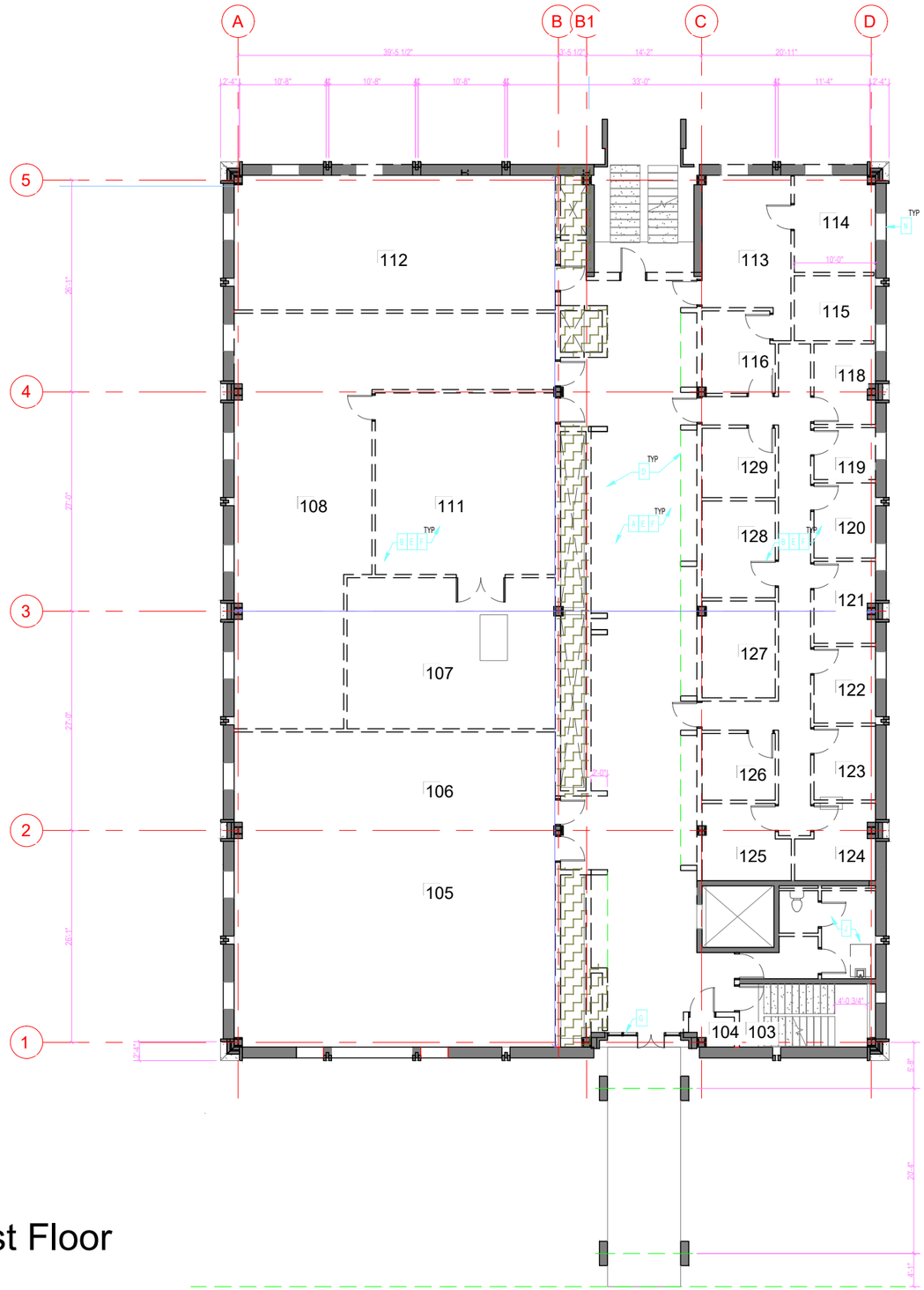
DRAWING TITLE
First Floor - Flooring

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-7 DWG. NUMBER

OF SHEET



First Floor

ACM Piping insulation in pipe/duct chases.

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- All pipe insulation including fittings is considered as ACM. See asbestos survey update report for detail.
- Duct/Pipe chase also contains ACM SAF debris.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

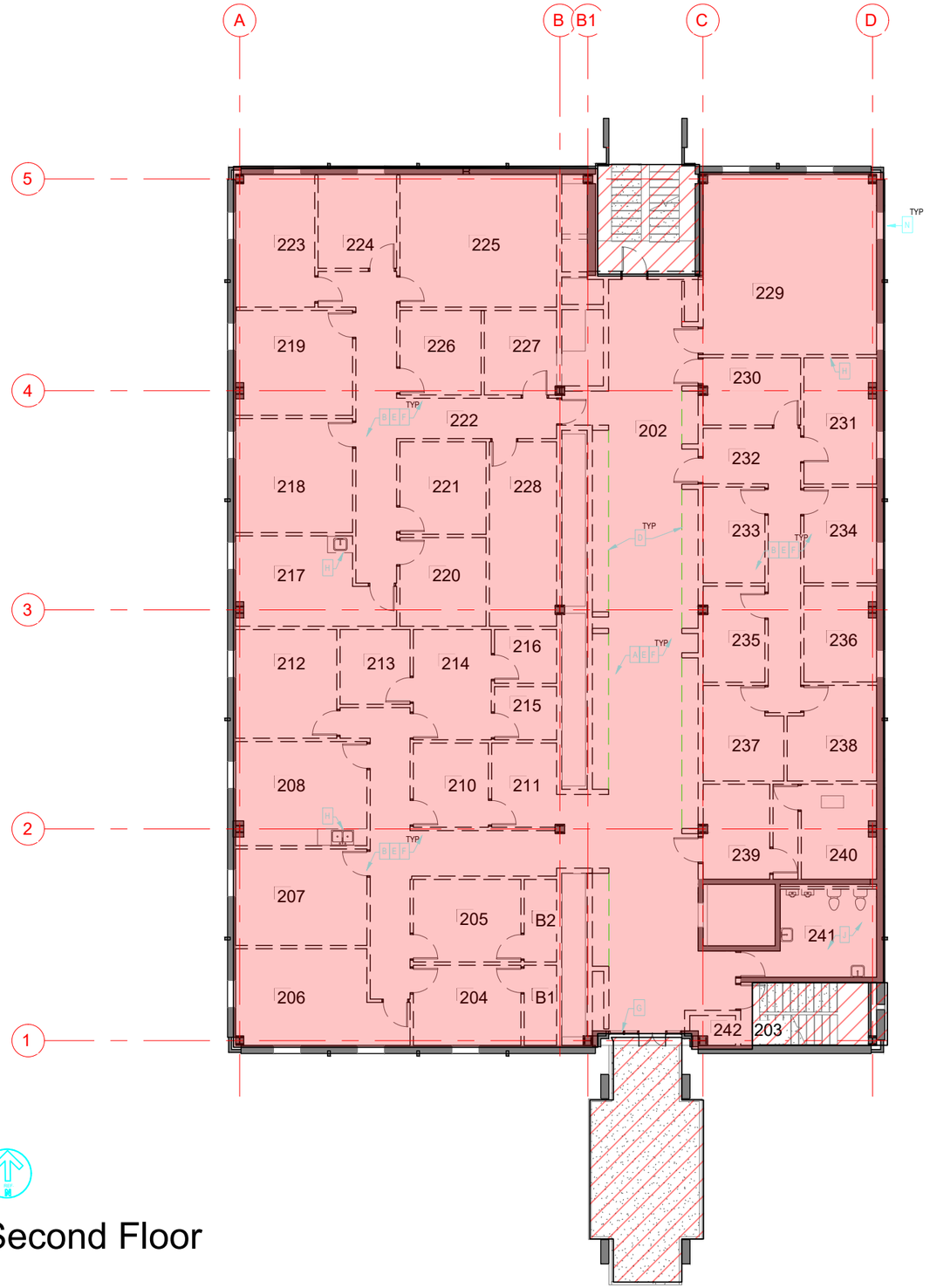
DRAWING TITLE
First Floor TSI

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-8 DWG. NUMBER

OF SHEET



Second Floor

ACM SAF to be abated,

SAF abated, SAF contamination in wall cavities, column, duct/Beam intersection may conseal ACM SAF.

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- Provide a list and location of Non-ACM contaminated material which will be removed prior to asbestos abatement, for review and approval.
- When the floor is divided into multiple work areas, provide work area layout for review and approval.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

DRAWING TITLE
Second Floor - SAF

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-9 DWG. NUMBER

OF SHEET

Second Floor

ACM Flooring and mastic, Baseboard and Mastic

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- ACM Flooring material may be present underneath walls/furniture.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

DRAWING TITLE
Second Floor - Flooring

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-10 DWG. NUMBER

OF SHEET

Second Floor

ACM Piping run and Fittings Insulation, Approximate area

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- All pipe insulation including fittings is considered as ACM. See asbestos survey update report for detail.
- Duct/Pipe chase also contains ACM SAF debris.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

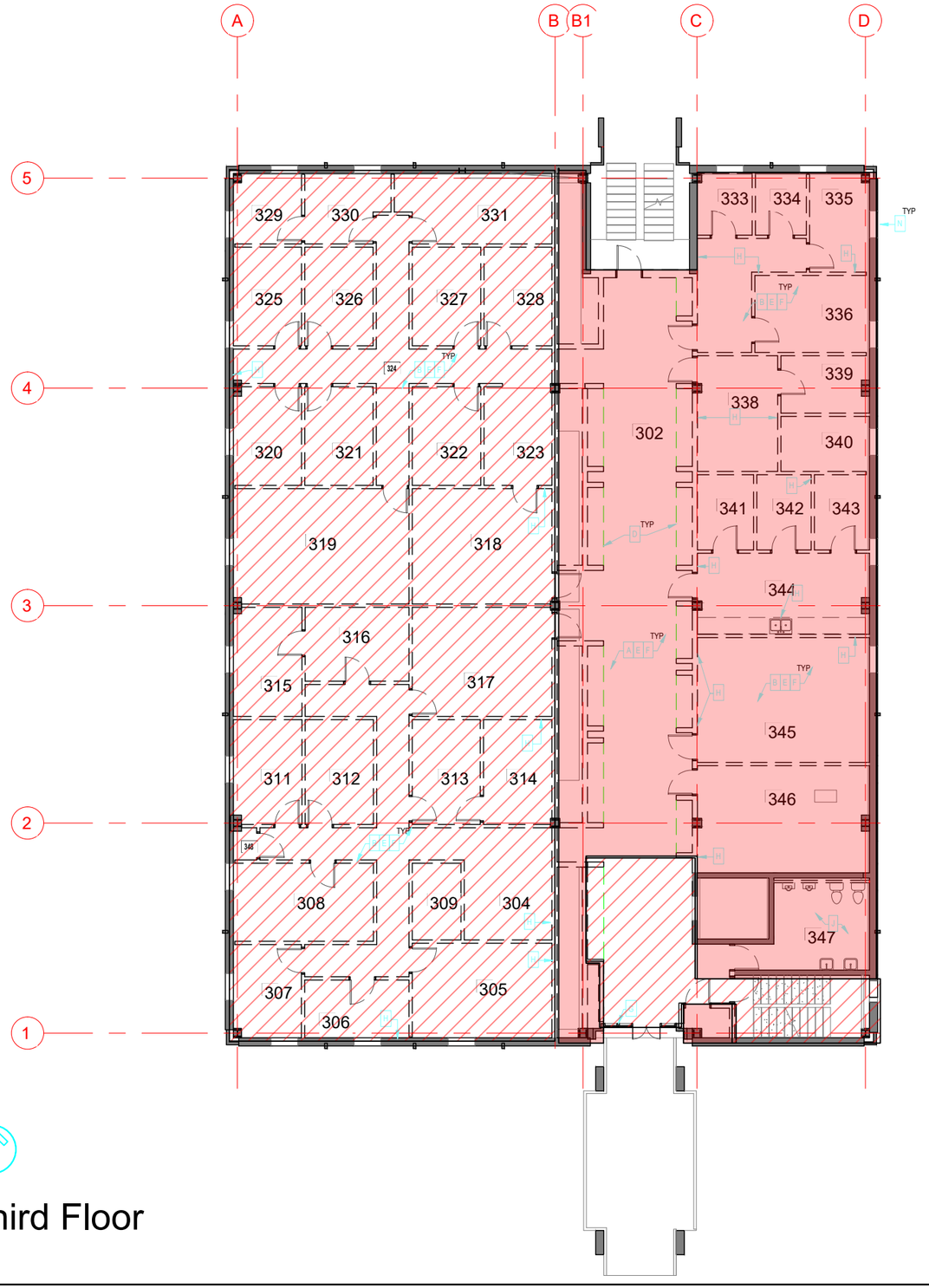
DRAWING TITLE
Second Floor - TSI

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-11 DWG. NUMBER

OF SHEET



Third Floor

ACM SAF to be abated,

SAF abated, SAF contamination in wall cavities, column, duct/Beam intersection may conseal ACM SAF.

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM SAF was abated previously in the West half of the floor. ACM SAF remains in walls, columns, behind flushed HVAC dust to ceiling.beams/columns.
- Provide a list and location of Non-ACM contaminated material which will be removed prior to asbestos abatement, for review and approval.
- When the floor is divided into multiple work areas, provide work area layout for review and approval.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT

Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

DRAWING TITLE

Third Floor - SAF

PROJECT NAME

Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-12 DWG. NUMBER

OF SHEET

ACM Flooring and mastic, Baseboard and Mastic

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- ACM Flooring material may be present underneath walls/furniture.

Sink bottom undercoating is ACM. Remove sink as ACM.

Third Floor

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT #2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

DRAWING TITLE
Third Floor - Flooring

01-14-2026 DATE
052-038-000 PROJECT NUMBEER
AA-13 DWG. NUMBER
OF SHEET

Third Floor

ACM Piping run and Fittings Insulation, Approximate area

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- All pipe insulation including fittings is considered as ACM. See asbestos survey update report for detail.
- Duct/Pipe chase also contains ACM SAF debris.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

DRAWING TITLE
Third Floor - TSI

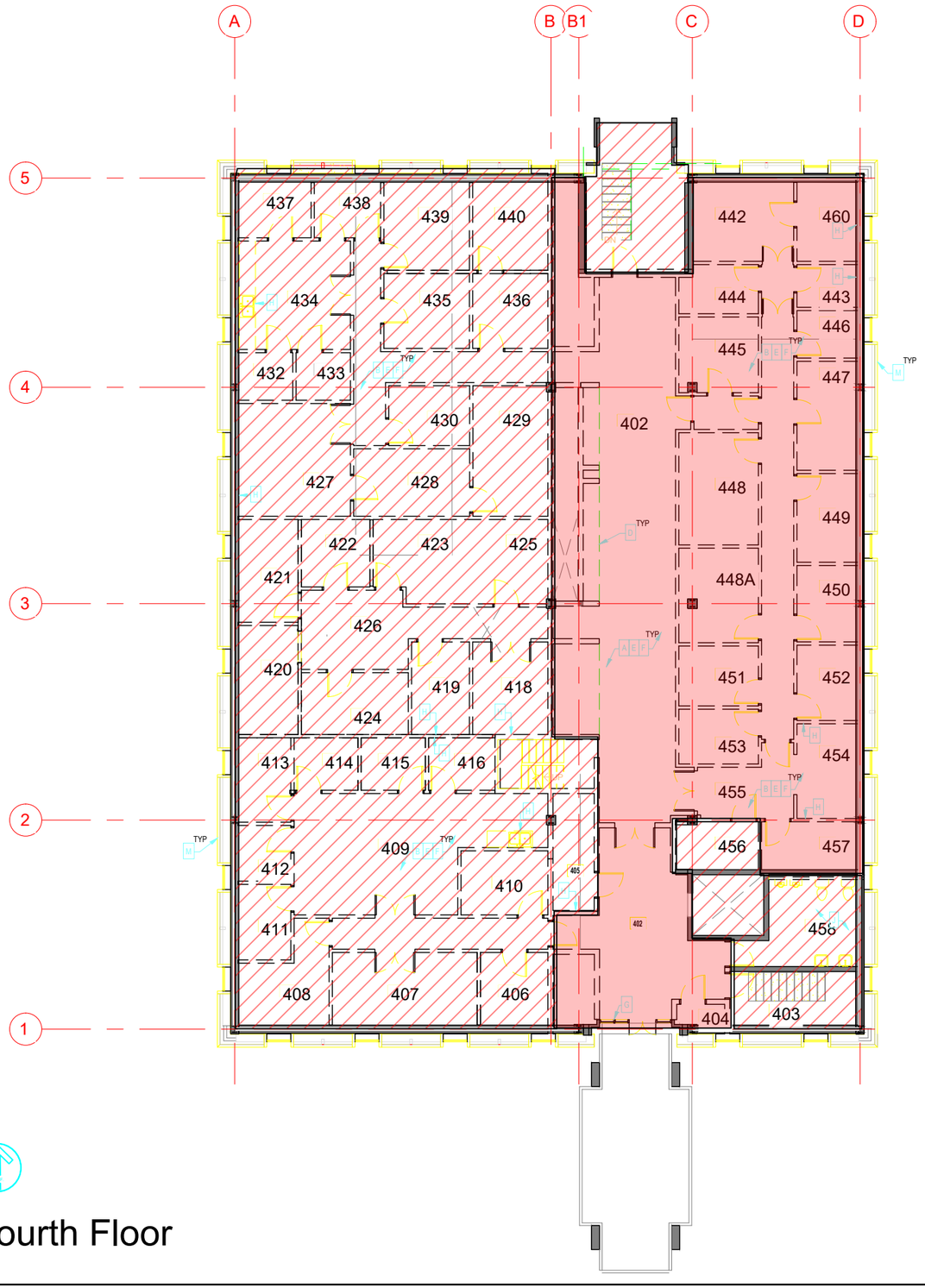
PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-14 DWG. NUMBER

OF SHEET



ACM SAF to be abated,

SAF abated, SAF contamination in wall cavities, column, duct/Beam intersection may conseal ACM SAF.

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM SAF was abated previously in the West half of the floor. ACM SAF remains in walls, columns, behind flushed HVAC dust to ceiling.beams/columns.
- Provide a list and location of Non-ACM contaminated material which will be removed prior to asbestos abatement, for review and approval.
- When the floor is divided into multiple work areas, provide work area layout for review and approval.

Fourth Floor

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

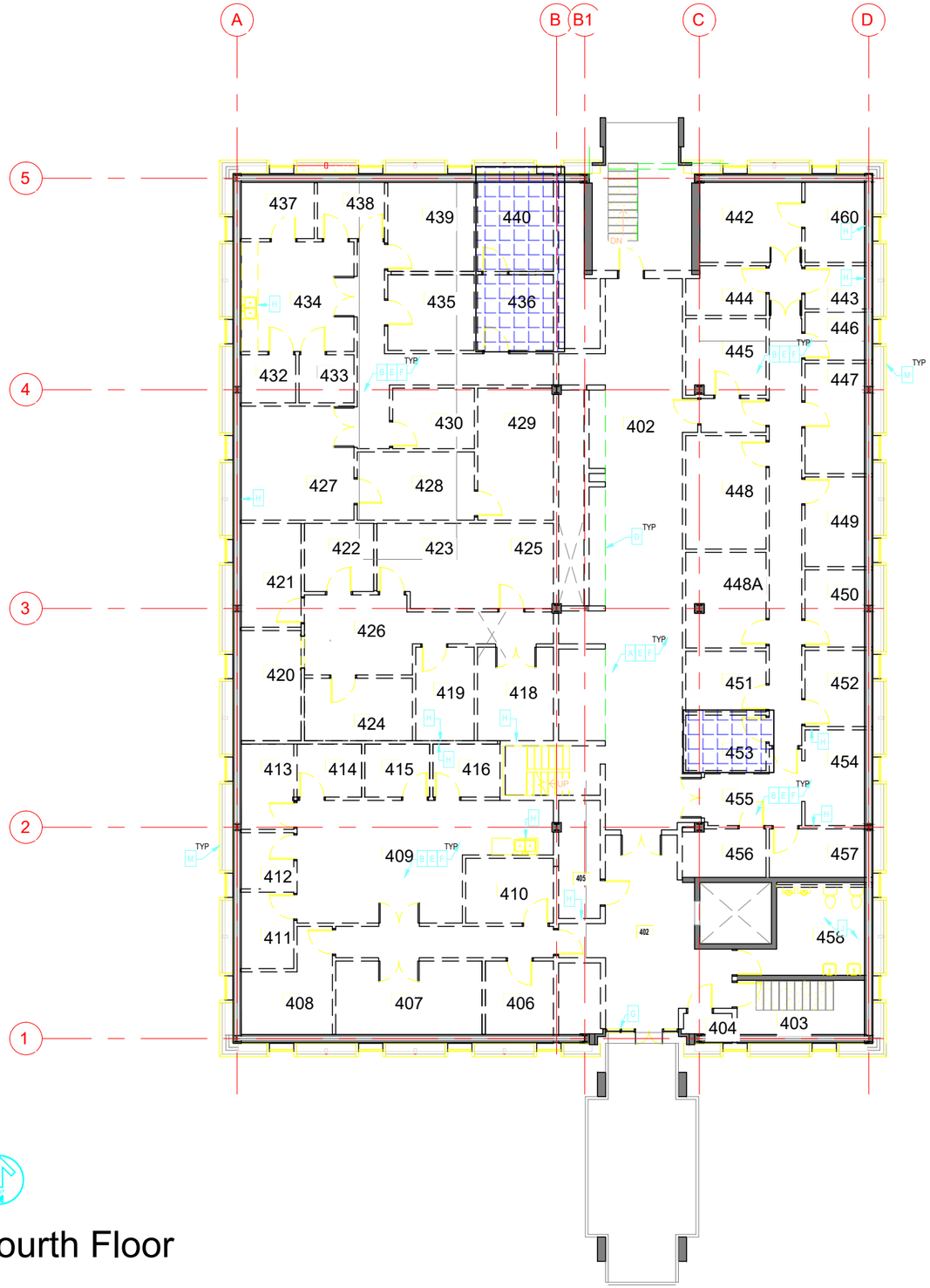
DRAWING TITLE
Fourth Floor - SAF

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-15 DWG. NUMBER

OF SHEET



ACM Flooring and mastic, Baseboard and Mastic

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- ACM Flooring material may be present underneath walls/furniture.

Fourth Floor

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

DRAWING TITLE
Fourth Floor - Flooring

01-14-2026 DATE
052-038-000 PROJECT NUMBEER
AA-16 DWG. NUMBER
1 OF 1 SHEET

ACM Piping run and Fittings Insulation, Approximate area

DEMOLITION FLOOR PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- PARTITION OR WALL TO BE REMOVED
- CONSTRUCTION TO REMAIN
- CONSTRUCTION TO BE REMOVED
- TEMPORARY INFILL WALL
- EXISTING FLOORING TO BE REMOVED

- ACM Flooring material includes flooring material with mastic; and baseboard with mastic.
- All pipe insulation including fittings is considered as ACM. See asbestos survey update report for detail.
- Duct/Pipe chase also contains ACM SAF debris.

Fourth Floor

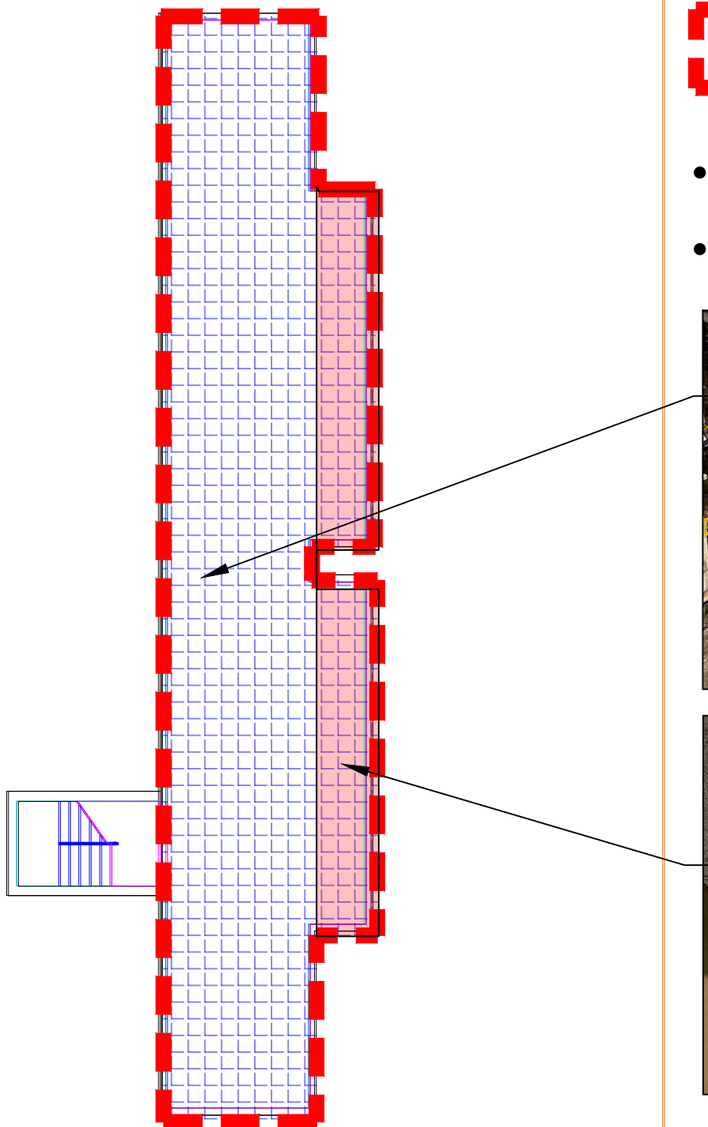
Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME
Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

DRAWING TITLE
Fourth Floor - TSI

01-14-2026 DATE
052-038-000 PROJECT NUMBEER
AA-17 DWG. NUMBER
1 OF 1 SHEET



Fifth Floor

ACM SAF to be abated

ACM Flooring and mastic, Baseboard and Mastic

Work Area Limit

- Protect AHU and ductwork inside the work area with 2 layers of 6-mil plastic sheeting.
- Decontamination unit on Fourth floor adjacent to the stair entrance.

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT

Architects Lewis + Whitlock
206 West Virginia St.
Tallahassee, Florida 32301

PROJECT NAME

Asbestos Abatement
Kellogg Building Remodel Phase I
Florida State University
Tallahassee, Florida

DRAWING TITLE

Fifth Floor - SAF and Flooring

01-14-2026 DATE

052-038-000 PROJECT NUMBEER

AA-18 DWG. NUMBER

OF SHEET

ASBESTOS SURVEY UPDATE REPORT (2024)
Kellogg Research Building
FSU Building No. 073-0006
Florida State University
Tallahassee Florida

Prepared For

Architects Lewis + Whitlock
206 West Virginia Street
Tallahassee, Florida 32301

Reviewed by: Ajay Thakkar, C.I.H.
Florida License No. IA00000056

Mihir Environics Inc.
3161 Eliza Road Unit # 2
TALLAHASSEE, FL 32308
(850) 422-1255

MEI Project No. 052.038.000

22 March 2024

Table of Contents

Page

SECTION 1 INTRODUCTION 3
SECTION 2 REPORT ORGANIZATION 4

Tables

Table 1 - Summary of ACM and Non-ACM by Room numbers (64 pages) 5
Table 2 - Summary of ACM by Room numbers (45 pages) 6

Appendices

A Drawings (18 pages) 7

INTRODUCTION

Mihir Environics, Inc. (MEI) performed an Asbestos Survey Update of the Kellogg Building at the Florida State university. The objectives of the survey were to determine the location, quantity, and condition of Asbestos Containing Material (ACM) in the building based on previous asbestos survey and abatement records, inspection of present condition and inspection and testing of additional suspect ACM if necessary.

This report was produced from the previous asbestos survey and abatement records; and data collected by MEI personnel.

The user is cautioned to review the entire report prior to making environmental decisions, and to refrain from separately transmitting this text of the report without supporting appendices of the report. This survey report should not be used as asbestos abatement specifications.

Prior to the actual physical building inspection, MEI reviewed previous asbestos survey and abatement records provided by the FSU and MEI previous project records. This asbestos survey update report included pertinent information from past records review.

The building was physically inspected to determine the presence or absence of previously identified suspect ACM; to identify additional suspect ACM, assess condition, location, quantity of ACM and additional suspect ACM, and to collect necessary bulk samples if necessary. laboratory countertop was not included in scope of work for sampling, all those materials were assumed as ACM.

REPORT ORGANIZATION

This report is divided into the following sections and multiple appendices.

Introduction provides general information regarding asbestos survey update.

The following Tables and Appendices provides detail information about the survey.

Table 1 - Summary of ACM and Non-ACM by New Room numbers:

This table summarizes all homogenous areas identified in the previous asbestos survey information as well as new homogenous areas identified during this survey update. This Table summarizes Room Numbers, HA Number and description, ACM Status (ACM, NON-ACM, Abated etc.), quantity, location, and remarks.

Table 2 - Summary of ACM by Room numbers

This table summarizes all ACM homogenous areas identified in the previous asbestos survey information as well as new homogenous areas identified during this survey update.

Appendix A - Drawings

This Appendix includes floor plan drawings with sample location and ACM location as identified during this survey update.

Table - 1, Summary of ACM and Non-ACM by New Room numbers:

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
01	0001	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1500	sf	Interior surface contaminated with		
01	0001	043	Floor Tile Gray	ACM	890	sf			
01	0001	045	Acoustic Tile White with Wormhole Pattern	ACM	870	sf			South Hallway - Non-ACM ceiling tiles
01	0001	047	Mastic Brown Baseboard Mastic	ACM	165	sf			
01	0001	056	Fire Hose White	ABATED	2	sf		Removed	
01	0001	065	Fireproofmg Gray Spray Applied	ABATED	450	lf			South Hall Abated
01	0001	065	Fireproofmg Gray Spray Applied	ACM	450	lf			North Hall not abated
01	0001	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	105	lf	assumed form drawing	Abated Quantity unverifiable	
01	0001	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	105	lf	assumed form drawing	Abated Quantity unverifiable	
04	0004	044	Acoustic Tile White	ACM	45	sf		damaged & two missing	
04	0004	065	Fireproofmg Gray Spray Applied	ACM	70	lf			
04	0004	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	11	lf			
06	0006	050	Acoustic Tile White	ACM	230	sf			
06	0006	065	Fireproofing Gray Spray Applied	ACM	245	lf			
06	0006	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
07	0007	001	High-pressure steam Pipe Run 4"-8" White	ABATED	5	lf		Abated in 2002-03	
07	0007	002	High-pressure steam Pipe Fitting 4%8" white	ABATED	3	ea		Abated in 2002-03	
07	0007	003	High-pressure steam Pipe Run 9"-I4" white	ABATED	5	lf		Abated in 2002-03	
07	0007	004	High-pressure steam Pipe Fitting 9"-14" White	ABATED	4	ea		Abated in 2002-03	
07	0007	005	Low-pressure steam Pipe Run 4%8" White	ABATED	85	lf		Abated in 2002-03	
07	0007	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	3	lf		Abated in 2002-03	
07	0007	006	Low-pressure steam Pipe Fitting 4"-8" White	ABATED	23	ea		Abated in 2002-03	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
07	0007	007	Condensate Pipe Run 4"-8" White	ABATED	100	lf		Abated in 2002-03	
07	0007	008	Condensate Pipe Fitting 4%8" White	ABATED	20	ea		Abated in 2002-03	
07	0007	009	Heating hot water supply Pipe Run 4%8" White	ABATED	100	lf		Abated in 2002-03	
07	0007	009	Heating hot water supply Pipe Run 4%8" White	ABATED	3	lf		Abated in 2002-03	
07	0007	010	Heating hot water supply Pipe Fitting 4"-8" White	ABATED	40	ea		Abated in 2002-03	
07	0007	011	Heating hot water return Pipe Run 4"-8" White	ABATED	3	lf		Abated in 2002-03	
07	0007	011	Heating hot water return Pipe Run 4"-8" White	ABATED	125	lf		Abated in 2002-03	
07	0007	012	Heating hot water return Pipe Fitting 4"-8" White	ABATED	48	ea		Abated in 2002-03	
07	0007	013	Heating hot water return Pipe Fitting 9"-14" White	ABATED	4	ea		Abated in 2002-03	
07	0007	014	Condensate Pipe Run 4"-8" White	ABATED	50	lf		Abated in 2002-03	
07	0007	015	Condensate Pipe Fitting 4"-8" White	ABATED	12	ea		Abated in 2002-03	
07	0007	016	Condensate Pipe Run 4"-8" White	ABATED	4	lf		Abated in 2002-03	
07	0007	017	Condensate Pipe Fitting 4"-8" White Patch	ABATED	4	ea		Abated in 2002-03	
07	0007	018	Hot domestic water Pipe Run 4"-8" White Recirculating Wrap	NON-ACM	55	lf			
07	0007	019	Chilled water Tank Black Chiller	ABATED	30	sf		Abated in 2002-03	
07	0007	020	Chilled water supply Pipe Run 4"-8" Black Pipe Run, Chilled Water Supply, 4"-	ABATED	35	lf		Abated in 2002-03	
07	0007	021	Chilled water supply Pipe Fitting 4"-8" Black	ABATED	35	ea		Abated in 2002-03	
07	0007	022	Chilled water return Pipe Run 4"-8" Black	ABATED	10	lf		Abated in 2002-03	
07	0007	023	Chilled water return Pipe Fitting 4%8" Black	ABATED	20	ea		Abated in 2002-03	
07	0007	024	Chilled water supply Pipe Run 9"-14" Black	ABATED	25	lf		Abated in 2002-03	
07	0007	025	Chilled water supply Pipe Fitting 9"-I4" Black	ABATED	8	ea		Abated in 2002-03	
07	0007	026	Chilled water return Pipe Run 9"-14" Black Pipe Run, Chilled Water Return, 9"-	NON-ACM	20	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
07	0007	027	Chilled water return Pipe Fitting 9"-14" Black	NON-ACM	6	ea			
07	0007	028	Chilled water supply Pipe Run 4"-8" White	NON-ACM	100	lf			
07	0007	029	Chilled water return Pipe Run 4"-8" White White Wrap	NON-ACM	85	lf			
07	0007	030	Cold domestic water Pipe Run 4%8" White White Wrap	NON-ACM	30	If			
07	0007	031	Chilled water supply Pipe Fitting 4%8" White	ABATED	20	ea		Abated in 2002-03	
07	0007	032	Chilled water return Pipe Fitting 4"-8" White	ABATED	20	ea		Abated in 2002-03	
07	0007	033	Cold domestic water. Pipe Fitting 4%8" White	ABATED	8	ea		Abated in 2002-03	
07	0007	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	15	If			
07	0007	036	Heating hot water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	4	lf			
07	0007	037	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ABATED	4	lf		Abated in 2002-03	
07	0007	038	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,	ABATED	70	lf		Abated in 2002-03	
07	0007	045	Acoustic Tile White with Wormhole Pattern	ABATED	150	sf	sound proofing	Abated in 2002-03	
07	0007	050	Acoustic Tile White	ABATED	1600	sf	other patch tile	Abated in 2002-03	
07	0007	051	Mastic Brown Adhestive for HA No. 006	NON-ACM	50	sf			
07	0007	065	Fireproofing Gray Spray Applied	ABATED	2000	lf		Abated in 2002-03	
07	0007	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ABATED	25	lf		Abated in 2002-03	
07	0007	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf		Abated in 2002-03	
07	0007	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ABATED	2	lf		Abated in 2002-03	
08	0008	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	140	sf	Interior surface contaminated with		
08	0008	044	Acoustic Tile White	ABATED	220	sf			Abated
08	0008	044	Acoustic Tile White	ABATED	40	sf			Abated
08	0008	055	Transite Gray Lab Table,	ACM	50	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
08	0008	065	Fireproofing Gray Spray Applied	ABATED	280	lf			Abated 2021, 056-047
08	0008	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	7	lf	assumed form drawing		
08	0008	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf	assumed form drawing		
08	0008	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed form drawing		
08	0008	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	7	lf	assumed form drawing		
08	0008	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
09	0009	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with		
09	0009	044	Acoustic Tile White	ABATED	315	sf			Abated
09	0009	065	Fireproofing Gray Spray Applied	ABATED	300	lf			Abated 2021, 056-047
09	0009	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
10	0010	044	Acoustic Tile White	ABATED	715	sf	Missing tile		
10-A	0010	044	Acoustic Tile White	ABATED	65	sf		Room 10A is Part of Room 10	
10-A	0010	061	Floor Tile Green with White & Black Stripes	ACM	65	sf		Room 10A is Part of Room 10	Residual tile and mastic present
10	0010	065	Fireproofing Gray Spray Applied	ABATED	750	lf			Abated 2021, 056-047
10-A	0010	065	Fireproofing Gray Spray Applied	ABATED	40	lf		Room 10A is Part of Room 10	Abated 2021, 056-047
10	0010	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
10	0010	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
10	0010	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
11	0011	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with		
11	0011	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	20	sf			
11	0011	043	Floor Tile Gray	ACM	65	sf		Not mentioned in previous record	
11	0011	062	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	55	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
11	0011	063	Fireproofing Gray Spray Applied, Treatment,	NON-ACM	70	lf			
12	0012	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	230	sf	Interior surface contaminated with SAF.		
12	0012	043	Floor Tile Gray	ACM	380	sf			
12	0012	047	Mastic Brown Bse'board Mastic	ABATED	73	sf		Abated	
12	0012	063	Fireproofing Gray Spray Applied, Treatment,	NON-ACM	380	If			
12	0012	064	Acoustic Sound Proofing Gray South Booth	ABATED	20	sf		Abated	
12	0012	064	Acoustic Sound Proofing Gray South Booth	ABATED	320	sf		Abated	
12	0012	064	Acoustic Sound Proofmg Gray South Booth	ABATED	100	sf		Abated	
12	0012	064	Acoustic Sound Proofing Gray South Booth	ABATED	100	sf		Abated	
12	0012	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	461	lf		Quantity revised	
13	0013	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	325	sf			
13	0013	043	Floor Tile Gray	ACM	110	sf		Under Carpet	
13	0013	044	Acoustic Tile White	ACM	110	sf			
13	0013	047	Mastic Brown Baseboard Mastic	ACM	31	sf			
13	0013	065	Fireproofing Gray Spray Applied	ACM	110	lf			
13	0013	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	8	lf	Assumed from drawing		
13	0013	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
13	0013	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	8	lf	Assumed from drawing		
13	0013	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
13	0013	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
14	0014	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	610	sf	Interior surface contaminated with SAF.		
14	0014	043	Floor Tile Gray	ACM	310	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
14	0014	044	Acoustic Tile White	ACM	310	sf			
14	0014	047	Mastic Brown Baseboard Mastic	ACM	67	sf		Room 14 - Possibly LEAD lining,, Volt,	
14	0014	065	Fireproofing Gray Spray Applied	ACM	310	lf			
15	0015	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
15	0015	043	Floor Tile Gray	ACM	295	sf		Under Carpet	
15	0015	044	Acoustic Tile White	ACM	280	sf			
15	0015	047	Mastic Brown Baseboard Mastic	ACM	57	sf			
15	0015	065	Fireproofing Gray Spray Applied	ACM	280	lf			
15	0015	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
15	0015	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
15	0015	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
15	0015	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
15	0015	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
16	0016	065	Fireproofing Gray Spray Applied	ABATED	120	lf		Abated	
16-A	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	50	sf		Abated	
16-A	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with SAF.		
17	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	35	sf	Interior surface contaminated with SAF.		
17	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
16-A	0017	043	Floor Tile Gray	ACM	50	sf			
16-A	0017	047	Mastic Brown Baseboard Mastic	ACM	23	sf			
16-A	0017	065	Fireproofing Gray Spray Applied	ABATED	50	lf		Abated	
17	0017	065	Fireproofing Gray Spray Applied	ACM	100	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
17	0017	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
17	0017	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	15	lf			
17	0017	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
17	0017	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
03	0019	034	Cold domestic water Pipe Run 4%8" Black Mastic Wrap	NON-ACM	10	If			
03	0019	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	10	lf			
03	0019	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with		
03	0019	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with		
03	0019	065	Fireproofmg Gray Spray Applied	ACM	90	lf			
03	0019	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	5	lf	assumed form drawing	R.R. - No Mention of Pipe Insulation	
03	0019	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	5	lf	assumed form drawing	R.R. - No Mention of Pipe Insulation	
20	0020	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	345	sf	Interior surface contaminated with SAF.		
20	0020	043	Floor Tile Gray	ACM	105	sf		Under carpet	
20	0020	044	Acoustic Tile White	ACM	105	sf			
20	0020	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
20	0020	065	Fireproofing Gray Spray Applied	ACM	105	lf			
20	0020	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
18	0021	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	9	lf			
18	0021	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	9	lf			
18	0021	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	20	sf	Interior surface contaminated with SAF.		
18	0021	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	60	sf	Interior surface contaminated with SAF.		
18	0021	065	Fireproofing Gray Spray Applied	ACM	25	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
18	0021	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	4	lf			
I8	0021	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
18	0021	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
22	0022	050	Acoustic Tile White	ACM	175	sf			
22	0022	065	Fireproofing Gray Spray Applied	ACM	145	lf			
22	0022	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
100	0101	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1600	sf	Interior surface contaminated with		
100	0101	043	Floor Tile Gray	ACM	1000	sf		760 sf Under carpet, 240 sf on floor	
100	0101	047	Mastic Brown Baseboard Mastic	ACM	175	sf			
100	0101	056	Fire Hose White		l	ea		Removed	
100	0101	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	93	sf			
103	0103	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	9	lf			
103	0103	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	9	lf			
103	0103	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	15	sf	Interior surface contaminated with	Removed	
103	0103	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	140	sf	Interior surface contaminated with	Removed	
103	0103	065	Fireproofing Gray Spray Applied	ABATED	15	lf		Removed	
103	0103	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	4	lf			
103	0103	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
103	0103	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
105	0105	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	1050	sf			
110	0110	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	95	sf		Abated	
110	0110	043	Floor Tile Gray	ACM	856	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
110	0110	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	355	sf	East wall, Interior surface contaminated		
110	0110	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	600	sf			
110-A	0110	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	125	sf			
110	0110	058	Sheet Rock White	NON-ACM	470	sf			
110-a	0110	058	Sheet Rock White	NON-ACM	550	sf			
110-B	0110	058	Sheet Rock White	NON-ACM	15	sf			
110-B	0110	058	Sheet Rock White	NON-ACM	95	sf			
110-C	0110	058	Sheet Rock White	NON-ACM	8	sf			
110-C	0110	058	Sheet Rock White	NON-ACM	50	sf			
110-D	0110	058	Sheet Rock White	NON-ACM	7	sf			
110-D	0110	058	Sheet Rock White	NON-ACM	45	sf			
110-E	0110	058	Sheet Rock White	NON-ACM	95	sf			
110-E	0110	058	Sheet Rock White	NON-ACM	15	sf			
110	0110	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
111	0111	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	180	sf			
111	0111	043	Floor Tile Gray	ACM	1116	sf		Quantity revised	
111	0111	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	875	sf	S & SE walls, Interior surface contaminated		
111	0111	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	790	sf			
111	0111	058	Sheet Rock White	NON-ACM	580	sf			
111-A	0111	058	Sheet Rock White	NON-ACM	15	sf			
111-A	0111	058	Sheet Rock White	NON-ACM	95	sf			
111	0111	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	3	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
112	0112	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	125	sf			
112	0112	043	Floor Tile Gray	ACM	680	sf			
112	0112	043	Floor Tile Gray	ACM	25	sf			
112	0112	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1140	sf	Interior surface contaminated with		
112	0112	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	600	sf			
112	0112	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
113	0113	043	Floor Tile Gray	ACM	185	sf			
113	0113	047	Mastic Brown Baseboard Mastic	ACM	48	sf			
113	0113	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	450	sf	Interior surface contaminated with SAF.		
113	0113	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	145	sf			
113	0113	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
114	0114	043	Floor Tile Gray	ACM	120	sf			
114	0114	047	Mastic Brown RasPboard Mastic	ACM	40	sf			
114	0114	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	355	sf	Interior surface contaminated with SAF.		
114	0114	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	90	sf			
114	0114	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
115	0115	043	Floor Tile Gray	ACM	75	sf			
115	0115	047	Mastic Brown Raceboard Mastic	ACM	32	sf			
115	0115	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	315	sf	Interior surface contaminated with SAF.		
115	0115	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	65	sf			
116	0116	043	Floor Tile Gray	ACM	85	sf			
116	0116	047	Mastic Brown Baseboard Mastic	ACM	31	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
116	0116	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
116	0116	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	70	sf			
116	0116	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
117	0117	043	Floor Tile Gray	ACM	8	sf			
117	0117	047	Mastic Brown Baseboard Mastic	ACM	9	sf			
117	0117	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	90	sf	Interior surface contaminated with SAF.		
117	0117	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	8	sf			
118	0118	043	Floor Tile Gray	ACM	65	sf		Under carpet	
118	0118	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
118	0118	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	270	sf	Interior surface contaminated with SAF.		
118	0118	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	45	sf			
118	0118	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
119	0119	043	Floor Tile Gray	ACM	95	sf		Under carpet	
119	0119	047	Mastic Brown Baseboard Mastic	ACM	33	sf			
119	0119	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with		
119	0119	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	75	sf			
120	0120	043	Floor Tile Gray	ACM	75	sf			
120	0120	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
120	0120	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	295	sf	Interior surface contaminated with SAF.		
120	0120	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	55	sf			
121	0121	043	Floor Tile Gray	ACM	85	sf			
121	0121	047	Mastic Brown Baseboard Mastic	ACM	34	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
121	0121	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	310	sf	Interior surface contaminated with SAF.		
121	0121	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	65	sf			
121	0121	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
122	0122	043	Floor Tile Gray	ACM	80	sf		Under carpet	
122	0122	047	Mastic Brown Baseboard Mastic	ACM	33	sf			
122	0122	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
122	0122	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	60	sf			
123	0123	043	Floor Tile Gray	ACM	75	sf		Under carpet	
123	0123	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
123	0123	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	310	sf	Interior surface contaminated with SAF.		
123	0123	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	55	sf			
124	0124	043	Floor Tile Gray	ACM	85	sf		Under carpet	
124	0124	047	Mastic Brown Baseboard Mastic	ACM	38	sf			
124	0124	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	350	sf	Interior surface contaminated with SAF.		
124	0124	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	65	sf			
124	0124	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
125	0125	043	Floor Tile Gray	ACM	85	sf		Under carpet	
125	0125	047	Mastic Brown Baseboard Mastic	ACM	38	sf			
125	0125	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	350	sf	Interior surface contaminated with SAF.		
125	0125	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	65	sf			
125	0125	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
126	0126	043	Floor Tile Gray	ACM	70	sf		Under carpet	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
126	0126	047	Mastic Brown Baseboard Mastic	ACM	30	sf			
126	0126	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	275	sf	Interior surface contaminated with SAF.		
126	0126	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	50	sf			
127	0127	043	Floor Tile Gray	ACM	100	sf		Under carpet	
127	0127	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
127	0127	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with SAF.		
127	0127	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	80	sf			
127	0127	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
128	0128	043	Floor Tile Gray	ACM	100	sf			
128	0128	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
128	0128	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with SAF.		
128	0128	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	80	sf			
129	0129	043	Floor Tile Gray	ACM	70	sf		Under carpet	
129	0129	047	Mastic Brown Baseboard Mastic	ACM	30	sf			
129	0129	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	275	sf	Interior surface contaminated with SAF.		
129	0129	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	50	sf			
127-A	0130	043	Floor Tile Gray	ACM	295	sf		Under carpet	
127-A	0130	047	Mastic Brown Baseboard Mastic	ACM	105	sf			
127-A	0130	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1100	sf	Interior surface contaminated with SAF.		
127-A	0130	057	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	230	sf			
131	0131	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1000	sf	Interior surface contaminated with SAF.		
131	0131	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	150	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
131	0131	043	Floor Tile Gray	ACM	15	sf			
131	0131	047	Mastic Brown Baseboard Mastic	ACM	10	sf			
200	0201	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1340	sf	Interior surface contaminated with SAF.		
200	0201	043	Floor Tile Gray	ACM	1209	sf			
200	0201	045	Acoustic Tile White with Wormhole Pattern	ACM	1209	sf			
200	0201	047	Mastic Brown RaqPboard Mastic	ACM	150	sf			
200	0201	056	Fire Hose White	ABATED	1 ea	sf		Renoved	
200	0201	065	Fireproofing Gray Spray Applied	ACM	1209	lf			
200	0201	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
200	0201	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	Assumed from drawing		
200	0201	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
200	0201	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
202	0202	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Consealed Columns/Beams	
204	0204	043	Floor Tile Gray	ACM	130	sf			
204	0204	044	Acoustic Tile White	ACM	130	sf			
204	0204	047	Mastic Brown Baseboard Mastic	ACM	43	sf			
204	0204	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	380	sf	Interior surface contaminated with SAF.		
204	0204	065	Fireproofing Gray Spray Applied	ACM	130	lf			
204	0204	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
205	0205	043	Floor Tile Gray	ACM	140	sf			
205	0205	044	Acoustic Tile White	ACM	140	sf			
205	0205	047	Mastic Brown Baseboard Mastic	ACM	44	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
205	0205	049	Dry Wall White (interior surface contaminated WI SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
205	0205	065	Fireproofing Gray Spray Applied	ACM	140	lf			
205	0205	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	35	lf			
205	0205	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	45	lf			
205	0205	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	14	lf	Assumed from Drawing		
206	0206	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	95	sf	Interior surface contaminated with SAF.		
206	0206	043	Floor Tile Gray	ACM	220	sf		Under Carpet	
206	0206	044	Acoustic Tile White	ACM	220	sf			
206	0206	047	Mastic Brown Baseboard Mastic	ACM	67	sf			
206	0206	049	thy Wall White (interior surface contaminated w/ SAF)	ACM	450	sf	Interior surface contaminated with SAF.		
206	0206	065	Fireproofing Gray Spray Applied	ACM	220	lf			
206	0206	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
206	0206	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
206	0206	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
206	0206	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
207	0207	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
207	0207	043	Floor Tile Gray	ABATED	200	sf		Under Carpet	Abated 2008, 004-094
207	0207	044	Acoustic Tile White	ACM	200	sf			
207	0207	047	Mastic Brown Baseboard Mastic	ABATED	54	sf			Abated
207	0207	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
207	0207	065	Fireproofing Gray Spray Applied	ACM	200	lf			
207	0207	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
207	0207	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
207	0207	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	Assumed from drawing		
207	0207	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
208	0208	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
208	0208	043	Floor Tile Gray	ACM	200	sf			
208	0208	044	Acoustic Tile White	ACM	200	sf			
208	0208	047	Mastic Brown Baseboard Mastic	ACM	54	sf		Sample white covebase Mastic	
208	0208	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
208	0208	065	Fireproofmg Gray Spray Applied	ACM	200	lf			
208	0208	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
208	0208	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
208	0208	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
208	0208	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
211-A	0209	042	Acoustic Tile White	ACM	285	sf			
211-A	0209	043	Floor Tile Gray	ACM	285	sf		Under carpet	
211-A	0209	047	Mastic Brown Baseboard Mastic	ACM	98	sf		Abated - White mastic	
211-A	0209	049	Thy Wall White (interior surface contaminated w/ SAF)	ACM	970	sf	Interior surface contaminated with SAF.		
211-A	0209	065	Fireproofing Gray Spray Applied	ACM	285	lf			
211-A	0209	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	Assumed from drawing		
211-A	0209	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
211-A	0209	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
211-A	0209	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
210	0210	043	Floor Tile Gray	ACM	90	sf			
210	0210	044	Acoustic Tile White	ACM	90	sf			
210	0210	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
210	0210	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
210	0210	065	Fireproofing Gray Spray Applied	ACM	90	lf			
211	0211	043	Floor Tile Gray	ACM	90	sf			
211	0211	044	Acoustic Tile White	ACM	90	sf			
211	0211	047	Mastic Brown BAcPboard Mastic	ACM	32	sf			
211	0211	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
211	0211	065	Fireproofing Gray Spray Applied	ACM	90	lf			
212	0212	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	125	sf	Interior surface contaminated with SAF.		
212	0212	043	Floor Tile Gray	ACM	175	sf			
212	0212	044	Acoustic Tile White	ACM	170	sf			
212	0212	047	Mastic Brown Baseboard Mastic	ACM	49	sf			
212	0212	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
212	0212	065	Fireproofing Gray Spray Applied	ACM	175	lf			
213	0213	043	Floor Tile Gray	ACM	80	sf		Under Carpet	
213	0213	044	Acoustic Tile White	ACM	80	sf	glued on		
213	0213	047	Mastic Brown Baseboard Mastic	ACM	33	sf		Abared - White mastic	
213	0213	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
213	0213	051	Mastic Brown Adhestive for HA No. 006	NON-ACM	25	sf			
213	0213	065	Fireproofmg Gray Spray Applied	ACM	80	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
213	0213	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
213	0213	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
214	0214	043	Floor Tile Gray	ACM	120	sf		Under carpet	
214	0214	044	Acoustic Tile White	ACM	120	sf	glued on		
214	0214	047	Mastic Brown Baseboard Mastic	ACM	32	sf		Abared - White mastic	
214	0214	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
214	0214	051	Mastic Brown Adhestive for HA No. 006	NON-ACM	40	sf			
214	0214	065	Fireproofing Gray Spray Applied	ACM	112	lf			
216	0216	051	Mastic Brown Adhestive for HA No. 006	NON-ACM	35	sf			
217	0217	043	Floor Tile Gray	ACM	208	sf		Under carpet	
217	0217	044	Acoustic Tile White	ACM	208	sf			
217	0217	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	465	sf	Interior surface contaminated with SAF.		
217	0217	065	Fireproofing Gray Spray Applied	ACM	200	lf			
217	0217	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf	assumed from sink		
217	0217	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
217	0217	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
217	0217	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	assumed sink feed		
217	0217	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
218	0218	043	Floor Tile Gray	ACM	189	sf			
218	0218	044	Acoustic Tile White	ACM	189	sf			
218	0218	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	474	sf	Interior surface contaminated with SAF.		
218	0218	065	Fireproofing Gray Spray Applied	ACM	205	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
219	0219	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	130	sf			
219	0219	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	50	sf			
219	0219	043	Floor Tile Gray	ACM	190	sf			
219	0219	044	Acoustic Tile White	ACM	190	sf			
219	0219	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	430	sf	Interior surface contaminated with SAF.		
219	0219	065	Fireproofing Gray Spray Applied	ACM	190	lf			
219	0219	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
219	0219	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
219	0219	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
219	0219	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
219	0219	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
220	0220	043	Floor Tile Gray	ACM	116	sf		Under carpet	
220	0220	044	Acoustic Tile White	ACM	116	sf			
220	0220	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
220	0220	065	Fireproofing Gray Spray Applied	ACM	190	lf			
220	0220	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
221	0221	043	Floor Tile Gray	ACM	122	sf		under carpet	
221	0221	044	Acoustic Tile White	ACM	122	sf			
221	0221	046	Floor Tile Green	ACM	4	sf			
221	0221	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
221	0221	065	Fireproofmg Gray Spray Applied	ACM	115	lf			
223	0223	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	120	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
223	0223	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	42	sf			
223	0223	043	Floor Tile Gray	ACM	160	sf			
223	0223	044	Acoustic Tile White	ACM	160	sf			
223	0223	049	Thy Wall White (interior surface contaminated w/ SAF)	ACM	320	sf	Interior surface contaminated with SAF.		
223	0223	065	Fireproofing Gray Spray Applied	ACM	160	lf			
223	0223	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
224	0224	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	50	sf			
224	0224	043	Floor Tile Gray	ACM	110	sf			
224	0224	044	Acoustic Tile White	ACM	110	sf			
224	0224	049	Thy Wall White (interior surface contaminated w/ SAF)	ACM	445	sf	Interior surface contaminated with SAF.		
224	0224	065	Fireproofmg Gray Spray Applied	ACM	100	lf			
224	0224	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
224	0224	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
225	0225	065	Fireproofing Gray Spray Applied	ACM	320	lf			
225-A	0225	065	Fireproofing Gray Spray Applied	ACM	0	lf		225 & 225A Same room Qty. 316 lf	
226	0226	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	36	sf			
226	0226	043	Floor Tile Gray	ACM	105	sf			
226	0226	044	Acoustic Tile White	ACM	105	sf			
226	0226	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
226	0226	065	Fireproofing Gray Spray Applied	ACM	105	lf			
226	0226	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
226	0226	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	10	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
227	0227	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	34	sf			
227	0227	043	Floor Tile Gray	ACM	100	sf			
227	0227	044	Acoustic Tile White	ACM	100	sf			
227	0227	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
227	0227	065	Fireproofing Gray Spray Applied	ACM	100	lf			
227	0227	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
227	0227	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
228	0228	043	Floor Tile Gray	ACM	190	sf			
228	0228	044	Acoustic Tile White	ACM	170	sf			
228	0228	047	Mastic Brown Baseboard Mastic	ABATED	70	sf		Removed, White mastic	
228	0228	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	550	sf	Interior surface contaminated with SAF.		
228	0228	065	Fireproofing Gray Spray Applied	ACM	190	lf			
229	0229	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	753	sf	Interior surface contaminated with SAF.		
229	0229	043	Floor Tile Gray	ABATED	462	sf	under carpet		Abated 2008, 004-094
229	0229	044	Acoustic Tile White	ACM	462	sf		2x2 Shot gun Pattern	
229	0229	065	Fireproofing Gray Spray Applied	ACM	460	lf			
229	0229	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf	assumed from drawing		
229	0229	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	assumed from drawing		
229	0229	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
229	0229	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	assumed from drawing		
229	0229	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
230	0230	043	Floor Tile Gray	ACM	95	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
230	0230	044	Acoustic Tile White	ABATED	110	sf			Abated
230	0230	047	Mastic Brown Baseboard Mastic	ACM	38	sf			
230	0230	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	358	sf	Interior surface contaminated with SAF.		
230	0230	052	Floor Tile White	ACM	15	sf			
230	0230	065	Fireproofing Gray Spray Applied	ACM	95	lf			
230	0230	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
231	0231	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	145	sf	Interior surface contaminated with SAF.		
231	0231	043	Floor Tile Gray	ACM	130	sf			
231	0231	044	Acoustic Tile White	ABATED	130	sf			Abated
231	0231	047	Mastic Brown Baseboard Mastic	ACM	47	sf			
231	0231	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	265	sf	Interior surface contaminated with SAF.		
231	0231	065	Fireproofing Gray Spray Applied	ACM	130	lf			
231	0231	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
231	0231	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	12	lf			
231	0231	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
232	0232	042	Acoustic Tile White	ABATED	200	sf			Abated
232	0232	043	Floor Tile Gray	ACM	200	sf			
232	0232	047	Mastic Brown Baseboard Mastic	ACM	69	sf			
232	0232	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	675	sf	Interior surface contaminated with SAF.		
232	0232	053	Acoustic Tile White with Random Holes & Rough Texture	ABATED	21	sf			Abated
232	0232	054	Acoustic Tile White with Worm Holes	ACM	21	sf			
232	0232	065	Fireproofing Gray Spray Applied	ACM	200	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
232	0232	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	100	lf			
232	0232	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	100	lf			
233	0233	043	Floor Tile Gray	ACM	95	sf			
233	0233	044	Acoustic Tile White	ABATED	95	sf			Abated
233	0233	047	Mastic Brown Baseboard Mastic	ACM	36	sf			
233	0233	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
233	0233	065	Fireproofing Gray Spray Applied	ACM	95	lf			
234	0234	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
234	0234	043	Floor Tile Gray	ACM	90	sf			
234	0234	044	Acoustic Tile White	ABATED	90	sf			Abated
234	0234	047	Mastic Brown Baseboard Mastic	ACM	36	sf			
234	0234	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	225	sf	Interior surface contaminated with SAF.		
234	0234	065	Fireproofing Gray Spray Applied	ACM	90	lf			
235	0235	042	Acoustic Tile White	ABATED	10	sf		Not present	
235	0235	043	Floor Tile Gray	ACM	95	sf			
235	0235	044	Acoustic Tile White	ABATED	90	sf		1x1 Spline	Abated
235	0235	047	Mastic Brown Baseboard Mastic	ABATED	36	sf		20% Brown & 80% White Mastic	
235	0235	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
235	0235	065	Fireproofing Gray Spray Applied	ACM	95	lf			
235	0235	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
236	0236	043	Floor Tile Gray	ACM	95	sf			
236	0236	044	Acoustic Tile White	ABATED	95	sf			Abated

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
236	0236	047	Mastic Brown Base board Mastic	ABATED	36	sf		White mastic	
236	0236	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
236	0236	065	Fireproofing Gray Spray Applied	ACM	95	lf			
236	0236	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
237	0237	043	Floor Tile Gray	ACM	110	sf			
237	0237	044	Acoustic Tile White	ABATED	110	sf			Abated
237	0237	047	Mastic Brown Baseboard Mastic	ACM	42	sf			
237	0237	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	385	sf	Interior surface contaminated with SAF.		
237	0237	065	Fireproofmg Gray Spray Applied	ACM	110	lf			
237	0237	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
237	0237	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	20	lf			
238	0238	043	Floor Tile Gray	ACM	110	sf			
238	0238	044	Acoustic Tile White	ABATED	110	sf			Abated
238	0238	047	Mastic Brown Baseboard Mastic	ACM	42	sf			
238	0238	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	385	sf	Interior surface contaminated with SAF.		
238	0238	065	Fireproofmg Gray Spray Applied	ACM	110	lf			
238	0238	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
239	0239	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.	No Access	
239	0239	044	Acoustic Tile White	ACM	85	sf		No Access	
239	0239	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.	No Access	
239	0239	065	Fireproofmg Gray Spray Applied	ACM	95	lf		No Access	
239	0239	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf		No Access	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
239	0239	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1 lf	lf		No Access	
240	0240	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with SAF.	No Access	
240	0240	044	Acoustic Tile White	ACM	110	sf		No Access	
240	0240	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	180	sf	Interior surface contaminated with SAF.	No Access	
240	0240	055	Transite Gray Lab Table,	ACM	40	sf		No Access	
240	0240	065	Fireproofing Gray Spray Applied	ACM	95	lf		No Access	
240	0240	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf		No Access	
240	0240	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf		No Access	
240	0240	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		No Access	
241	0241	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	152	sf	Interior surface contaminated with SAF.		
241	0241	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
241	0241	043	Floor Tile Gray	ABTATED	15	sf			Abated
241	0241	047	Mastic Brown Baseboard Mastic	ABATED	3	sf		Ceramic Baseboard	
241	0241	065	Fireproofing Gray Spray Applied	ACM	135	lf			
241	0241	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
241	0241	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	30	lf			
241	0241	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
241	0241	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
203	0242	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	9	lf			
203	0242	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	10	if			
203	0242	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	17	sf	Interior surface contaminated with SAF.		
203	0242	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	140	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
203	0242	065	Filey.uofmg Gray Spray Applied	ACM	17	lf			
203	0242	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	4	lf	Assumed from drawing		
203	0242	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
203	0242	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
300	0301	005	Low-pressure steam Pipe Run 4%8" White	ACM	13	lf			
300	0301	005	Low-pressure steam Pipe Run 4"-S" White	ACM	12	lf			
300	0301	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1530	sf	Interior surface contaminated with SAF.		
300	0301	043	Floor Tile Gray	ACM	1192	sf		Verify Quantity	
300	0301	045	Acoustic Tile White with Wormhole Pattern	ACM	1192	sf		Verify Quantity	
300	0301	047	Mastic Brown Baseboard Mastic	ACM	188	sf			
300	0301	065	Fireproofing Gray Spray Applied	ACM	615	lf			
300	0301	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	40	lf			
300	0301	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
300	0301	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	25	lf			
300	0301	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
303	0303	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	9	lf			
303	0303	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	9	lf			
303	0303	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	15	sf	Interior surface contaminated with SAF.		
303	0303	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	140	sf	Interior surface contaminated with SAF.		
303	0303	065	Fireproofing Gray Spray Applied	ACM	25	lf			
303	0303	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	4	lf			
303	0303	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
303	0303	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
305	0305	047	Mastic Brown Baseboard Mastic	ABATED	54	sf		Abated	
305	0305	048	Sheet Flooring White	ABATED	198	sf		Abated	
305	0305	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with SAF.		
305	0305	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	515	sf	Interior surface contaminated with SAF.		
306	0306	047	Mastic Brown Baseboard Mastic	ABATED	37	sf		Abated	
306	0306	048	Sheet Flooring White	ABATED	91	sf		Abated	
306	0306	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	90	sf	Interior surface contaminated with SAF.		
306	0306	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	360	sf	Interior surface contaminated with SAF.		
306	0306	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	assumed from drawing		
306	0306	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	assumed from drawing		
307	0307	047	Mastic Brown Baseboard Mastic	ABATED	38	sf		Abated	
307	0307	048	Sheet Flooring White	ABATED	102	sf		Abated	
307	0307	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	102	sf	Interior surface contaminated with SAF.		
307	0307	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	369	sf	Interior surface contaminated with SAF.		
307	0307	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	12	lf			
307	0307	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
308	0308	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
308	0308	043	Floor Tile Gray	ABATED	158	sf		Abated	
308	0308	044	Acoustic Tile White	ABATED	158	sf		Abated	
308	0308	047	Mastic Brown Baseboard Mastic	ABATED	50	sf		Abated	
308	0308	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	456	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
308	0308	065	Fireproofing Gray Spray Applied	ABATED	160	lf		Abated	
314-A	0310	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	12	lf		Abated	
314-A	0310	006	Low-pressure steam Pipe Fitting 4"-8" White	ABATED	6	ea		Abated	
314-A	0310	043	Floor Tile Gray	ABATED	296	sf		Abated	
314-A	0310	047	Mastic Brown Baseboard Mastic	ABATED	160	sf		Abated	
314-A	0310	048	Sheet Flooring White	ABATED	70	sf		Abated	
314-A	0310	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1134	sf	Interior surface contaminated with SAF.		
314-A	0310	065	Fireproofing Gray Spray Applied	ABATED	300	lf		Abated	
314-A	0310	067	Heating hot water Pipe Run 4%8" Black Mastic Wrap,	ABATED	10	lf	assumed from drawing	Abated	
314-A	0310	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	15	lf		Abated	
311	0311	043	Floor Tile Gray	ABATED	I 1 1	sf		Abated	
311	0311	044	Acoustic Tile White	ABATED	111	sf		Abated, New ceiling tile	
311	0311	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
311	0311	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
311	0311	065	Fireproofing Gray Spray Applied	ABATED	110	lf		Abated	
311	0311	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Duct tap covers the column top	
312	0312	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	13	lf		Abated	
312	0312	043	Floor Tile Gray	ABATED	111	sf		Abated	
312	0312	044	Acoustic Tile White	ABATED	111	sf		Abated	
312	0312	047	Mastic Brown Baseboard Mastic	ABATED	40 sf	sf		Abated	
312	0312	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
312	0312	065	Fireproofmg Gray Spray Applied	ABATED	110	lf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
312	0312	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	25	lf		Abated	
313	0313	043	Floor Tile Gray	ABATED	111	sf		Abated	
313	0313	044	Acoustic Tile White	ABATED	111	sf		Abated	
313	0313	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
313	0313	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
313	0313	065	Fireproofing Gray Spray Applied	ABATED	110	lf		Abated	
313	0313	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	30	lf	assumed from drawing	Abated	
314	0314	043	Floor Tile Gray	ABATED	111	sf		Abated	
314	0314	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
314	0314	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
314	0314	050	Acoustic Tile White	ABATED	111	sf		Abated	
314	0314	065	Fireproofing Gray Spray Applied	ABATED	110	lf		Abated	
315	0315	043	Floor Tile Gray	ABATED	115	sf		Abated	
315	0315	044	Acoustic Tile White	ABATED	115	sf		Abated	
315	0315	047	Mastic Brown Baseboard Mastic	ABATED	41	sf		Abated	
315	0315	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	375	sf	Interior surface contaminated with SAF.		
315	0315	065	Fireproofing Gray Spray Applied	ABATED	115	lf		Abated	
315	0315	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	12	lf		Abated	
315	0315	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ABATED	8	lf		Abated	
315	0315	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	8	lf		Abated	
315	0315	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
315	0315	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ABATED	10	lf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
315	0315	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	12	lf			
316	0316	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	20	lf		Abated	
316	0316	006	Low-pressure steam Pipe Fitting 4" to 8" White	ABATED	1	ea		Abated	
316	0316	043	Floor Tile Gray	ABATED	116	sf		Abated	
316	0316	044	Acoustic Tile White	ABATED	117	sf		Abated	
316	0316	047	Mastic Brown Baseboard Mastic	ABATED	41	sf		Abated	
316	0316	049	Dry Wall White (interior surface contaminated w/ SAF)	ABATED	375	sf		Abated	
316	0316	065	Fireproofing Gray Spray Applied	ABATED	120	lf		Abated	
316	0316	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	12	lf		Abated	
316	0316	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ABATED	20	lf		Abated	
316	0316	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	12	lf		Abated	
317	0317	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	17	lf		Abated	
317	0317	043	Floor Tile Gray	ABATED	237	sf		Abated	
317	0317	044	Acoustic Tile White	ABATED	237	sf		Abated	
317	0317	047	Mastic Brown Baseboard Mastic	ACM	56	sf		Removed	
317	0317	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	516	sf	Interior surface contaminated with SAF.		
317	0317	065	Fireproofing Gray Spray Applied	ABATED	235	lf		Abated	
317	0317	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	20	lf		Abated	
317	0317	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
317	0317	067	Heating hot water Pipe Run 4%8" Black Mastic Wrap,	ABATED	40	lf		Abated	
317	0317	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	40	lf		Abated	
317	0317	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ABATED	20	lf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
318	0318	043	Floor Tile Gray	ABATED	257	sf		Abated	
318	0318	044	Acoustic Tile White	ABATED	257	sf		Abated	
318	0318	047	Mastic Brown Baseboard Mastic	ABATED	62	sf		Abated	
318	0318	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	543	sf	Interior surface contaminated with SAF.		
318	0318	065	Fireproofing Gray Spray Applied	ABATED	255	lf		Abated	
318	0318	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ABATED	6	lf		Abated	
318	0318	067	Heating hot water Pipe Run 4%8" Black Mastic Wrap,	ABATED	30	lf		Abated	
318	0318	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
318	0318	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
319	0319	005	Low-pressure steam Pipe Run 4%8" White	ABATED	15	lf		Abated	
319	0319	043	Floor Tile Gray	ABATED	257	sf		Abated	
319	0319	044	Acoustic Tile White	ABATED	257	sf		Abated	
319	0319	047	Mastic Brown Flageboard Mastic	ABATED	62	sf		Abated	
319	0319	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	543	sf	Interior surface contaminated with SAF.		
319	0319	065	Fireproofing Gray Spray Applied	ABATED	260	lf		Abated	
319	0319	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	12	lf			
319	0319	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ABATED	30	lf		Abated	
319	0319	069	Cold domestic water Pipe Run 4"-8" Black Mastic • Wrap,	ACM	12	lf	assumed from drawing		
319	0319	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	12•	lf			
319	0319	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	I	lf			
320	0320	043	Floor Tile Gray	ABATED	111	sf		Abated	
320	0320	044	Acoustic Tile White	ABATED	111	sf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
320	0320	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
320	0320	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
320	0320	065	Fireproofmg Gray Spray Applied	ABATED	110	lf		Abated	
320	0320	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	assumed from drawing		
320	0320	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	assumed from drawing		
320	0320	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
321	0321	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	12	lf		Abated	
321	0321	043	Floor Tile Gray	ABATED	III	sf		Abated	
321	0321	044	Acoustic Tile White	ABATED	111	sf		Abated	
321	0321	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
321	0321	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
321	0321	065	Fireproofing Gray Spray Applied	ABATED	110	lf		Abated	
321	0321	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	25	lf		Abated	
322	0322	043	Floor Tile Gray	ABATED	111	sf		Abated	
322	0322	044	Acoustic Tile White	ABATED	Ill	sf		Abated	
322	0322	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
322	0322	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
322	0322	065	Fireproofing Gray Spray Applied	ABATED	110	lf		Abated	
322	0322	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	25	lf	assumed from drawing	Abated	
328-A	0324	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	6	lf		Abated	
328-A	0324	006	Low-pressure steam Pipe Fitting 4"-8" White	ABATED	5	ea		Abated	
328-A	0324	043	Floor Tile Gray	ABATED	286	sf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
328-A	0324	045	Acoustic Tile White with Wormhole Pattern	ABATED	286	sf	sound proofing	Abated	
328-A	0324	047	Mastic Brown RacPboard Mastic	ABATED	104	sf		Abated	
328-A	0324	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	993	sf	Interior surface contaminated with SAF.		
328-A	0324	065	Fireproofing Gray Spray Applied	ABATED	285	lf		Abated	
328-A	0324	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf	4 assiimed from drawing	Abated	
328-A	0324	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	10	lf		Abated	
325	0325	043	Floor Tile Gray	ABATED	102	sf		Abated	
325	0325	044	Acoustic Tile White	ABATED	102	sf		Abated	
325	0325	047	Mastic Brown Baseboard Mastic	ABATED	38	sf		Abated	
325	0325	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
325	0325	065	Fireproofing Gray Spray Applied	ABATED	100	lf		Abated	
326	0326	043	Floor Tile Gray	ABATED	102	sf		Abated	
326	0326	044	Acoustic Tile White	ABATED	102	sf		Abated	
326	0326	047	Mastic Brown Baseboard Mastic	ABATED	38	sf		Abated	
326	0326	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
326	0326	065	Fireproofing Gray Spray Applied	ABATED	100	lf		Abated	
327	0327	043	Floor Tile Gray	ABATED	102	sf		Abated	
327	0327	044	Acoustic Tile White	ABATED	102	sf		Abated	
327	0327	047	Mastic Brown Baseboard Mastic	ABATED	38	sf		Abated	
327	0327	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
327	0327	065	Fireproofing Gray Spray Applied	ABATED	100	lf		Abated	
328	0328	043	Floor Tile Gray	ABATED	102	sf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
328	0328	044	Acoustic Tile White	ABATED	102	sf		Abated	
328	0328	047	Mastic Brown Baseboard Mastic	ABATED	38	sf		Abated	
328	0328	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
328	0328	065	Fireproofing Gray Spray Applied	ABATED	100	lf		Abated	
329	0329	043	Floor Tile Gray	ABATED	73	sf		Abated	
329	0329	044	Acoustic Tile White	ABATED	73	sf		Abated	
329	0329	047	Mastic Brown Baseboard Mastic	ABATED	31	sf		Abated	
329	0329	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	285	sf	Interior surface contaminated with SAF.		
329	0329	065	Fireproofing Gray Spray Applied	ABATED	75	lf		Abated	
329	0329	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Abated	
330	0330	043	Floor Tile Gray	ABATED	94	sf		Abated	
330	0330	044	Acoustic Tile White	ABATED	94	sf		Abated	
330	0330	047	Mastic Brown Baseboard Mastic	ABATED	36	sf		Abated	
330	0330	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	309	sf	Interior surface contaminated with SAF.		
330	0330	065	Fireproofing Gray Spray Applied	ABATED	95	lf		Abated	
331	0331	043	Floor Tile Gray	ABATED	166	sf		Abated	
331	0331	044	Acoustic Tile White	ABATED	16	sf		Abated	
331	0331	047	Mastic Brown Baseboard Mastic	ABATED	53	sf		Abated	
331	0331	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	483	sf	Interior surface contaminated with SAF.		
331	0331	065	Fireproofing Gray Spray Applied	ABATED	165	lf		Abated	
331	0331	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	6	lf	Assumed from drawing		
331	0331	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed from drawing		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
333	0333	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	231	sf	Interior surface contaminated with SAF.		
333	0333	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	49	sf	Interior surface contaminated with SAF.		
333	0333	065	Fireproofing Gray Spray Applied	ACM	50	lf			
333	0333	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
334	0334	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	49	sf	Interior surface contaminated with SAF.		
334	0334	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	231	sf	Interior surface contaminated with SAF.		
334	0334	065	Fireproofing Gray Spray Applied	ACM	50	lf			
335	0335	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	312	sf	Interior surface contaminated with SAF.		
335	0335	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	78	sf	Interior surface contaminated with SAF.		
335	0335	065	Fireproofing Gray Spray Applied	ACM	90	lf			
335	0335	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
335	0335	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
335	0335	069	Cold domestic water Pipe Run 4"-S" Black Mastic . Wrap,	ACM	12	lf	Assumed from drawing		
335	0335	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
335	0335	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
336	0336	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	393	sf	Interior surface contaminated with SAF.		
336	0336	042	Acoustic Tile White	ACM	126	sf			
336	0336	065	Fireproofing Gray Spray Applied	ACM	130 If	lf			
336	0336	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
336	0336	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
336	0336	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
336	0336	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
336	0336	071	Chilled water supply Pipe Run 4"-8" Black	ACM	10	lf			
336	0336	072	Chilled water supply Pipe Fitting 4"-8" Black	ABATED	2	ea		Rubber Ftgs	
336	0336	073	Chilled water return Pipe Run 4%8" Black	ACM	10	lf			
336	0336	074	Chilled water return Pipe Fitting 4"-8" Black	ABATED	2	ea		Rubber Ftgs	
337	0337	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	369	sf	Interior surface contaminated with SAF.		
337	0337	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	118	sf	Interior surface contaminated with SAF.		
337	0337	065	Fireproofing Gray Spray Applied	ACM	140	lf			
337	0337	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
337	0337	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
337	0337	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	Assumed from drawing		
337	0337	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	30	lf	Assumed from drawing		
337	0337	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	Assumed from drawing		
337	0337	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
338	0338	005	Low-pressure steam Pipe Run 4"-8" White	ACM	22	lf			
338	0338	006	Low-pressure steam Pipe Fitting 4%8" White	ACM	1	ea			
338	0338	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	360	sf	Interior surface contaminated with SAF.		
338	0338	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	131	sf	Interior surface contaminated with SAF.		
338	0338	065	Fireproofing Gray Spray Applied	ACM	125	lf			
338	0338	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf	Assumed from drawing		
338	0338	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf	Assumed from drawing		
338	0338	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	Assumed from drawing		
338	0338	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	Assumed from drawing		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
338	0338	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
339	0339	005	Low-pressure steam Pipe Run 4%8" White	ACM	12	lf			
339	0339	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	5	ea			
339	0339	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	133	sf	Interior surface contaminated with SAF.		
339	0339	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	312	sf	Interior surface contaminated with SAF.		
339	0339	065	Fireproofmg Gray Spray Applied	ACM	80	lf			
339	0339	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
339	0339	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
339	0339	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
340	0340	005	Low-pressure steam Pipe Run 4%8" White	ACM	6	lf			
340	0340	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	5	ea			
340	0340	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	312	sf	Interior surface contaminated with SAF.		
340	0340	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	133	sf	Interior surface contaminated with SAF.		
340	0340	065	Fireproofing Gray Spray Applied	ACM	80	lf			
340	0340	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
340	0340	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
341	0341	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
341	0341	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	5 ea	ea			
341	0341	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
341	0341	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	59	sf	Interior surface contaminated with SAF.		
341	0341	065	Fireproofing Gray Spray Applied	ACM	55	lf			
342	0342	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	59	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
342	0342	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAY)	ACM	258	sf	Interior surface contaminated with SAF.		
342	0342	065	Fireproofmg Gray Spray Applied	ACM	55	lf			
342	0342	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
342	0342	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
343	0343	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
343	0343	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	59	sf	Interior surface contaminated with SAF.		
343	0343	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
343	0343	065	Fireproofing Gray Spray Applied	ACM	55	lf			
343	0343	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
343	0343	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
344	0344	005	Low-pressure steam Pipe Run 4"-8" White	ACM	15	lf			
344	0344	006	Low-pressure steam Pipe Fitting 4%8" White	ACM	5	ea	Assumed from Sink		
344	0344	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	555	sf	Interior surface contaminated with SAF.		
344	0344	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	220	sf	Interior surface contaminated with SAF.		
344	0344	065	Fireproofing Gray Spray Applied	ACM	210	lf			
344	0344	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
344	0344	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
344	0344	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
344	0344	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
344	0344	081	Sink Bottom undercoating	ACM	1	ea	Sample No. 5 (year 2020)		
345	0345	005	Low-pressure steam Pipe Run 4"-8" White	ACM	30	lf			
345	0345	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	1	ea			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
345	0345	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	645	sf	Interior surface contaminated with SAF.		
345	0345	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
345	0345	065	Fireproofing Gray Spray Applied	ACM	325	lf			
345	0345	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf	Assumed from Drawing		
345	0345	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf	Assumed from Drawing		
345	0345	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	50	lf			
345	0345	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	50	lf	Assumed from Drawing		
345	0345	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from Drawing		
345	0345	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
346	0346	043	Floor Tile Gray	ACM	286	sf		Tan SheetFlooring	Floor tile under sheet flooring
346	0346	047	Mastic Brown Baseboard Mastic	ABATED	67	sf		Abated	
346	0346	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	610	sf	Interior surface contaminated with SAF.		
346	0346	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	290	sf	Interior surface contaminated with SAF.		
346	0346	065	Fireproofing Gray Spray Applied	ACM	290	lf			
346	0346	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
346	0346	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
346	0346	079	Fireproofing Gray Spray Applied Steel Column Encasement, Gray	ACM	2	lf			
358	0347	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	141	sf	Interior surface contaminated with SAF.		
358	0347	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	537	sf	Interior surface contaminated with SAF.		
358	0347	043	Floor Tile Gray	ACM	15	sf			
358	0347	065	Fireproofing Gray Spray Applied	ACM	135	lf			
358	0347	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf	Assumed from Drawing		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
358	0347	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from Drawing		
311-A	0348	043	Floor Tile Gray	ABATED	12	sf		Abated	
311-A	0348	044	Acoustic Tile White	ABATED	12	sf		Abated	
311-A	0348	047	Mastic Brown Baseboard Mastic	ABATED	11	sf		Abated	
311-A	0348	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
311-A	0348	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	12	lf	assumed from drawing	Abated	
320-A	0349	043	Floor Tile Gray	ABATED	12 sf	sf		Abated	
320-A	0349	044	Acoustic Tile White	ABATED	12	sf		Abated	
320-A	0349	047	Mastic Brown Baseboard Mastic	ABATED	11	sf		Abated	
320-A	0349	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
320-A	0349	065	Fireproofing Gray Spray Applied	ABATED	10	lf		Abated	
403	0404	065	Fireproofing Gray Spray Applied	ACM	25	lf			
403	0404	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	**2**	lf			
405	0405	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	5	lf		Abated	
405	0405	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	6	If			
405	0405	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with SAF.		
405	0405	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	321	sf	Interior surface contaminated with SAF.		
406	0406	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	73	sf	Interior surface contaminated with SAF.		
406	0406	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with SAF.		
406	0406	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	285	sf	Interior surface contaminated with SAF.		
407	0407	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	465	sf	Interior surface contaminated with SAF.		
407	0407	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	162	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
407	0407	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink	Sink is Gone - New wall	
407	0407	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	6	lf	assumed from sink	Sink is Gone - New wall	
408	0408	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	6	lf		Drawing shows all abated	
408	0408	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
408	0408	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	107	sf	Interior surface contaminated with SAF.		
408	0408	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
408	0408	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
409	0409	005	Low-pressure steam Pipe Run 4%8" White	ACM	15	lf			
409	0409	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	390	sf	Interior surface contaminated with SAF.		
409	0409	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	687	sf	Interior surface contaminated with SAF.		
409	0409	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
409	0409	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
409	0409	079	Fireproofing Gray Spray Applied , *Steel* Column Encasement, Gray	ACM	1	lf			
410	0410	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	94	sf	Interior surface contaminated with SAF.	Drywall - not plaster	
410	0410	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
410	0410	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	20	lf		Abated	
410	0410	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
410	0410	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf		Abated	
410	0410	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
411	0411	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	59	sf	Interior surface contaminated with SAF.	Drywall - not plaster	
411	0411	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
412	0412	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	46	sf	Interior surface contaminated with SAF.	Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
412	0412	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	222	sf	Interior surface contaminated with SAF.		
413	0413	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	69	sf	Interior surface contaminated with SAF.	Abated	
413	0413	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	285	sf	Interior surface contaminated with SAF.		
413	0413	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
414	0414	005	Low-pressure steam Pipe Run 4%8" White	ABATED	10	lf		Abated	
414	0414	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	52	sf	Interior surface contaminated with SAF.	Abated	
414	0414	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
415	0415	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	52	sf	Interior surface contaminated with SAF.	Abated	
415	0415	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
416	0416	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	52	sf	Interior surface contaminated with SAF.	Abated	
416	0416	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
418	0418	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	10	lf		Abated	
418	0418	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
418	0418	044	Acoustic Tile White	ABATED	105	sf		Abated - 2x2 White shotgun ceiling tile	
418	0418	065	Fireproofing Gray Spray Applied	ABATED	105	lf		Abated	
418	0418	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	10	lf		Abated	
418	0418	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
418	0418	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf		Abated	
418	0418	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf		Abated	
418	0418	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	10	lf		Abated	
418	0418	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
418	0418	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ABATED	10	lf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
419	0419	005	Low-pressure steam Pipe Run 4%8" White	ABATED	15	lf		Abated	
419	0419	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	303	sf	Interior surface contaminated with SAF.		
419	0419	044	Acoustic Tile White	ABATED	77	sf		Abated	
419	0419	065	Fireproofing Gray Spray Applied	ABATED	80	lf		Abated	
419	0419	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	10	lf		Abated	
419	0419	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
419	0419	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	45	lf		Abated	
419	0419	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	30	lf		Abated	
419	0419	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	10	lf		Abated	
419	0419	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
419	0419	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ABATED	7	lf		Abated	
420	0420	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
420	0420	044	Acoustic Tile White	ABATED	98	sf		Abated	
420	0420	065	Fireproofing Gray Spray Applied	ABATED	100	lf		Abated	
420	0420	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ABATED	25	lf		Abated	
420	0420	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
421	0421	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	321	sf	Interior surface contaminated with SAF.	Abated	
421	0421	044	Acoustic Tile White	ABATED	84	sf		Abated	
421	0421	065	Fireproofing Gray Spray Applied	ABATED	85	lf		Abated	
421	0421	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ABATED	15	lf		Abated	
421	0421	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,,	ACM	10	lf			
421	0421	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
422	0422	005	Low-pressure steam Pipe Run 4%8" White	ABATED	10	lf		Abated	
422	0422	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	267	sf	Interior surface contaminated with SAF.		
422	0422	044	Acoustic Tile White	ABATED	64	sf		Abated - Plaster ceiling	
422	0422	065	Fireproofing Gray Spray Applied	ABATED	65	lf		Abated	
422	0422	067	Heating hot water Pipe Run 4%8" Black Mastic Wrap,	ABATED	20	lf	assumed from drawing	Abated	
424	0424	005	Low-pressure steam Pipe Run 4%8" White	ABATED	15	lf		Abated	
424	0424	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
424	0424	044	Acoustic Tile White	ABATED	220	sf		Abated	
424	0424	065	Fireproofing Gray Spray Applied	ABATED	220	lf		Abated	
427	0427	005	Low-pressure steam Pipe Run 4%8" White	ABATED	15	lf		Abated	
427	0427	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	357	sf	Interior surface contaminated with SAF.	Abated	
427	0427	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
427	0427	065	Fireproofing Gray Spray Applied	ABATED	220	lf		Abated	
428	0428	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	357	sf	Interior surface contaminated with SAF.	Abated	
428	0428	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
428	0428	065	Fireproofing Gray Spray Applied	ABATED	115	lf		Abated	
428	0428	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink		
428	0428	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf		Abated	
428	0428	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
429	0429	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	149	sf	Interior surface contaminated with SAF.	Abated	
429	0429	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	438	sf	Interior surface contaminated with SAF.		
429	0429	065	Fireproofing Gray Spray Applied	ABATED	150	lf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
429	0429	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	10	lf	assumed from drawing	Abated	
429	0429	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf	assumed from drawing		
429	0429	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing	Abated	
429	0429	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
429	0429	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ABATED	1	lf		Abated	
	429		Lab Counter Top	ACM	1	ea			Assumed ACM
430	0430	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ABATED	80	sf	Interior surface contaminated with SAF.	Abated	
430	0430	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	303	sf	Interior surface contaminated with SAF.		
430	0430	065	Fireproofing Gray Spray Applied	ABATED	80	lf		Abated	
430	0430	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	10	lf	assumed from drawing	Abated	
430	0430	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink		
430	0430	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	10	lf		Abated	
430	0430	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
431	0431	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	10	lf		Abated	
431	0431	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	657	sf	Interior surface contaminated with SAF.		
431	0431	045	Acoustic Tile White with Wormhole Pattern	ABATED	188	sf	sound proofing	Abated	
431	0431	065	Fireproofing Gray Spray Applied	ABATED	190	lf		Abated	
431	0431	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ABATED	5	lf		Abated	
431	0431	067	Heating hot water Pipe Run 4%8" Black Mastic Wrap,	ABATED	10	lf	assumed from drawing	Abated	
431	0431	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	10	lf		Abated	
431	0431	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	5	lf	assumed from drawing	Abated	
432	0432	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	204	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
432	0432	044	Acoustic Tile White	ABATED	39	sf		Abated (2X2 Warmhall pattern)	
432	0432	065	Fireproofing Gray Spray Applied	ABATED	40	lf		Abated	
432	0432	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,,	ABATED	5	lf		Abated	
432	0432	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
432	0432	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ABATED	1	lf		Abated	
	432		Lab Counter Top	ACM	1	ea			Assumed ACM
433	0433	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	204	sf	Interior surface contaminated with SAF.		
433	0433	044	Acoustic Tile White	ABATED	39	sf		Abated	
433	0433	065	Fireproofing Gray Spray Applied	ABATED	40	lf		Abated	
434	0434	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	445	sf	Interior surface contaminated with SAF.		
434	0434	044	Acoustic Tile White	ABATED	182	sf		Abated	
434	0434	065	Fireproofing Gray Spray Applied	ABATED	180	lf		Abated	
435	0435	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	342	sf	Interior surface contaminated with SAF.		
435	0435	044	Acoustic Tile White	ABATED	90	sf		Abated	
435	0435	065	Fireproofing Gray Spray Applied	ABATED	90	lf		Abated	
	435		Lab Counter Top	ACM	1	ea			Assumed ACM
436	0436	043	Floor Tile Gray	ACM	81	sf	Floor tile abated, Mastic present		
436	0436	044	Acoustic Tile White	ABATED	81	sf		Abated	
436	0436	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
436	0436	065	Fireproofing Gray Spray Applied	ABATED	80	lf		Abated	
	436		Lab Counter Top	ACM	1	ea			Assumed ACM
437	0437	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
437	0437	044	Acoustic Tile White	ABATED	59	sf		Abated	
437	0437	065	Fireproofing Gray Spray Applied	ABATED	60	lf		Abated	
437	0437	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
438	0438	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
438	0438	044	Acoustic Tile White	ABATED	59	sf			
438	0438	065	Fireproofmg Gray Spray Applied	ABATED	60	lf			
439	0439	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	378	sf	Interior surface contaminated with SAF.		
439	0439	044	Acoustic Tile White	ABATED	110	sf			
439	0439	065	Fireprooftng Gray Spray Applied	ABATED	110	lf			
441	0440	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	168	sf	Interior surface contaminated with SAF.		
441	0440	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	26	sf	Interior surface contaminated with SAF.		
440	0440	043	Floor Tile Gray	ACM	95	sf	Floor tile abated, Mastic present		
440	0440	044	Acoustic Tile White	ABATED	95	sf			
440	0440	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	350	sf	Interior surface contaminated with SAF.		
440	0440	065	Fireproofing Gray Spray Applied	ABATED	95	lf			
441	0440	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf	assumed from drawing		
442	0442	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	114	sf	Interior surface contaminated with SAF.		
442	0442	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	172	sf	Interior surface contaminated with SAF.		
442	0442	040	Sheet Flooring Tan	NON-ACM	114	sf			
442	0442	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	19	sf			
442	0442	065	Fireproofing Gray Spray Applied	ACM	100	lf			
442	0442	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
442	0442	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	15	lf			
442	0442	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
443	0443	005	Low-pressure steam Pipe Run 4"-8" White	ACM	5	lf			
443	0443	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	225	sf	Interior surface contaminated with SAF.		
443	0443	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	38	sf	Interior surface contaminated with SAF.		
443	0443	040	Sheet Flooring Tan	NON-ACM	38	sf			
443	0443	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	25	sf			
443	0443	065	Fireproofing Gray Spray Applied	ACM	50	lf			
443	0443	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	Assumed from sink		
443	0443	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
443	0443	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed sink feed		
443	0443	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf	assumed from drawing		
444	0444	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	270	sf	Interior surface contaminated with SAF.		
444	0444	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	54	sf	Interior surface contaminated with SAF.		
444	0444	040	Sheet Flooring Tan	NON-ACM	54	sf			
444	0444	065	Fireproofing Gray Spray Applied	ACM	70	lf			
444	0444	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
444	0444	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink		
444	0444	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	assumed from drawing		
444	0444	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
444	0444	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
444	0444	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed sink feed		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
445	0445	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	323	sf	Interior surface contaminated with SAF.	Mechanical Room	
445	0445	042	Acoustic Tile White	ACM	30	sf		Mechanical Room	
445	0445	065	Fireproofing Gray Spray Applied	ACM	85	lf		Mechanical Room	
445	0445	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	assumed from drawing	Mechanical Room	
445	0445	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	assumed from drawing	Mechanical Room	
445	0445	071	Chilled water supply Pipe Run 4"-8" Black	ACM	10	lf		Mechanical Room	
445	0445	072	Chilled water supply Pipe Fitting 4%8" Black	ACM	2	lf		Mechanical Room	
445	0445	073	Chilled water return Pipe Run 4%8" Black	ACM	10	lf		Mechanical Room	
445	0445	074	Chilled water return Pipe Fitting 4"-8" Black	ACM	1	lf		Mechanical Room	
445	0445	077	Tar Wrap Black Pipe Run,	NON-ACM	2	lf			
445	0445	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Mechanical Room	
446	0446	005	Low-pressure steam Pipe Run 4"-8" White	ACM	5	lf			
446	0446	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	234	sf	Interior surface contaminated with SAF.		
446	0446	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	35	sf	Interior surface contaminated with SAF.		
446	0446	065	Fireproofing Gray Spray Applied	ACM	50	lf			
447	0447	005	Low-pressure steam Pipe Run 4"-8" White	ACM	15	lf			
447	0447	065	Fireproofing Gray Spray Applied	ACM	100	lf			
447	0447	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
447	0447	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
448-A	0448	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	125	sf	Interior surface contaminated with SAF.		
448-A	0448	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with SAF.		
448-A	0448	065	Fireproofing Gray Spray Applied	ACM	100	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
448-A	0448	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
448-A	0448	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
449	0449	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
449	0449	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	306	sf	Interior surface contaminated with SAF.		
449	0449	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	77	sf	Interior surface contaminated with SAF.		
449	0449	065	Fireproofing Gray Spray Applied	ACM	85	lf			
449	0449	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
450	0450	005	Low-pressure steam Pipe Run 4%8" White	ACM	12	lf			
450	0450	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	67	sf	Interior surface contaminated with SAF.		
450	0450	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	281	sf	Interior surface contaminated with SAF.		
450	0450	065	Fireproofing Gray Spray Applied	ACM	70	lf			
450	0450	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
450	0450	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
451	0451	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	288	sf	Interior surface contaminated with SAF.		
451	0451	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	80	sf	Interior surface contaminated with SAF.		
451	0451	065	Fireproofing Gray Spray Applied	ACM	70	lf			
451	0451	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
452	0452	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
452	0452	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	67	sf	Interior surface contaminated with SAF.		
452	0452	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	281	sf	Interior surface contaminated with SAF.		
452	0452	065	Fireproofing Gray Spray Applied	ACM	65	lf			
452	0452	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
453	0453	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with SAF.		
453	0453	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	289	sf	Interior surface contaminated with SAF.		
453	0453	043	Floor Tile Gray	ACM	70	sf		Tan Sheet flooring pable pattern - Floor	
453	0453	065	Fireproofing Gray Spray Applied	ACM	70	lf			
453	0453	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
453	0453	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
454	0454	005	Low-pressure steam Pipe Run 4%8" White	ABATED	1	lf		Abated	
454	0454	005	Low-pressure steam Pipe Run 4"-8" White	ACM	15	lf			
454	0454	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	84	sf	Interior surface contaminated with SAF.		
454	0454	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	323	sf	Interior surface contaminated with SAF.		
454	0454	065	Fireproofing Gray Spray Applied	ACM	85	lf			
454	0454	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
454	0454	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
454	0454	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
441-B	0455	005	Low-pressure steam Pipe Run 4"-8" White	ACM	5	lf			
448	0455	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
441-A	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	58	sf	Interior surface contaminated with SAF.		
441-A	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	315	sf	Interior surface contaminated with SAF.		
441-B	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	24	sf	Interior surface contaminated with SAF.		
441-B	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.		
448	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.		
448	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	731	sf	Interior surface contaminated with SAF.		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
455	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	80	sf	Interior surface contaminated with SAF.		
455	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	289	sf	Interior surface contaminated with SAF.		
441-A	0455	065	Fireproofing Gray Spray Applied	ACM	75	lf			
441-B	0455	065	Fireproofmg Gray Spray Applied	ACM	35	lf			
448	0455	065	Fireproofing Gray Spray Applied	ACM	195	lf			
455	0455	065	Fireproofing Gray Spray Applied	ACM	3	lf			
441-B	0455	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
448	0455	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	45	lf			
441-A	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	assumed from drawing		
441-B	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
441-B	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
448	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
441-B	0455	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	assumed from drawing		
448	0455	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
441-A	0455	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	15	lf			
441-B	0455	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	5	lf			
448	0455	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	50	lf			
456	0456	005	Low-pressure steam Pipe Run 4%8" White	ACM	10	lf			
456	0456	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	50	sf	Interior surface contaminated with SAF.		
456	0456	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	255	sf	Interior surface contaminated with SAF.		
456	0456	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
457	0457	005	Low-pressure steam Pipe Run 4"-8" White	ACM	20	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
457	0457	005	Low-pressure steam Pipe Run 4%8" White	ACM	20	lf			
457	0457	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	323	sf	Interior surface contaminated with SAF.		
457	0457	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	84	sf	Interior surface contaminated with SAF.		
457	0457	065	Fireproofing Gray Spray Applied	ACM	85	lf			
457	0457	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	5	lf			
458	0458	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	131	sf	Interior surface contaminated with SAF.		
458	0458	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	424	sf	Interior surface contaminated with SAF.		
458	0458	043	Floor Tile Gray	ACM	18	sf			
458	0458	065	Fireproofing Gray Spray Applied	ACM	135	lf			
458	0458	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
458	0458	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
458	0458	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
458	0458	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	20	lf			
458	0458	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
460	0460	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	297	sf	Interior surface contaminated with SAF.		
460	0460	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	72	sf	Interior surface contaminated with SAF.		
460	0460	040	Sheet Flooring Tan	NON-ACM	72	sf			
460	0460	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	33	sf			
460	0460	065	Fireproofing Gray Spray Applied	ACM	60	lf			
460	0460	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	12	lf			
460	0460	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
460	0460	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
460	0460	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	assumed sink feed		
460	0460	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
460	0460	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	5	lf			
460	0460	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
461	0501	065	Fireproofing Gray Spray Applied	ACM	170	lf	I-beam		
461	0501	080	Floor mastic undrneath Gray floor covering	ACM	958	sf	Sample No. 1 (year 2020)		
461	0501	082	Shingle Black	NON-ACM	100	sf	Sample No. 4 (Year 2020)		
01-A	0001L	999	No Suspect Material	NON-ACM		sf			
24	0001S	999	No Suspect Material	NON-ACM	0	sf			
23	0002-S	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Room 23 - Stairwell with Fire door	
05-C	0005A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	230	sf	Interior surface contaminated with		
05-C	0005A	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ABATED	72	sf		Floor tile Nagetive Baseboard removed	
05	0005A	042	Acoustic Tile White	ABATED	25	sf			Abated 7-2021, 056-052
05-B	0005A	045	Acoustic Tile White with Wormhole Pattern	ABATED	10	sf			Abated 7-2021, 056-052
05-C	0005A	045	Acoustic Tile White with Wormhole Pattern	ABATED	30	sf			Abated 7-2021, 056-052
05	0005A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	60	sf	Interior surface contaminated with		
05-B	0005A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with		
05-C	0005A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	250	sf	Interior surface contaminated with		
05-C	0005A	059	Floor Tile White with Brown Streaks	NON-ACM	250	sf			
05	0005A	060	Acoustic Tile White with Random Holes & Rough Texture	ABATED	35	sf			Abated 7-2021, 056-052
05-B	0005A	060	Acoustic Tile White with Random Holes & Rough Texture	ABATED	140	sf			Abated 7-2021, 056-052
05-C	0005A	060	Acoustic Tile White with Random Holes & Rough Texture	ABATED	220	sf			Abated 7-2021, 056-052

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
05	0005A	065	Fireproofing Gray Spray Applied	ABATED	65	lf			Abated 7-2021, 056-052
05-B	0005A	065	Fireproofing Gray Spray Applied	ABATED	180	lf			Abated 7-2021, 056-052
05-C	0005A	065	Fireproofing Gray Spray Applied	ABATED	260	lf			Abated 7-2021, 056-052
05-A	0005B	044	Acoustic Tile White	ABATED	240	sf			Abated 7-2021, 056-052
05-A	0005B	065	Fireproofing Gray Spray Applied	ABATED	310	lf			Abated 7-2021, 056-052
11-A	0011A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with		
11-A	0011A	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	39	sf			
11-A	0011A	043	Floor Tile Gray	ACM	88	sf		11 A may have Floor tile u/n Concrete	
11-A	0011A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	170	sf	Interior surface contaminated with		
11-A	0011A	062	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	90	sf			
11-A	0011A	063	Fireproofing Gray Spray Applied, Treatment,	NON-ACM	110	If			
11-A	0011A	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
11-B	0011B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with		
11-C	0011B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	180	sf	Interior surface contaminated with		
11-B	0011B	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	39	sf			
11-A	0011B	043	Floor Tile Gray	ACM	65	sf		11 B may have Floor tile u/n Concrete	
11-B	0011B	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	170	sf	Interior surface contaminated with		
11-B	0011B	062	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	90	sf			
11-B	0011B	063	Fireproofing Gray Spray Applied, Treatment,	NON-ACM	1100	lf			
11-B	0011B	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
11-C	0011C	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	40	sf			
11-A	0011C	043	Floor Tile Gray	ACM	88	sf		11 C may have Floor tile u/n Concrete	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
11-C	0011C	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	110	sf	Interior surface contaminated with		
11-C	0011C	062	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	70	sf			
11-C	0011C	063	Fireproofing Gray Spray Applied, Treatment,	NON-ACM	90	If			
11-D	0011D	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	215	sf	Interior surface contaminated with		
11-D	0011D	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	39	sf			
11-D	0011D	043	Floor Tile Gray	ACM	90	sf		Not mentioned in previous record	Under carpet
11-D	0011D	062	Acoustic Tile White with Random Holes & Worm Holes	NON-ACM	50	sf			
11-D	0011D	063	Fireproofing Gray Spray Applied, Treatment,	NON-ACM	80	If			
100-B	0100A	999	No Suspect Material	NON-ACM	0	sf			
100-A	0101L	999	No Suspect Material	NON-ACM	0	sf			
101	0101S	999	No Suspect Material	NON-ACM	0	sf			
102	0102S	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
105	0105- 0104-0106	043	Floor Tile Gray	ABATED	1500	sf		Under carpet	Abated 2014, 004-207
105	0105- 0104-0106	047	Mastic Brown Baseboard Mastic	ABATED	151	sf			Abated 2014, 004-207
105	0105- 0104-0106	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1350	sf	Interior surface contaminated with		
105	0105- 0104-0106	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	3	lf			
200-B	0200A	999	No Suspect Material	NON-ACM	0	sf			
200-A	0201L	999	No Suspect Material	NON-ACM	0	sf			
201	0201S	999	No Suspect Material	NON-ACM	0	sf			
204-A	0204A	043	Floor Tile Gray	ACM	40	sf			
204-A	0204A	044	Acoustic Tile White	ACM	40	sf			
204-A	0204A	047	Mastic Brown Baseboard Mastic	ACM	24	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
204-A	0204A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with SAF.		
204-A	0204A	065	Fireproofing Gray Spray Applied	ACM	40	lf			
204-A	0204A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from Drawing		
204-A	0204A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from Drawing		
204-A	0204A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from Drawing		
204-A	0204A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from Drawing		
205-A	0205-A	043	Floor Tile Gray	ACM	40	sf			
205-A	0205-A	044	Acoustic Tile White	ACM	40	sf			
205-A	0205-A	047	Mastic Brown Baseboard Mastic	ACM	24	sf			
205-A	0205-A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with SAF.		
205-A	0205-A	065	Fireproofmg Gray Spray Applied	ACM	40	lf			
205-A	0205-A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from Drawing		
205-A	0205-A	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
205-A	0205-A	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf			
205-A	0205-A	069	Cold domestic water Pipe Run 4"-S" Black Mastic Wrap,	ACM	12	lf	Assumed from Drawing		
205-A	0205-A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed from Drawing		
216	0215-0216	043	Floor Tile Gray	ACM	112	sf		215/216 Has same HA as indicated in	
216	0215-0216	044	Acoustic Tile White	ACM	112	sf	glued on		
216	0215-0216	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
216	0215-0216	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	345	sf	Interior surface contaminated with SAF.		
216	0215-0216	065	Fireproofing Gray Spray Applied	ACM	110	lf			
227-A	0222-0222A	043	Floor Tile Gray	ACM	305	sf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
227-A	0222-0222A	045	Acoustic Tile White with Wormhole Pattern	ACM	305	sf			
227-A	0222-0222A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	504	sf	Interior surface contaminated with SAF.		
227-A	0222-0222A	065	Fireproofing Gray Spray Applied	ACM	275	lf			
227-A	0222-0222A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	5	lf			
227-A	0222-0222A	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf			
227-A	0222-0222A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf			
239-A	0239A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	20	sf	Interior surface contaminated with SAF.	No Access	
239-A	0239A	044	Acoustic Tile White	ACM	35	sf		No Access	
239-A	0239A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	195	sf	Interior surface contaminated with SAF.	No Access	
239-A	0239A	065	Fireproofing Gray Spray Applied	ACM	95	lf		No Access	
300-B	0300A	999	No Suspect Material	NON-ACM	0	sf			
300-A	0301L	999	No Suspect Material	NON-ACM	0	sf			
301	0301S	999	No Suspect Material	NON-ACM	0	sf			
302	0302-S	079	Fla ep oofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		302 - Stairwell	
309	0309-0304	043	Floor Tile Gray	ABATED	158	sf		Abated	
309	0309-0304	044	Acoustic Tile White	ABATED	158	sf		Abated	
309	0309-0304	047	Mastic Brown Baseboard Mastic	ABATED	50	sf		Abated	
309	0309-0304	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	456	sf	Interior surface contaminated with SAF.		
309	0309-0304	065	Fireproofmg Gray Spray Applied	ABATED	160	lf		Abated	
309	0309-0304	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf	assumed from sink		
309	0309-0304	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	20	lf	assumed from drawing	Abated	
309	0309-0304	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ABATED	10	lf	assumed sink feed	Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
323	0323-323A	043	Floor Tile Gray	ABATED	111	sf		Abated	
323	0323-323A	044	Acoustic Tile White	ABATED	111	sf		Abated	
323	0323-323A	047	Mastic Brown Baseboard Mastic	ABATED	40	sf		Abated	
323	0323-323A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
323	0323-323A	065	Fireproofmg Gray Spray Applied	ABATED	110	lf		Abated	
405-A	0400B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	45	sf	Interior surface contaminated with SAF.		
405-A	0400B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
405-A	0400B	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	200	lf		Hard ceiling	
406-A	0400C	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	5	lf		Assumed Abated	
406-A	0400C	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.		
406-A	0400C	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	64	sf	Interior surface contaminated with SAF.		
400-A	0401L	999	No Suspect Material	NON-ACM	0	sf			
401	0401S	999	No Suspect Material	NON-ACM	0	sf			
402	0402S	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
423	0423-0425	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAP)	ABATED	576	sf	Interior surface contaminated with SAF.	Abated	
423	0423-0425	044	Acoustic Tile White	ABATED	220	sf		Abated	
423	0423-0425	065	Fireproofing Gray Spray Applied	ABATED	220	lf		Abated	
423	0423-0425	068	Chilled water Pipe Run e-a" Black Mastic Wrap,	ABATED	20	lf		Abated	
423	0423-0425	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
426	0426-0417	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
426	0426-0417	065	Fireproofing Gray Spray Applied	ABATED	126	lf		Abated	
448-B	0448A	005	Low-pressure steam Pipe Run 4"-8" White	ABATED	6	lf		Abated	

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
448-B	0448A	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
448-B	0448A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	130	sf	Interior surface contaminated with SAF.		
448-B	0448A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	391	sf	Interior surface contaminated with SAF.		
448-B	0448A	065	Fireproofing Gray Spray Applied	ACM	100	lf			
448-B	0448A	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
448-B	0448A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
448-B	0448A	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
462	0503S	065	Fireproofing Gray Spray Applied	ACM	6	lf	SAF May be in column		
462	0503S	075	Refrigerant Pipe Run 4"-8" Black	ABATED	10	lf		Abated	
462	0503S	076	Tar Wrap White Pipe Run,	ABATED	2	lf		Abated	
C-11	11-C	034	Cold domestic water Pipe Run 4%8" Black Mastic Wrap	NON-ACM	12	If			
C-11	11-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	630	lf			
C-11	11-C	079	Fireproofing Gray Spray Applied, Steel Column Encasement, Gray	ACM	1	lf			
C-12	12-C	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	1	ea			
C-12	12-C	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	12	If			
C-12	12-C	035	Low-pressure steam Pipe Run 4"-8" White	ACM	12	lf			
C-12	12-C	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	**12**	llf			
C-12	12-C	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	24	lf			
C-12	12-C	036	Heating hot water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	24	If			
C-12	12-C	037	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	24	lf			
C-12	12-C	038	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
C-12	12-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	1140	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
C-13	13- C	078	Fireproofing Gray Spray Applied , Overspray	ACM	215	lf			
C-13	13-C	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	15	If			
C-13	13-C	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	12	If			
C-14	14-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	230	lf			
C-14	14-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-21	21-C	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	12	If			
C-21	21-C	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	12	lf			
C-21	21-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-21	21-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-22	22-C	005	Low-pressure steam Pipe Run 4"-8" White	ACM	12	lf			
C-22	22-C	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	1	ea			
C-22	22-C	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	24	If			
C-22	22-C	035	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,	NON-ACM	24	If			
C-22	22-C	036	Heating hot water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	24	lf			
C-22	22-C	037	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	24	lf			
C-22	22-C	038	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
C-22	22-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	1200	lf			
C-22	22-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
C-23	23-C	034	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap	NON-ACM	15	If			
C-23	23-C	035	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	NON-ACM	15	If			
C-23	23-C	078	Fireproofing Gray Spray Applied , Oveispiay	ACM	330	lf			
C-23	23-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
C-24	24-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	350	lf			
C-24	24-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-31	31-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	overspray (SAF HA 065)		
C-31	31-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	overspray		
C-31	31-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-31	31-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-32	32-C	005	Low-pressure steam Pipe Run 4"-8" White	ACM	12	lf			
C-32	32-C	006	Low-pressure steam Pipe Fitting 4%8" White	ACM	2	ea			
C-32	32-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf			
C-32	32-C	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
C-32	32-C	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	overspray		
C-32	32-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	overspray		
C-32	32-C	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	12	lf			
C-32	32-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-32	32-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-33	33-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	35	lf			
C-33	33-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	35	lf			
C-33	33-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-33	33-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-34	34-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf			
C-34	34-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	overspray		
C-34	34-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
C-34	34-C	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
400	401-402	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
400	401-402	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1440	sf	Interior surface contaminated with SAF.		
400	401-402	045	Acoustic Tile White with Wormhole Pattern	ACM	940	sf			
400	401-402	065	Fireproofing Gray Spray Applied	ACM	710	lf			
400	401-402	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
400	401-402	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from Drawing		
400	401-402	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	25	lf			
C-41	41-C	078	Fireproofing Gray Spray Applied , Ovcaspiay	ACM	310	lf			
C-41	41-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	11f	lf			
C-42	42-C	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
C-42	42-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
C-42	42-C	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
C-42	42-C	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	overspray		
C-42	42-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	overspray		
C-42	42-C	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	l5	lf			
C-42	42-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	480	lf			
C-43	43-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
C-43	43-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	300	lf			
C-44	44-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
C-44	44-C	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	15	lf	overspray		
C-44	44-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	700	lf			

Table 1 - ACM and Non-ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
C-44	44-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
ROOF	ROOF	080	Built-up Roof Built-up Root Gray & Black	NON-ACM	9300	sf			
ROOF	ROOF	081	Flashing Built-up Root Flashing, Gray & Black	NON-ACM	46	If			

Table -2 - Summary of ACM by Room Numbers

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
01	0001	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1500	sf	Interior surface contaminated with		
01	0001	043	Floor Tile Gray	ACM	890	sf			
01	0001	045	Acoustic Tile White with Wormhole Pattern	ACM	870	sf			South Hallway - Non-ACM ceiling tiles
01	0001	047	Mastic Brown Baseboard Mastic	ACM	165	sf			
01	0001	065	Fireproofmg Gray Spray Applied	ACM	450	lf			North Hall not abated
04	0004	044	Acoustic Tile White	ACM	45	sf		damaged & two missing	
04	0004	065	Fireproofmg Gray Spray Applied	ACM	70	lf			
04	0004	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	11	lf			
06	0006	050	Acoustic Tile White	ACM	230	sf			
06	0006	065	Fireproofing Gray Spray Applied	ACM	245	lf			
06	0006	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
08	0008	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	140	sf	Interior surface contaminated with		
08	0008	055	Transite Gray Lab Table,	ACM	50	sf			
08	0008	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	7	lf	assumed form drawing		
08	0008	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf	assumed form drawing		
08	0008	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed form drawing		
08	0008	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	7	lf	assumed form drawing		
08	0008	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
09	0009	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with		
09	0009	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
10-A	0010	061	Floor Tile Green with White & Black Stripes	ACM	65	sf		Room 10A is Part of Room 10	Residual tile and mastic present

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
10	0010	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
10	0010	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
10	0010	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
11	0011	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with		
11	0011	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	20	sf			
11	0011	043	Floor Tile Gray	ACM	65	sf		Not mentioned in previous record	
12	0012	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	230	sf	Interior surface contaminated with SAF.		
12	0012	043	Floor Tile Gray	ACM	380	sf			
12	0012	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	461	lf		Quantity revised	
13	0013	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	325	sf			
13	0013	043	Floor Tile Gray	ACM	110	sf		Under Carpet	
13	0013	044	Acoustic Tile White	ACM	110	sf			
13	0013	047	Mastic Brown Baseboard Mastic	ACM	31	sf			
13	0013	065	Fireproofing Gray Spray Applied	ACM	110	lf			
13	0013	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	8	lf	Assumed from drawing		
13	0013	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
13	0013	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	8	lf	Assumed from drawing		
13	0013	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
13	0013	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
14	0014	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	610	sf	Interior surface contaminated with SAF.		
14	0014	043	Floor Tile Gray	ACM	310	sf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
14	0014	044	Acoustic Tile White	ACM	310	sf			
14	0014	047	Mastic Brown Baseboard Mastic	ACM	67	sf		Room 14 - Possibly LEAD lining,, Volt,	
14	0014	065	Fireproofing Gray Spray Applied	ACM	310	lf			
15	0015	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
15	0015	043	Floor Tile Gray	ACM	295	sf		Under Carpet	
15	0015	044	Acoustic Tile White	ACM	280	sf			
15	0015	047	Mastic Brown Baseboard Mastic	ACM	57	sf			
15	0015	065	Fireproofing Gray Spray Applied	ACM	280	lf			
15	0015	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
15	0015	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
15	0015	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
15	0015	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
15	0015	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
16-A	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with SAF.		
17	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	35	sf	Interior surface contaminated with SAF.		
17	0017	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
16-A	0017	043	Floor Tile Gray	ACM	50	sf			
16-A	0017	047	Mastic Brown Baseboard Mastic	ACM	23	sf			
17	0017	065	Fireproofing Gray Spray Applied	ACM	100	lf			
17	0017	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
17	0017	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	15	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
17	0017	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
17	0017	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
03	0019	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with		
03	0019	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with		
03	0019	065	Fireproofmg Gray Spray Applied	ACM	90	lf			
03	0019	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	5	lf	assumed form drawing	R.R. - No Mention of Pipe Insulation	
03	0019	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	5	lf	assumed form drawing	R.R. - No Mention of Pipe Insulation	
20	0020	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	345	sf	Interior surface contaminated with SAF.		
20	0020	043	Floor Tile Gray	ACM	105	sf		Under carpet	
20	0020	044	Acoustic Tile White	ACM	105	sf			
20	0020	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
20	0020	065	Fireproofing Gray Spray Applied	ACM	105	lf			
20	0020	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
18	0021	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	20	sf	Interior surface contaminated with SAF.		
18	0021	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	60	sf	Interior surface contaminated with SAF.		
18	0021	065	Fireproofing Gray Spray Applied	ACM	25	lf			
18	0021	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	4	lf			
I8	0021	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
18	0021	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
22	0022	050	Acoustic Tile White	ACM	175	sf			
22	0022	065	Fireproofing Gray Spray Applied	ACM	145	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
22	0022	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
100	0101	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1600	sf	Interior surface contaminated with		
100	0101	043	Floor Tile Gray	ACM	1000	sf		760 sf Under carpet, 240 sf on floor	
100	0101	047	Mastic Brown Baseboard Mastic	ACM	175	sf			
103	0103	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	4	lf			
103	0103	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
103	0103	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
110	0110	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	95	sf		Abated	
110	0110	043	Floor Tile Gray	ACM	856	sf			
110	0110	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	355	sf	East wall, Interior surface contaminated		
110	0110	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
111	0111	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	180	sf			
111	0111	043	Floor Tile Gray	ACM	1116	sf		Quantity revised	
111	0111	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	875	sf	S & SE walls, Interior surface contaminated		
111	0111	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	3	lf			
112	0112	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	125	sf			
112	0112	043	Floor Tile Gray	ACM	680	sf			
112	0112	043	Floor Tile Gray	ACM	25	sf			
112	0112	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1140	sf	Interior surface contaminated with		
112	0112	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
113	0113	043	Floor Tile Gray	ACM	185	sf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
113	0113	047	Mastic Brown Baseboard Mastic	ACM	48	sf			
113	0113	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	450	sf	Interior surface contaminated with SAF.		
113	0113	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
114	0114	043	Floor Tile Gray	ACM	120	sf			
114	0114	047	Mastic Brown RasPboard Mastic	ACM	40	sf			
114	0114	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	355	sf	Interior surface contaminated with SAF.		
114	0114	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
115	0115	043	Floor Tile Gray	ACM	75	sf			
115	0115	047	Mastic Brown Raceboard Mastic	ACM	32	sf			
115	0115	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	315	sf	Interior surface contaminated with SAF.		
116	0116	043	Floor Tile Gray	ACM	85	sf			
116	0116	047	Mastic Brown Baseboard Mastic	ACM	31	sf			
116	0116	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
116	0116	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
117	0117	043	Floor Tile Gray	ACM	8	sf			
117	0117	047	Mastic Brown Baseboard Mastic	ACM	9	sf			
117	0117	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	90	sf	Interior surface contaminated with SAF.		
118	0118	043	Floor Tile Gray	ACM	65	sf		Under carpet	
118	0118	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
118	0118	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	270	sf	Interior surface contaminated with SAF.		
118	0118	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
119	0119	043	Floor Tile Gray	ACM	95	sf		Under carpet	
119	0119	047	Mastic Brown Baseboard Mastic	ACM	33	sf			
119	0119	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with		
120	0120	043	Floor Tile Gray	ACM	75	sf			
120	0120	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
120	0120	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	295	sf	Interior surface contaminated with SAF.		
121	0121	043	Floor Tile Gray	ACM	85	sf			
121	0121	047	Mastic Brown Baseboard Mastic	ACM	34	sf			
121	0121	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	310	sf	Interior surface contaminated with SAF.		
121	0121	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
122	0122	043	Floor Tile Gray	ACM	80	sf		Under carpet	
122	0122	047	Mastic Brown Baseboard Mastic	ACM	33	sf			
122	0122	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
123	0123	043	Floor Tile Gray	ACM	75	sf		Under carpet	
123	0123	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
123	0123	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	310	sf	Interior surface contaminated with SAF.		
124	0124	043	Floor Tile Gray	ACM	85	sf		Under carpet	
124	0124	047	Mastic Brown Baseboard Mastic	ACM	38	sf			
124	0124	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	350	sf	Interior surface contaminated with SAF.		
124	0124	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
125	0125	043	Floor Tile Gray	ACM	85	sf		Under carpet	

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
125	0125	047	Mastic Brown Baseboard Mastic	ACM	38	sf			
125	0125	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	350	sf	Interior surface contaminated with SAF.		
125	0125	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
126	0126	043	Floor Tile Gray	ACM	70	sf		Under carpet	
126	0126	047	Mastic Brown Baseboard Mastic	ACM	30	sf			
126	0126	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	275	sf	Interior surface contaminated with SAF.		
127	0127	043	Floor Tile Gray	ACM	100	sf		Under carpet	
127	0127	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
127	0127	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with SAF.		
127	0127	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
128	0128	043	Floor Tile Gray	ACM	100	sf			
128	0128	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
128	0128	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with SAF.		
129	0129	043	Floor Tile Gray	ACM	70	sf		Under carpet	
129	0129	047	Mastic Brown Baseboard Mastic	ACM	30	sf			
129	0129	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	275	sf	Interior surface contaminated with SAF.		
127-A	0130	043	Floor Tile Gray	ACM	295	sf		Under carpet	
127-A	0130	047	Mastic Brown Baseboard Mastic	ACM	105	sf			
127-A	0130	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1100	sf	Interior surface contaminated with SAF.		
131	0131	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1000	sf	Interior surface contaminated with SAF.		
131	0131	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	150	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
131	0131	043	Floor Tile Gray	ACM	15	sf			
131	0131	047	Mastic Brown Baseboard Mastic	ACM	10	sf			
200	0201	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1340	sf	Interior surface contaminated with SAF.		
200	0201	043	Floor Tile Gray	ACM	1209	sf			
200	0201	045	Acoustic Tile White with Wormhole Pattern	ACM	1209	sf			
200	0201	047	Mastic Brown RaqPboard Mastic	ACM	150	sf			
200	0201	065	Fireproofing Gray Spray Applied	ACM	1209	lf			
200	0201	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
200	0201	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	Assumed from drawing		
200	0201	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
200	0201	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
202	0202	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Consealed Columns/Beams	
204	0204	043	Floor Tile Gray	ACM	130	sf			
204	0204	044	Acoustic Tile White	ACM	130	sf			
204	0204	047	Mastic Brown Baseboard Mastic	ACM	43	sf			
204	0204	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	380	sf	Interior surface contaminated with SAF.		
204	0204	065	Fireproofing Gray Spray Applied	ACM	130	lf			
204	0204	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
205	0205	043	Floor Tile Gray	ACM	140	sf			
205	0205	044	Acoustic Tile White	ACM	140	sf			
205	0205	047	Mastic Brown Baseboard Mastic	ACM	44	sf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
205	0205	049	Dry Wall White (interior surface contaminated WI SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
205	0205	065	Fireproofing Gray Spray Applied	ACM	140	lf			
205	0205	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	35	lf			
205	0205	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	45	lf			
205	0205	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	14	lf	Assumed from Drawing		
206	0206	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	95	sf	Interior surface contaminated with SAF.		
206	0206	043	Floor Tile Gray	ACM	220	sf		Under Carpet	
206	0206	044	Acoustic Tile White	ACM	220	sf			
206	0206	047	Mastic Brown Baseboard Mastic	ACM	67	sf			
206	0206	049	thy Wall White (interior surface contaminated w/ SAF)	ACM	450	sf	Interior surface contaminated with SAF.		
206	0206	065	Fireproofing Gray Spray Applied	ACM	220	lf			
206	0206	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
206	0206	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
206	0206	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
206	0206	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
207	0207	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
207	0207	044	Acoustic Tile White	ACM	200	sf			
207	0207	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
207	0207	065	Fireproofing Gray Spray Applied	ACM	200	lf			
207	0207	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
207	0207	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
207	0207	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	Assumed from drawing		
207	0207	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
208	0208	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
208	0208	043	Floor Tile Gray	ACM	200	sf			
208	0208	044	Acoustic Tile White	ACM	200	sf			
208	0208	047	Mastic Brown Baseboard Mastic	ACM	54	sf		Sample white covebase Mastic	
208	0208	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
208	0208	065	Fireproofmg Gray Spray Applied	ACM	200	lf			
208	0208	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
208	0208	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
208	0208	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
208	0208	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
211-A	0209	042	Acoustic Tile White	ACM	285	sf			
211-A	0209	043	Floor Tile Gray	ACM	285	sf		Under carpet	
211-A	0209	047	Mastic Brown Baseboard Mastic	ACM	98	sf		Abated - White mastic	
211-A	0209	049	Thy Wall White (interior surface contaminated w/ SAF)	ACM	970	sf	Interior surface contaminated with SAF.		
211-A	0209	065	Fireproofing Gray Spray Applied	ACM	285	lf			
211-A	0209	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	Assumed from drawing		
211-A	0209	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
211-A	0209	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
211-A	0209	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
210	0210	043	Floor Tile Gray	ACM	90	sf			
210	0210	044	Acoustic Tile White	ACM	90	sf			
210	0210	047	Mastic Brown Baseboard Mastic	ACM	32	sf			
210	0210	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
210	0210	065	Fireproofing Gray Spray Applied	ACM	90	lf			
211	0211	043	Floor Tile Gray	ACM	90	sf			
211	0211	044	Acoustic Tile White	ACM	90	sf			
211	0211	047	Mastic Brown BAcPboard Mastic	ACM	32	sf			
211	0211	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
211	0211	065	Fireproofing Gray Spray Applied	ACM	90	lf			
212	0212	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	125	sf	Interior surface contaminated with SAF.		
212	0212	043	Floor Tile Gray	ACM	175	sf			
212	0212	044	Acoustic Tile White	ACM	170	sf			
212	0212	047	Mastic Brown Baseboard Mastic	ACM	49	sf			
212	0212	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
212	0212	065	Fireproofing Gray Spray Applied	ACM	175	lf			
213	0213	043	Floor Tile Gray	ACM	80	sf		Under Carpet	
213	0213	044	Acoustic Tile White	ACM	80	sf	glued on		
213	0213	047	Mastic Brown Baseboard Mastic	ACM	33	sf		Abared - White mastic	
213	0213	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
213	0213	065	Fireproofmg Gray Spray Applied	ACM	80	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
213	0213	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
213	0213	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
214	0214	043	Floor Tile Gray	ACM	120	sf		Under carpet	
214	0214	044	Acoustic Tile White	ACM	120	sf	glued on		
214	0214	047	Mastic Brown Baseboard Mastic	ACM	32	sf		Abared - White mastic	
214	0214	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
214	0214	065	Fireproofing Gray Spray Applied	ACM	112	lf			
217	0217	043	Floor Tile Gray	ACM	208	sf		Under carpet	
217	0217	044	Acoustic Tile White	ACM	208	sf			
217	0217	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	465	sf	Interior surface contaminated with SAF.		
217	0217	065	Fireproofing Gray Spray Applied	ACM	200	lf			
217	0217	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf	assumed from sink		
217	0217	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
217	0217	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
217	0217	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	assumed sink feed		
217	0217	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
218	0218	043	Floor Tile Gray	ACM	189	sf			
218	0218	044	Acoustic Tile White	ACM	189	sf			
218	0218	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	474	sf	Interior surface contaminated with SAF.		
218	0218	065	Fireproofing Gray Spray Applied	ACM	205	lf			
219	0219	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	130	sf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
219	0219	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	50	sf			
219	0219	043	Floor Tile Gray	ACM	190	sf			
219	0219	044	Acoustic Tile White	ACM	190	sf			
219	0219	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	430	sf	Interior surface contaminated with SAF.		
219	0219	065	Fireproofing Gray Spray Applied	ACM	190	lf			
219	0219	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
219	0219	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
219	0219	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
219	0219	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
219	0219	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
220	0220	043	Floor Tile Gray	ACM	116	sf		Under carpet	
220	0220	044	Acoustic Tile White	ACM	116	sf			
220	0220	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
220	0220	065	Fireproofing Gray Spray Applied	ACM	190	lf			
220	0220	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
221	0221	043	Floor Tile Gray	ACM	122	sf		under carpet	
221	0221	044	Acoustic Tile White	ACM	122	sf			
221	0221	046	Floor Tile Green	ACM	4	sf			
221	0221	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
221	0221	065	Fireproofmg Gray Spray Applied	ACM	115	lf			
223	0223	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	120	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
223	0223	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	42	sf			
223	0223	043	Floor Tile Gray	ACM	160	sf			
223	0223	044	Acoustic Tile White	ACM	160	sf			
223	0223	049	Thy Wall White (interior surface contaminated w/ SAF)	ACM	320	sf	Interior surface contaminated with SAF.		
223	0223	065	Fireproofing Gray Spray Applied	ACM	160	lf			
223	0223	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
224	0224	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	50	sf			
224	0224	043	Floor Tile Gray	ACM	110	sf			
224	0224	044	Acoustic Tile White	ACM	110	sf			
224	0224	049	Thy Wall White (interior surface contaminated w/ SAF)	ACM	445	sf	Interior surface contaminated with SAF.		
224	0224	065	Fireproofmg Gray Spray Applied	ACM	100	lf			
224	0224	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
224	0224	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
225	0225	065	Fireproofing Gray Spray Applied	ACM	320	lf			
225-A	0225	065	Fireproofing Gray Spray Applied	ACM	0	lf		225 & 225A Same room Qty. 316 lf	
226	0226	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	36	sf			
226	0226	043	Floor Tile Gray	ACM	105	sf			
226	0226	044	Acoustic Tile White	ACM	105	sf			
226	0226	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
226	0226	065	Fireproofing Gray Spray Applied	ACM	105	lf			
226	0226	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
226	0226	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	10	lf			
227	0227	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	34	sf			
227	0227	043	Floor Tile Gray	ACM	100	sf			
227	0227	044	Acoustic Tile White	ACM	100	sf			
227	0227	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	300	sf	Interior surface contaminated with SAF.		
227	0227	065	Fireproofing Gray Spray Applied	ACM	100	lf			
227	0227	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
227	0227	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
228	0228	043	Floor Tile Gray	ACM	190	sf			
228	0228	044	Acoustic Tile White	ACM	170	sf			
228	0228	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	550	sf	Interior surface contaminated with SAF.		
228	0228	065	Fireproofing Gray Spray Applied	ACM	190	lf			
229	0229	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	753	sf	Interior surface contaminated with SAF.		
229	0229	044	Acoustic Tile White	ACM	462	sf		2x2 Shot gun Pattern	
229	0229	065	Fireproofing Gray Spray Applied	ACM	460	lf			
229	0229	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf	assumed from drawing		
229	0229	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	assumed from drawing		
229	0229	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
229	0229	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	assumed from drawing		
229	0229	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
230	0230	043	Floor Tile Gray	ACM	95	sf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
230	0230	047	Mastic Brown Baseboard Mastic	ACM	38	sf			
230	0230	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	358	sf	Interior surface contaminated with SAF.		
230	0230	052	Floor Tile White	ACM	15	sf			
230	0230	065	Fireproofing Gray Spray Applied	ACM	95	lf			
230	0230	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
231	0231	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	145	sf	Interior surface contaminated with SAF.		
231	0231	043	Floor Tile Gray	ACM	130	sf			
231	0231	047	Mastic Brown Baseboard Mastic	ACM	47	sf			
231	0231	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	265	sf	Interior surface contaminated with SAF.		
231	0231	065	Fireproofing Gray Spray Applied	ACM	130	lf			
231	0231	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf			
231	0231	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	12	lf			
231	0231	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
232	0232	043	Floor Tile Gray	ACM	200	sf			
232	0232	047	Mastic Brown Baseboard Mastic	ACM	69	sf			
232	0232	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	675	sf	Interior surface contaminated with SAF.		
232	0232	054	Acoustic Tile White with Worm Holes	ACM	21	sf			
232	0232	065	Fireproofing Gray Spray Applied	ACM	200	lf			
232	0232	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	100	lf			
232	0232	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	100	lf			
233	0233	043	Floor Tile Gray	ACM	95	sf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
233	0233	047	Mastic Brown Baseboard Mastic	ACM	36	sf			
233	0233	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
233	0233	065	Fireproofing Gray Spray Applied	ACM	95	lf			
234	0234	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
234	0234	043	Floor Tile Gray	ACM	90	sf			
234	0234	047	Mastic Brown Baseboard Mastic	ACM	36	sf			
234	0234	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	225	sf	Interior surface contaminated with SAF.		
234	0234	065	Fireproofing Gray Spray Applied	ACM	90	lf			
235	0235	043	Floor Tile Gray	ACM	95	sf			
235	0235	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
235	0235	065	Fireproofing Gray Spray Applied	ACM	95	lf			
235	0235	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
236	0236	043	Floor Tile Gray	ACM	95	sf			
236	0236	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
236	0236	065	Fireproofing Gray Spray Applied	ACM	95	lf			
236	0236	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
237	0237	043	Floor Tile Gray	ACM	110	sf			
237	0237	047	Mastic Brown Baseboard Mastic	ACM	42	sf			
237	0237	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	385	sf	Interior surface contaminated with SAF.		
237	0237	065	Fireproofmg Gray Spray Applied	ACM	110	lf			
237	0237	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
237	0237	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	20	lf			
238	0238	043	Floor Tile Gray	ACM	110	sf			
238	0238	047	Mastic Brown Baseboard Mastic	ACM	42	sf			
238	0238	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	385	sf	Interior surface contaminated with SAF.		
238	0238	065	Fireproofmg Gray Spray Applied	ACM	110	lf			
238	0238	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
239	0239	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.	No Access	
239	0239	044	Acoustic Tile White	ACM	85	sf		No Access	
239	0239	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.	No Access	
239	0239	065	Fireproofmg Gray Spray Applied	ACM	95	lf		No Access	
239	0239	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf		No Access	
239	0239	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1 lf	lf		No Access	
240	0240	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with SAF.	No Access	
240	0240	044	Acoustic Tile White	ACM	110	sf		No Access	
240	0240	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	180	sf	Interior surface contaminated with SAF.	No Access	
240	0240	055	Transite Gray Lab Table,	ACM	40	sf		No Access	
240	0240	065	Fireproofing Gray Spray Applied	ACM	95	lf		No Access	
240	0240	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf		No Access	
240	0240	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf		No Access	
240	0240	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		No Access	
241	0241	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	152	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
241	0241	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	370	sf	Interior surface contaminated with SAF.		
241	0241	065	Fireproofing Gray Spray Applied	ACM	135	lf			
241	0241	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
241	0241	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	30	lf			
241	0241	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
241	0241	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
203	0242	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	17	sf	Interior surface contaminated with SAF.		
203	0242	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	140	sf	Interior surface contaminated with SAF.		
203	0242	065	Filey.uofmg Gray Spray Applied	ACM	17	lf			
203	0242	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	4	lf	Assumed from drawing		
203	0242	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
203	0242	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
300	0301	005	Low-pressure steam Pipe Run 4%8" White	ACM	13	lf			
300	0301	005	Low-pressure steam Pipe Run 4"-S" White	ACM	12	lf			
300	0301	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1530	sf	Interior surface contaminated with SAF.		
300	0301	043	Floor Tile Gray	ACM	1192	sf		Verify Quantity	
300	0301	045	Acoustic Tile White with Wormhole Pattern	ACM	1192	sf		Verify Quantity	
300	0301	047	Mastic Brown Baseboard Mastic	ACM	188	sf			
300	0301	065	Fireproofing Gray Spray Applied	ACM	615	lf			
300	0301	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	40	lf			
300	0301	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
300	0301	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	25	lf			
300	0301	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
303	0303	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	15	sf	Interior surface contaminated with SAF.		
303	0303	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	140	sf	Interior surface contaminated with SAF.		
303	0303	065	Fireproofing Gray Spray Applied	ACM	25	lf			
303	0303	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	4	lf			
303	0303	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	4	lf			
303	0303	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
305	0305	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	200	sf	Interior surface contaminated with SAF.		
305	0305	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	515	sf	Interior surface contaminated with SAF.		
306	0306	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	90	sf	Interior surface contaminated with SAF.		
306	0306	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	360	sf	Interior surface contaminated with SAF.		
306	0306	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	assumed from drawing		
306	0306	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	assumed from drawing		
307	0307	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	102	sf	Interior surface contaminated with SAF.		
307	0307	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	369	sf	Interior surface contaminated with SAF.		
307	0307	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	12	lf			
307	0307	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
308	0308	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
308	0308	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	456	sf	Interior surface contaminated with SAF.		
314-A	0310	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1134	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
311	0311	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
311	0311	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Duct tap covers the column top	
312	0312	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
313	0313	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
314	0314	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
315	0315	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	375	sf	Interior surface contaminated with SAF.		
315	0315	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
315	0315	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	12	lf			
317	0317	047	Mastic Brown Baseboard Mastic	ACM	56	sf		Removed	
317	0317	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	516	sf	Interior surface contaminated with SAF.		
317	0317	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
318	0318	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	543	sf	Interior surface contaminated with SAF.		
318	0318	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
318	0318	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
319	0319	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	543	sf	Interior surface contaminated with SAF.		
319	0319	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	12	lf			
319	0319	069	Cold domestic water Pipe Run 4"-8" Black Mastic • Wrap,	ACM	12	lf	assumed from drawing		
319	0319	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	12•	lf			
319	0319	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	I	lf			
320	0320	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
320	0320	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	assumed from drawing		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
320	0320	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	assumed from drawing		
320	0320	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
321	0321	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
322	0322	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
328-A	0324	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	993	sf	Interior surface contaminated with SAF.		
325	0325	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
326	0326	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
327	0327	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
328	0328	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
329	0329	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	285	sf	Interior surface contaminated with SAF.		
329	0329	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Abated	
330	0330	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	309	sf	Interior surface contaminated with SAF.		
331	0331	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	483	sf	Interior surface contaminated with SAF.		
331	0331	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	6	lf	Assumed from drawing		
331	0331	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed from drawing		
333	0333	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	231	sf	Interior surface contaminated with SAF.		
333	0333	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	49	sf	Interior surface contaminated with SAF.		
333	0333	065	Fireproofing Gray Spray Applied	ACM	50	lf			
333	0333	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
334	0334	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	49	sf	Interior surface contaminated with SAF.		
334	0334	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	231	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
334	0334	065	Fireproofing Gray Spray Applied	ACM	50	lf			
335	0335	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	312	sf	Interior surface contaminated with SAF.		
335	0335	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	78	sf	Interior surface contaminated with SAF.		
335	0335	065	Fireproofing Gray Spray Applied	ACM	90	lf			
335	0335	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
335	0335	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
335	0335	069	Cold domestic water Pipe Run 4"-S" Black Mastic . Wrap,	ACM	12	lf	Assumed from drawing		
335	0335	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
335	0335	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
336	0336	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	393	sf	Interior surface contaminated with SAF.		
336	0336	042	Acoustic Tile White	ACM	126	sf			
336	0336	065	Fireproofing Gray Spray Applied	ACM	130 If	lf			
336	0336	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
336	0336	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
336	0336	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
336	0336	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
336	0336	071	Chilled water supply Pipe Run 4"-8" Black	ACM	10	lf			
336	0336	073	Chilled water return Pipe Run 4%8" Black	ACM	10	lf			
337	0337	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	369	sf	Interior surface contaminated with SAF.		
337	0337	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	118	sf	Interior surface contaminated with SAF.		
337	0337	065	Fireproofing Gray Spray Applied	ACM	140	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
337	0337	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
337	0337	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	12	lf	Assumed from drawing		
337	0337	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	Assumed from drawing		
337	0337	068	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	30	lf	Assumed from drawing		
337	0337	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	Assumed from drawing		
337	0337	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from drawing		
338	0338	005	Low-pressure steam Pipe Run 4"-8" White	ACM	22	lf			
338	0338	006	Low-pressure steam Pipe Fitting 4%8" White	ACM	1	ea			
338	0338	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	360	sf	Interior surface contaminated with SAF.		
338	0338	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	131	sf	Interior surface contaminated with SAF.		
338	0338	065	Fireproofing Gray Spray Applied	ACM	125	lf			
338	0338	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf	Assumed from drawing		
338	0338	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf	Assumed from drawing		
338	0338	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	Assumed from drawing		
338	0338	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	Assumed from drawing		
338	0338	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
339	0339	005	Low-pressure steam Pipe Run 4%8" White	ACM	12	lf			
339	0339	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	5	ea			
339	0339	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	133	sf	Interior surface contaminated with SAF.		
339	0339	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	312	sf	Interior surface contaminated with SAF.		
339	0339	065	Fireproofmg Gray Spray Applied	ACM	80	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
339	0339	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
339	0339	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
339	0339	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
340	0340	005	Low-pressure steam Pipe Run 4%8" White	ACM	6	lf			
340	0340	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	5	ea			
340	0340	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	312	sf	Interior surface contaminated with SAF.		
340	0340	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	133	sf	Interior surface contaminated with SAF.		
340	0340	065	Fireproofing Gray Spray Applied	ACM	80	lf			
340	0340	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
340	0340	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
341	0341	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
341	0341	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	5 ea	ea			
341	0341	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
341	0341	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	59	sf	Interior surface contaminated with SAF.		
341	0341	065	Fireproofing Gray Spray Applied	ACM	55	lf			
342	0342	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	59	sf	Interior surface contaminated with SAF.		
342	0342	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAY)	ACM	258	sf	Interior surface contaminated with SAF.		
342	0342	065	Fireproofmg Gray Spray Applied	ACM	55	lf			
342	0342	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
342	0342	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
343	0343	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
343	0343	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	59	sf	Interior surface contaminated with SAF.		
343	0343	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
343	0343	065	Fireproofing Gray Spray Applied	ACM	55	lf			
343	0343	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from drawing		
343	0343	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
344	0344	005	Low-pressure steam Pipe Run 4"-8" White	ACM	15	lf			
344	0344	006	Low-pressure steam Pipe Fitting 4%8" White	ACM	5	ea	Assumed from Sink		
344	0344	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	555	sf	Interior surface contaminated with SAF.		
344	0344	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	220	sf	Interior surface contaminated with SAF.		
344	0344	065	Fireproofing Gray Spray Applied	ACM	210	lf			
344	0344	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
344	0344	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
344	0344	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	40	lf			
344	0344	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
344	0344	081	Sink Bottom undercoating	ACM	1	ea	Sample No. 5 (year 2020)		
345	0345	005	Low-pressure steam Pipe Run 4"-8" White	ACM	30	lf			
345	0345	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	1	ea			
345	0345	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	645	sf	Interior surface contaminated with SAF.		
345	0345	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		
345	0345	065	Fireproofing Gray Spray Applied	ACM	325	lf			
345	0345	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf	Assumed from Drawing		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
345	0345	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf	Assumed from Drawing		
345	0345	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	50	lf			
345	0345	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	50	lf	Assumed from Drawing		
345	0345	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from Drawing		
345	0345	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
346	0346	043	Floor Tile Gray	ACM	286	sf		Tan SheetFlooring	Floor tile under sheet flooring
346	0346	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	610	sf	Interior surface contaminated with SAF.		
346	0346	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	290	sf	Interior surface contaminated with SAF.		
346	0346	065	Fireproofing Gray Spray Applied	ACM	290	lf			
346	0346	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
346	0346	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
346	0346	079	Fireproofing Gray Spray Applied Steel Column Encasement, Gray	ACM	2	lf			
358	0347	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	141	sf	Interior surface contaminated with SAF.		
358	0347	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	537	sf	Interior surface contaminated with SAF.		
358	0347	043	Floor Tile Gray	ACM	15	sf			
358	0347	065	Fireproofing Gray Spray Applied	ACM	135	lf			
358	0347	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf	Assumed from Drawing		
358	0347	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from Drawing		
311-A	0348	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
320-A	0349	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	105	sf	Interior surface contaminated with SAF.		
403	0404	065	Fireproofing Gray Spray Applied	ACM	25	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
403	0404	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
405	0405	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with SAF.		
405	0405	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	321	sf	Interior surface contaminated with SAF.		
406	0406	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	73	sf	Interior surface contaminated with SAF.		
406	0406	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with SAF.		
406	0406	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	285	sf	Interior surface contaminated with SAF.		
407	0407	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	465	sf	Interior surface contaminated with SAF.		
407	0407	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	162	sf	Interior surface contaminated with SAF.		
407	0407	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink	Sink is Gone - New wall	
407	0407	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	6	lf	assumed from sink	Sink is Gone - New wall	
408	0408	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
408	0408	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	107	sf	Interior surface contaminated with SAF.		
408	0408	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
408	0408	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
409	0409	005	Low-pressure steam Pipe Run 4%8" White	ACM	15	lf			
409	0409	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	390	sf	Interior surface contaminated with SAF.		
409	0409	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	687	sf	Interior surface contaminated with SAF.		
409	0409	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
409	0409	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
409	0409	079	Fireproofing Gray Spray Applied , *Steel* Column Encasement, Gray	ACM	1	lf			
410	0410	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	330	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
410	0410	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
410	0410	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
411	0411	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
412	0412	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	222	sf	Interior surface contaminated with SAF.		
413	0413	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	285	sf	Interior surface contaminated with SAF.		
413	0413	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
414	0414	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
415	0415	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
416	0416	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
418	0418	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	348	sf	Interior surface contaminated with SAF.		
418	0418	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
418	0418	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
419	0419	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	303	sf	Interior surface contaminated with SAF.		
419	0419	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
419	0419	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
420	0420	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
420	0420	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
421	0421	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,,	ACM	10	lf			
421	0421	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
422	0422	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	267	sf	Interior surface contaminated with SAF.		
424	0424	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
427	0427	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
428	0428	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
428	0428	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink		
428	0428	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
429	0429	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	438	sf	Interior surface contaminated with SAF.		
429	0429	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf	assumed from drawing		
429	0429	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing	Abated	
429	0429	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
	429		Lab Counter Top	ACM	1	ea			Assumed ACM
430	0430	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	303	sf	Interior surface contaminated with SAF.		
430	0430	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink		
430	0430	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
431	0431	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	657	sf	Interior surface contaminated with SAF.		
432	0432	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	204	sf	Interior surface contaminated with SAF.		
432	0432	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
	432		Lab Counter Top	ACM	1	ea			Assumed ACM
433	0433	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	204	sf	Interior surface contaminated with SAF.		
434	0434	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	445	sf	Interior surface contaminated with SAF.		
435	0435	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	342	sf	Interior surface contaminated with SAF.		
	435		Lab Counter Top	ACM	1	ea			Assumed ACM
436	0436	043	Floor Tile Gray	ACM	81	sf	Floor tile abated, Mastic present		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
436	0436	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	325	sf	Interior surface contaminated with SAF.		
	436		Lab Counter Top	ACM	1	ea			Assumed ACM
437	0437	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	258	sf	Interior surface contaminated with SAF.		
437	0437	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
438	0438	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
439	0439	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	378	sf	Interior surface contaminated with SAF.		
441	0440	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	168	sf	Interior surface contaminated with SAF.		
441	0440	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	26	sf	Interior surface contaminated with SAF.		
440	0440	043	Floor Tile Gray	ACM	95	sf	Floor tile abated, Mastic present		
440	0440	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	350	sf	Interior surface contaminated with SAF.		
441	0440	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf	assumed from drawing		
442	0442	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	114	sf	Interior surface contaminated with SAF.		
442	0442	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	172	sf	Interior surface contaminated with SAF.		
442	0442	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	19	sf			
442	0442	065	Fireproofing Gray Spray Applied	ACM	100	lf			
442	0442	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
442	0442	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	15	lf			
442	0442	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
443	0443	005	Low-pressure steam Pipe Run 4"-8" White	ACM	5	lf			
443	0443	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	225	sf	Interior surface contaminated with SAF.		
443	0443	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	38	sf	Interior surface contaminated with SAF.		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
443	0443	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	25	sf			
443	0443	065	Fireproofing Gray Spray Applied	ACM	50	lf			
443	0443	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	Assumed from sink		
443	0443	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	10	lf			
443	0443	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed sink feed		
443	0443	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf	assumed from drawing		
444	0444	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	270	sf	Interior surface contaminated with SAF.		
444	0444	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	54	sf	Interior surface contaminated with SAF.		
444	0444	065	Fireproofing Gray Spray Applied	ACM	70	lf			
444	0444	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
444	0444	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf	assumed from sink		
444	0444	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	assumed from drawing		
444	0444	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
444	0444	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
444	0444	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed sink feed		
445	0445	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	323	sf	Interior surface contaminated with SAF.	Mechanical Room	
445	0445	042	Acoustic Tile White	ACM	30	sf		Mechanical Room	
445	0445	065	Fireproofing Gray Spray Applied	ACM	85	lf		Mechanical Room	
445	0445	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	assumed from drawing	Mechanical Room	
445	0445	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	assumed from drawing	Mechanical Room	
445	0445	071	Chilled water supply Pipe Run 4"-8" Black	ACM	10	lf		Mechanical Room	

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
445	0445	072	Chilled water supply Pipe Fitting 4%8" Black	ACM	2	lf		Mechanical Room	
445	0445	073	Chilled water return Pipe Run 4%8" Black	ACM	10	lf		Mechanical Room	
445	0445	074	Chilled water return Pipe Fitting 4"-8" Black	ACM	1	lf		Mechanical Room	
445	0445	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Mechanical Room	
446	0446	005	Low-pressure steam Pipe Run 4"-8" White	ACM	5	lf			
446	0446	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	234	sf	Interior surface contaminated with SAF.		
446	0446	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	35	sf	Interior surface contaminated with SAF.		
446	0446	065	Fireproofing Gray Spray Applied	ACM	50	lf			
447	0447	005	Low-pressure steam Pipe Run 4"-8" White	ACM	15	lf			
447	0447	065	Fireproofing Gray Spray Applied	ACM	100	lf			
447	0447	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
447	0447	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
448-A	0448	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	125	sf	Interior surface contaminated with SAF.		
448-A	0448	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	340	sf	Interior surface contaminated with SAF.		
448-A	0448	065	Fireproofing Gray Spray Applied	ACM	100	lf			
448-A	0448	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
448-A	0448	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
449	0449	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
449	0449	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	306	sf	Interior surface contaminated with SAF.		
449	0449	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	77	sf	Interior surface contaminated with SAF.		
449	0449	065	Fireproofing Gray Spray Applied	ACM	85	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
449	0449	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
450	0450	005	Low-pressure steam Pipe Run 4%8" White	ACM	12	lf			
450	0450	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	67	sf	Interior surface contaminated with SAF.		
450	0450	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	281	sf	Interior surface contaminated with SAF.		
450	0450	065	Fireproofing Gray Spray Applied	ACM	70	lf			
450	0450	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf			
450	0450	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
451	0451	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	288	sf	Interior surface contaminated with SAF.		
451	0451	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	80	sf	Interior surface contaminated with SAF.		
451	0451	065	Fireproofing Gray Spray Applied	ACM	70	lf			
451	0451	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
452	0452	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
452	0452	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	67	sf	Interior surface contaminated with SAF.		
452	0452	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	281	sf	Interior surface contaminated with SAF.		
452	0452	065	Fireproofing Gray Spray Applied	ACM	65	lf			
452	0452	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
453	0453	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	70	sf	Interior surface contaminated with SAF.		
453	0453	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	289	sf	Interior surface contaminated with SAF.		
453	0453	043	Floor Tile Gray	ACM	70	sf		Tan Sheet flooring pable pattern - Floor	
453	0453	065	Fireproofing Gray Spray Applied	ACM	70	lf			
453	0453	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
453	0453	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
454	0454	005	Low-pressure steam Pipe Run 4"-8" White	ACM	15	lf			
454	0454	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	84	sf	Interior surface contaminated with SAF.		
454	0454	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	323	sf	Interior surface contaminated with SAF.		
454	0454	065	Fireproofing Gray Spray Applied	ACM	85	lf			
454	0454	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	6	lf			
454	0454	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf			
454	0454	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
441-B	0455	005	Low-pressure steam Pipe Run 4"-8" White	ACM	5	lf			
448	0455	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
441-A	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	58	sf	Interior surface contaminated with SAF.		
441-A	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	315	sf	Interior surface contaminated with SAF.		
441-B	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	24	sf	Interior surface contaminated with SAF.		
441-B	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.		
448	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.		
448	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	731	sf	Interior surface contaminated with SAF.		
455	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	80	sf	Interior surface contaminated with SAF.		
455	0455	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	289	sf	Interior surface contaminated with SAF.		
441-A	0455	065	Fireproofing Gray Spray Applied	ACM	75	lf			
441-B	0455	065	Fireproofmg Gray Spray Applied	ACM	35	lf			
448	0455	065	Fireproofing Gray Spray Applied	ACM	195	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
455	0455	065	Fireproofing Gray Spray Applied	ACM	3	lf			
441-B	0455	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
448	0455	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	45	lf			
441-A	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	assumed from drawing		
441-B	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
441-B	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
448	0455	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
441-B	0455	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	assumed from drawing		
448	0455	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
441-A	0455	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	15	lf			
441-B	0455	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	5	lf			
448	0455	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	50	lf			
456	0456	005	Low-pressure steam Pipe Run 4%8" White	ACM	10	lf			
456	0456	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	50	sf	Interior surface contaminated with SAF.		
456	0456	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	255	sf	Interior surface contaminated with SAF.		
456	0456	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
457	0457	005	Low-pressure steam Pipe Run 4"-8" White	ACM	20	lf			
457	0457	005	Low-pressure steam Pipe Run 4%8" White	ACM	20	lf			
457	0457	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	323	sf	Interior surface contaminated with SAF.		
457	0457	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	84	sf	Interior surface contaminated with SAF.		
457	0457	065	Fireproofing Gray Spray Applied	ACM	85	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
457	0457	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	5	lf			
458	0458	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	131	sf	Interior surface contaminated with SAF.		
458	0458	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	424	sf	Interior surface contaminated with SAF.		
458	0458	043	Floor Tile Gray	ACM	18	sf			
458	0458	065	Fireproofing Gray Spray Applied	ACM	135	lf			
458	0458	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
458	0458	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
458	0458	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
458	0458	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	20	lf			
458	0458	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
460	0460	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	297	sf	Interior surface contaminated with SAF.		
460	0460	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	72	sf	Interior surface contaminated with SAF.		
460	0460	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	33	sf			
460	0460	065	Fireproofing Gray Spray Applied	ACM	60	lf			
460	0460	066	Hot domestic water Pipe Run 4%8" Black Mastic Wrap	ACM	12	lf			
460	0460	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf			
460	0460	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf	assumed from drawing		
460	0460	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	assumed sink feed		
460	0460	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	10	lf			
460	0460	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	5	lf			
460	0460	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
461	0501	065	Fireproofing Gray Spray Applied	ACM	170	lf	I-beam		
461	0501	080	Floor mastic undrneath Gray floor covering	ACM	958	sf	Sample No. 1 (year 2020)		
23	0002-S	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		Room 23 - Stairwell with Fire door	
05-C	0005A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	230	sf	Interior surface contaminated with		
05	0005A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	60	sf	Interior surface contaminated with		
05-B	0005A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with		
05-C	0005A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	250	sf	Interior surface contaminated with		
11-A	0011A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with		
11-A	0011A	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	39	sf			
11-A	0011A	043	Floor Tile Gray	ACM	88	sf		11 A may have Floor tile u/n Concrete	
11-A	0011A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	170	sf	Interior surface contaminated with		
11-A	0011A	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
11-B	0011B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with		
11-C	0011B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	180	sf	Interior surface contaminated with		
11-B	0011B	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	39	sf			
11-A	0011B	043	Floor Tile Gray	ACM	65	sf		11 B may have Floor tile u/n Concrete	
11-B	0011B	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	170	sf	Interior surface contaminated with		
11-B	0011B	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
11-C	0011C	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	40	sf			
11-A	0011C	043	Floor Tile Gray	ACM	88	sf		11 C may have Floor tile u/n Concrete	
11-C	0011C	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	110	sf	Interior surface contaminated with		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
11-D	0011D	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	215	sf	Interior surface contaminated with		
11-D	0011D	041	Mastic Baseboard Mastic Yellow, White (2 layers)	ACM	39	sf			
11-D	0011D	043	Floor Tile Gray	ACM	90	sf		Not mentioned in previous record	Under carpet
102	0102S	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
105	0105- 0104-0106	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	1350	sf	Interior surface contaminated with		
105	0105- 0104-0106	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	3	lf			
204-A	0204A	043	Floor Tile Gray	ACM	40	sf			
204-A	0204A	044	Acoustic Tile White	ACM	40	sf			
204-A	0204A	047	Mastic Brown Baseboard Mastic	ACM	24	sf			
204-A	0204A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with SAF.		
204-A	0204A	065	Fireproofing Gray Spray Applied	ACM	40	lf			
204-A	0204A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from Drawing		
204-A	0204A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from Drawing		
204-A	0204A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from Drawing		
204-A	0204A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	Assumed from Drawing		
205-A	0205-A	043	Floor Tile Gray	ACM	40	sf			
205-A	0205-A	044	Acoustic Tile White	ACM	40	sf			
205-A	0205-A	047	Mastic Brown Baseboard Mastic	ACM	24	sf			
205-A	0205-A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	190	sf	Interior surface contaminated with SAF.		
205-A	0205-A	065	Fireproofmg Gray Spray Applied	ACM	40	lf			
205-A	0205-A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	Assumed from Drawing		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
205-A	0205-A	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	10	lf			
205-A	0205-A	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf			
205-A	0205-A	069	Cold domestic water Pipe Run 4"-S" Black Mastic Wrap,	ACM	12	lf	Assumed from Drawing		
205-A	0205-A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	6	lf	Assumed from Drawing		
216	0215-0216	043	Floor Tile Gray	ACM	112	sf		215/216 Has same HA as indicated in	
216	0215-0216	044	Acoustic Tile White	ACM	112	sf	glued on		
216	0215-0216	047	Mastic Brown Baseboard Mastic	ACM	37	sf			
216	0215-0216	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	345	sf	Interior surface contaminated with SAF.		
216	0215-0216	065	Fireproofing Gray Spray Applied	ACM	110	lf			
227-A	0222-0222A	043	Floor Tile Gray	ACM	305	sf			
227-A	0222-0222A	045	Acoustic Tile White with Wormhole Pattern	ACM	305	sf			
227-A	0222-0222A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	504	sf	Interior surface contaminated with SAF.		
227-A	0222-0222A	065	Fireproofing Gray Spray Applied	ACM	275	lf			
227-A	0222-0222A	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	5	lf			
227-A	0222-0222A	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf			
227-A	0222-0222A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	5	lf			
239-A	0239A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	20	sf	Interior surface contaminated with SAF.	No Access	
239-A	0239A	044	Acoustic Tile White	ACM	35	sf		No Access	
239-A	0239A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	195	sf	Interior surface contaminated with SAF.	No Access	
239-A	0239A	065	Fireproofing Gray Spray Applied	ACM	95	lf		No Access	
302	0302-S	079	Fla ep oofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf		302 - Stairwell	

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
309	0309-0304	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	456	sf	Interior surface contaminated with SAF.		
309	0309-0304	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	10	lf	assumed from sink		
323	0323-323A	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	366	sf	Interior surface contaminated with SAF.		
405-A	0400B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	45	sf	Interior surface contaminated with SAF.		
405-A	0400B	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	240	sf	Interior surface contaminated with SAF.		
405-A	0400B	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	200	lf		Hard ceiling	
406-A	0400C	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	160	sf	Interior surface contaminated with SAF.		
406-A	0400C	049	Dry Wall White (interior surface contaminated w/ SAF)	ACM	64	sf	Interior surface contaminated with SAF.		
402	0402S	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
423	0423-0425	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
426	0426-0417	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	357	sf	Interior surface contaminated with SAF.		
448-B	0448A	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
448-B	0448A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	130	sf	Interior surface contaminated with SAF.		
448-B	0448A	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	391	sf	Interior surface contaminated with SAF.		
448-B	0448A	065	Fireproofing Gray Spray Applied	ACM	100	lf			
448-B	0448A	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf			
448-B	0448A	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf			
448-B	0448A	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
462	0503S	065	Fireproofing Gray Spray Applied	ACM	6	lf	SAF May be in column		
C-11	11-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	630	lf			
C-11	11-C	079	Fireproofing Gray Spray Applied, Steel Column Encasement, Gray	ACM	1	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
C-12	12-C	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	1	ea			
C-12	12-C	035	Low-pressure steam Pipe Run 4"-8" White	ACM	12	lf			
C-12	12-C	037	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	24	lf			
C-12	12-C	038	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
C-12	12-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	1140	lf			
C-13	13- C	078	Fireproofing Gray Spray Applied , Overspray	ACM	215	lf			
C-14	14-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	230	lf			
C-14	14-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-21	21-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-21	21-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-22	22-C	005	Low-pressure steam Pipe Run 4"-8" White	ACM	12	lf			
C-22	22-C	006	Low-pressure steam Pipe Fitting 4"-8" White	ACM	1	ea			
C-22	22-C	037	Chilled water Pipe Run 4%8" Black Mastic Wrap,	ACM	24	lf			
C-22	22-C	038	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
C-22	22-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	1200	lf			
C-22	22-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	2	lf			
C-23	23-C	078	Fireproofing Gray Spray Applied , Oveispiay	ACM	330	lf			
C-23	23-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-24	24-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	350	lf			
C-24	24-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-31	31-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	12	lf	overspray (SAF HA 065)		

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
C-31	31-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	overspray		
C-31	31-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-31	31-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-32	32-C	005	Low-pressure steam Pipe Run 4"-8" White	ACM	12	lf			
C-32	32-C	006	Low-pressure steam Pipe Fitting 4%8" White	ACM	2	ea			
C-32	32-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf			
C-32	32-C	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf			
C-32	32-C	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	30	lf	overspray		
C-32	32-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	overspray		
C-32	32-C	070	Hot domestic water Pipe Run 4%8" Black Mastic Wrap,Recirculating,	ACM	12	lf			
C-32	32-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-32	32-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-33	33-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	35	lf			
C-33	33-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	35	lf			
C-33	33-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-33	33-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
C-34	34-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	25	lf			
C-34	34-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	25	lf	overspray		
C-34	34-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	610	lf			
C-34	34-C	079	Fireproofmg Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			
400	401-402	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			

Table 2 - ACM Summary by New Room Numbers
Kellogg Building - FSU Building No. 073-0006
Asbestos Survey Update 2024

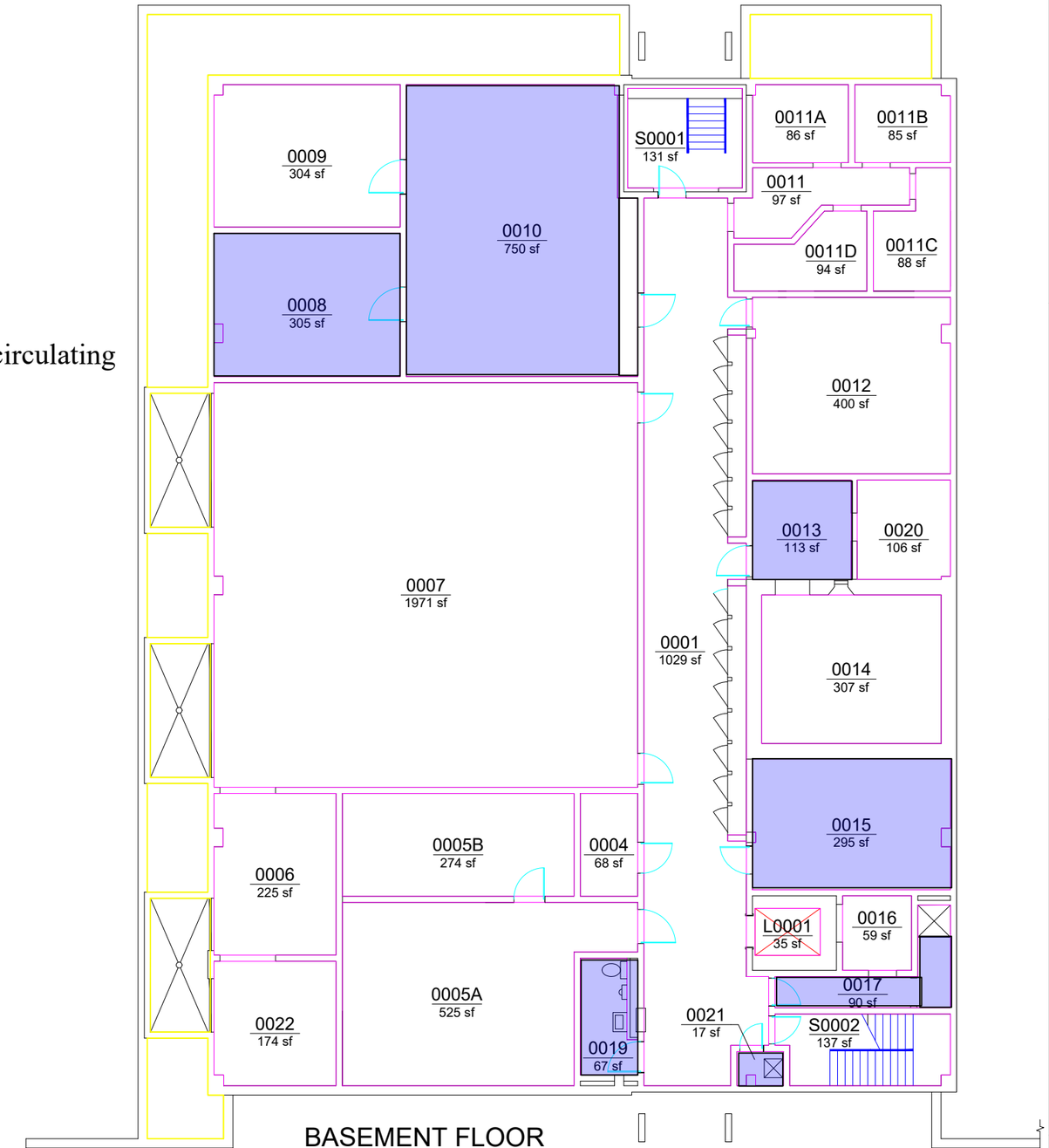
Room	New Room	HA	Material Type	ACM Status	Quantity	Unit	Remarks	Remarks 2020	Remarks 2024
400	401-402	039	Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)	ACM	1440	sf	Interior surface contaminated with SAF.		
400	401-402	045	Acoustic Tile White with Wormhole Pattern	ACM	940	sf			
400	401-402	065	Fireproofing Gray Spray Applied	ACM	710	lf			
400	401-402	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	20	lf			
400	401-402	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	20	lf	Assumed from Drawing		
400	401-402	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	25	lf			
C-41	41-C	078	Fireproofing Gray Spray Applied , Ovcaspiay	ACM	310	lf			
C-41	41-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	11f	lf			
C-42	42-C	005	Low-pressure steam Pipe Run 4"-8" White	ACM	10	lf			
C-42	42-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
C-42	42-C	067	Heating hot water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf			
C-42	42-C	068	Chilled water Pipe Run 4"-8" Black Mastic Wrap,	ACM	12	lf	overspray		
C-42	42-C	069	Cold domestic water Pipe Run 4"-8" Black Mastic Wrap,	ACM	15	lf	overspray		
C-42	42-C	070	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap,Recirculating,	ACM	l5	lf			
C-42	42-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	480	lf			
C-43	43-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
C-43	43-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	300	lf			
C-44	44-C	066	Hot domestic water Pipe Run 4"-8" Black Mastic Wrap	ACM	15	lf			
C-44	44-C	069	Cold domestic water Pipe Run 4%8" Black Mastic Wrap,	ACM	15	lf	overspray		
C-44	44-C	078	Fireproofing Gray Spray Applied , Overspray	ACM	700	lf			
C-44	44-C	079	Fireproofing Gray Spray Applied , Steel Column Encasement, Gray	ACM	1	lf			

Appendix A – Drawings

ACM Location Drawings (1-18)

HA 66, 69 TSI - ACM

HA 005 - Low-pressure steam Pipe Run 4"-8" White
HA 006 - Low-pressure steam Pipe Fitting 4" to 8" White
HA 066 - Hot domestic water Pipe Run 4" to8" Black Mastic Wrap
HA 067 - Heating hot water Pipe Run 4"-8" Black Mastic Wrap,
HA 068 - Chilled water Pipe Run 4"-8" Black Mastic Wrap
HA 069 - Cold domestic water Pipe Run 4"-8" Black Mastic Wrap
HA 070 - Hot domestic water Pipe Run 4"-8" Black Mastic Wrap Recirculating
HA 071 - Chilled water supply Pipe Run 4"-8" Black
HA 072 - Chilled water supply Pipe Fitting 4"-8" Black
HA 073 - Chilled water return Pipe Run 4%8" Black
HA 074 - Chilled water return Pipe Fitting 4"-8" Black



BASEMENT FLOOR
BUILDING No. 0006

MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Basement ACM TSI Location

03-22-2024 DATE
052.038.000 PROJECT NUMBEER
1 DWG. NUMBER
1 OF 18 SHEET

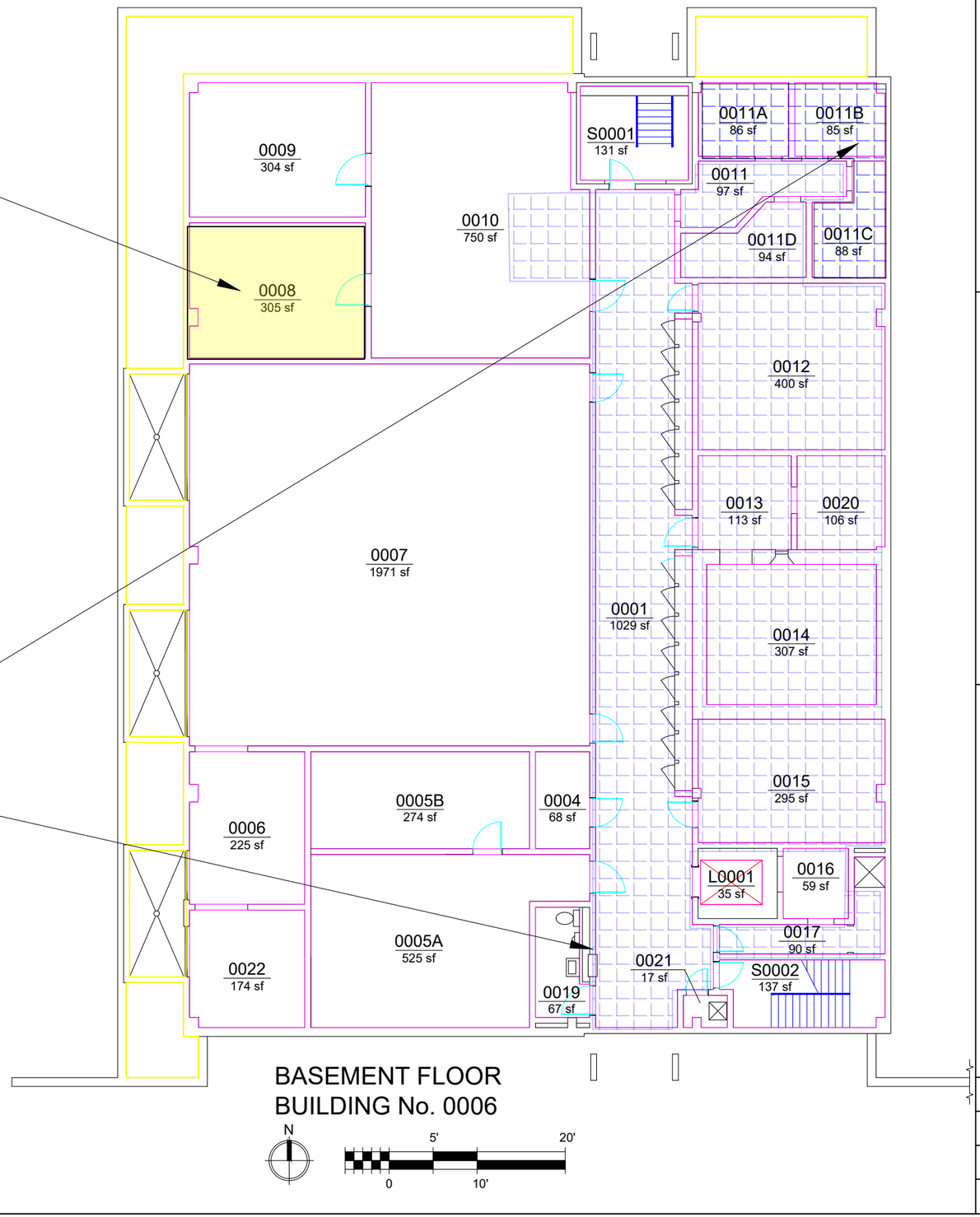
HA 43 & 47 - Floor tile and Mastic, Baseboard mastic is ACM.

HA 55 -Transite Lab Table Top is ACM

HA 043, 45 - Floor Tile Gray
HA 041 - Mastic Baseboard Mastic Yellow, White (2 layers)
HA 047 - Mastic Brown Baseboard Mastic
HA 055 - Transite Gray Lab Table

Room 11A, B & C may have floor tile underneath concrete.

Chase may have SAF debris inside



BASEMENT FLOOR
BUILDING No. 0006

N

0 5' 10' 20'

MihirEnvironics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Basement ACM Misc. Location

03-22-2024 DATE

052.038.000 PROJECT NUMBEER

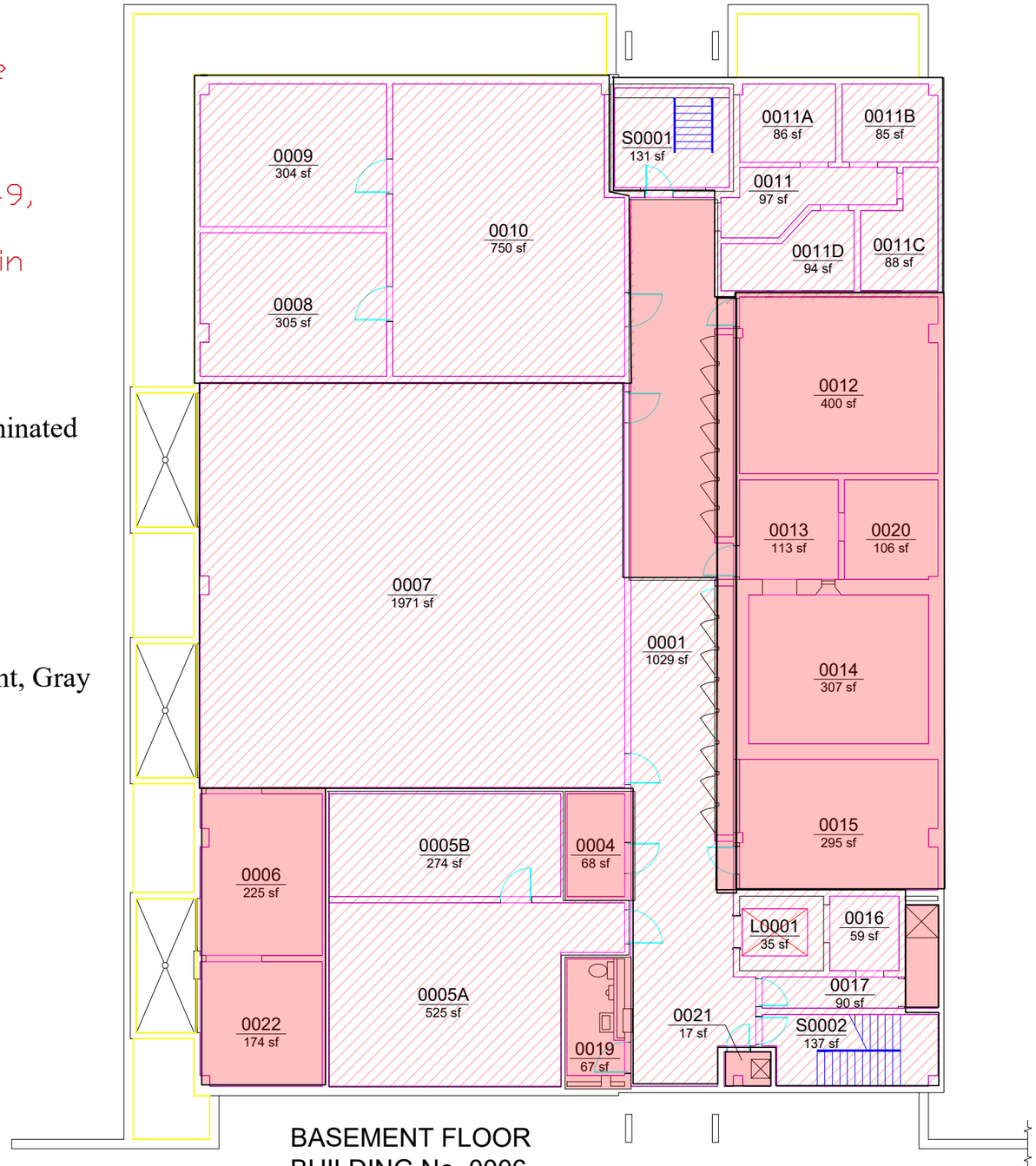
2 DWG. NUMBER

2 OF 17 SHEET

HA 39, 44, 45, 49, 60, 65, 79 - Spray Applied Fireproofing ACM (See HA Description below)

HA 44, 45, 65 was abated, HA 39, 49, 79 - Spray Applied Fireproofing contamination in wall cavities and in Columns

HA 039 - Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)
HA 044 - Acoustic Tile White
HA 045 - Acoustic Tile White with Wormhole Pattern
HA049 - Dry Wall White (interior surface contaminated w/ SAF)
HA 060 - Acoustic Tile White with Random Holes & Rough Texture
HA 065 - Fireproofing Gray Spray Applied
HA 079 - Fireproofing Gray Spray Applied , Steel Column Encasement, Gray



BASEMENT FLOOR
BUILDING No. 0006

MihirEnvironics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Basement ACM SAF Location

03-22-2024 DATE

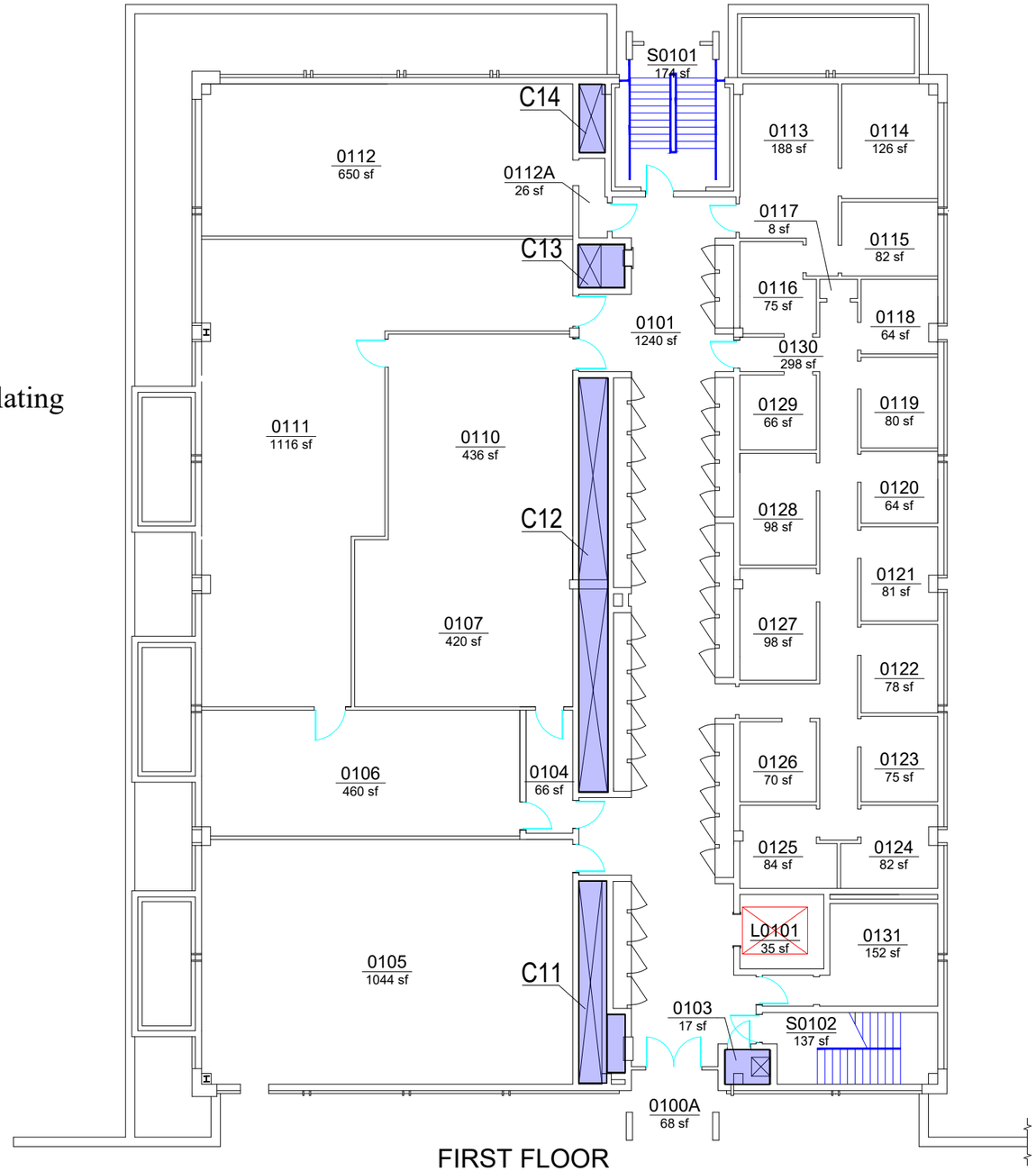
052.038.000 PROJECT NUMBEER

3 DWG. NUMBER

3 OF 18 SHEET

HA 05, 37, 38, 66 to 70 TSI - ACM

HA 005 - Low-pressure steam Pipe Run 4"-8" White
HA 006 - Low-pressure steam Pipe Fitting 4" to 8" White
HA 066 - Hot domestic water Pipe Run 4" to8" Black Mastic Wrap
HA 067 - Heating hot water Pipe Run 4"-8" Black Mastic Wrap,
HA 068 - Chilled water Pipe Run 4"-8" Black Mastic Wrap
HA 069 - Cold domestic water Pipe Run 4"-8" Black Mastic Wrap
HA 070 - Hot domestic water Pipe Run 4"-8" Black Mastic Wrap Recirculating
HA 071 - Chilled water supply Pipe Run 4"-8" Black
HA 072 - Chilled water supply Pipe Fitting 4"-8" Black
HA 073 - Chilled water return Pipe Run 4%8" Black
HA 074 - Chilled water return Pipe Fitting 4"-8" Black



FIRST FLOOR
BUILDING No. 0006

N

5' 20'
0 10'

MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Upate
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - First Floor ACM TSI Location

03-22-2024
DATE

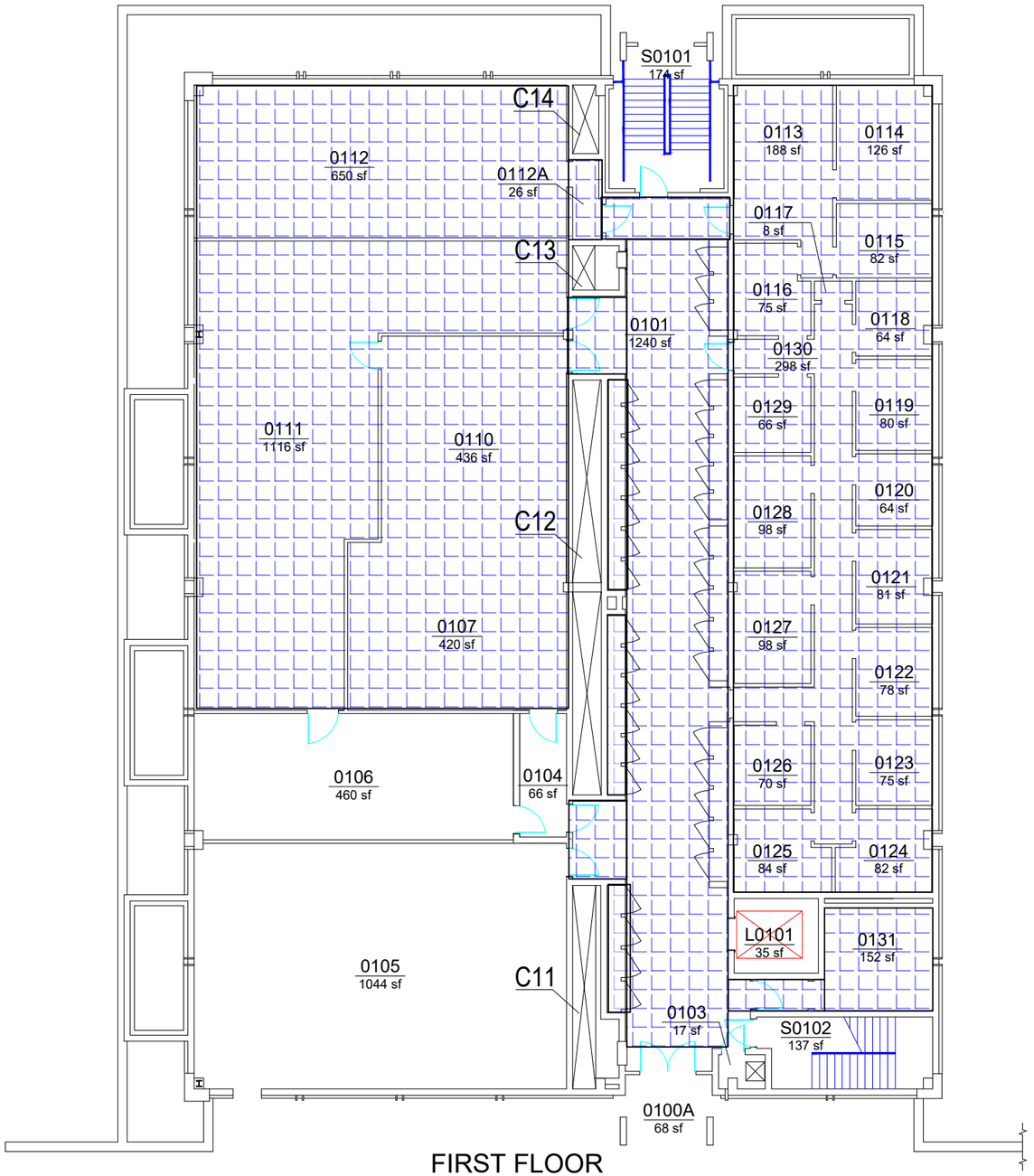
052.038.000
PROJECT NUMBEER

4
DWG. NUMBER

4 OF 18
SHEET

HA 43 & 47 - Floor tile and Mastic, Baseboard mastic is ACM.

HA 043, 45 - Floor Tile Gray
HA 041 - Mastic Baseboard Mastic Yellow, White (2 layers)
HA 047 - Mastic Brown Baseboard Mastic



FIRST FLOOR
BUILDING No. 0006

MihirEnvironics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - First Floor ACM Misc. Location

03-22-2024 DATE

052.038.000 PROJECT NUMBEER

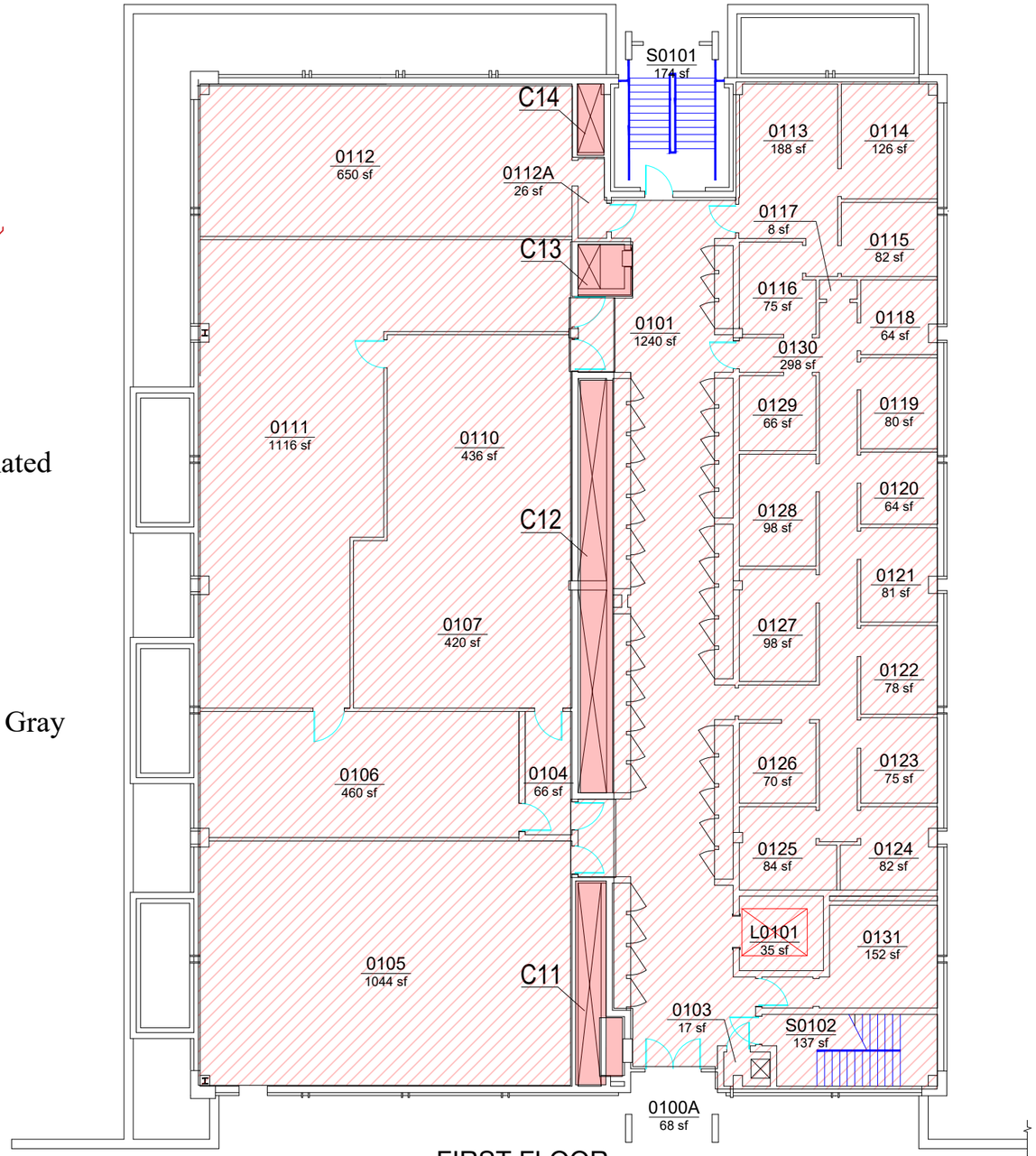
5 DWG. NUMBER

5 OF 18 SHEET

HA 39, 44, 45, 49, 60, 65, 79 - Spray Applied Fireproofing ACM (See HA Description below)

HA 44, 45, 65 was abated, HA 39, 49, 79 - Spray Applied Fireproofing contamination in wall cavities and in Columns

HA 039 - Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)
HA 044 - Acoustic Tile White
HA 045 - Acoustic Tile White with Wormhole Pattern
HA049 - Dry Wall White (interior surface contaminated w/ SAF)
HA 060 - Acoustic Tile White with Random Holes & Rough Texture
HA 065 - Fireproofing Gray Spray Applied
HA 079 - Fireproofing Gray Spray Applied , Steel Column Encasement, Gray



FIRST FLOOR
BUILDING No. 0006

MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Upate
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - First Floor ACM SAF Location

03-22-2024 DATE

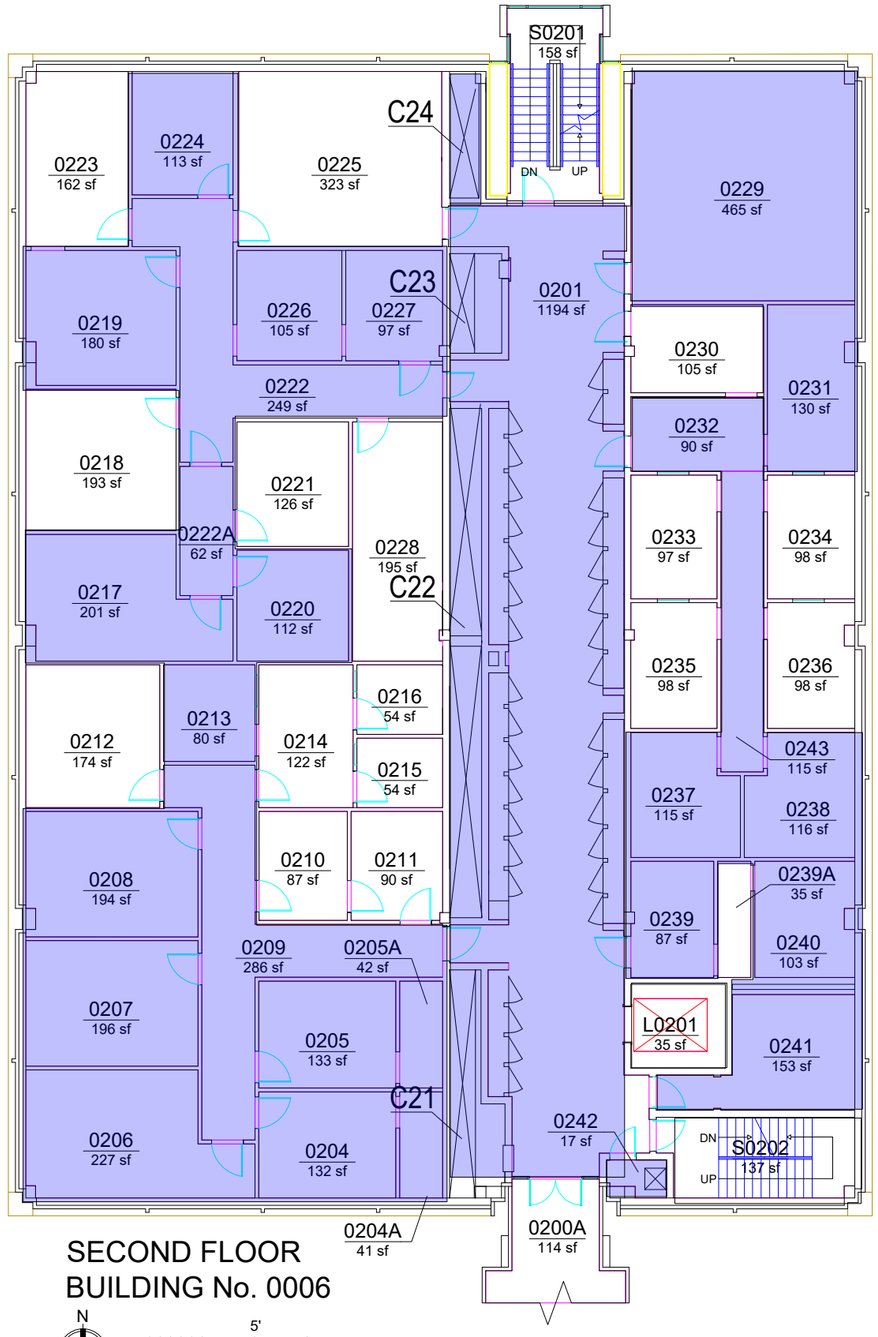
052.038.000 PROJECT NUMBEER

6 DWG. NUMBER

6 OF 18 SHEET

HA 05, 37, 38, 66 to 70 TSI - ACM

HA 005 - Low-pressure steam Pipe Run 4"-8" White
HA 006 - Low-pressure steam Pipe Fitting 4" to 8" White
HA 066 - Hot domestic water Pipe Run 4" to8" Black Mastic Wrap
HA 067 - Heating hot water Pipe Run 4"-8" Black Mastic Wrap,
HA 068 - Chilled water Pipe Run 4"-8" Black Mastic Wrap
HA 069 - Cold domestic water Pipe Run 4"-8" Black Mastic Wrap
HA 070 - Hot domestic water Pipe Run 4"-8" Black Mastic Wrap Recirculating
HA 071 - Chilled water supply Pipe Run 4"-8" Black
HA 072 - Chilled water supply Pipe Fitting 4"-8" Black
HA 073 - Chilled water return Pipe Run 4%8" Black
HA 074 - Chilled water return Pipe Fitting 4"-8" Black



MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Second Floor ACM TSI Location

03-22-2024
DATE

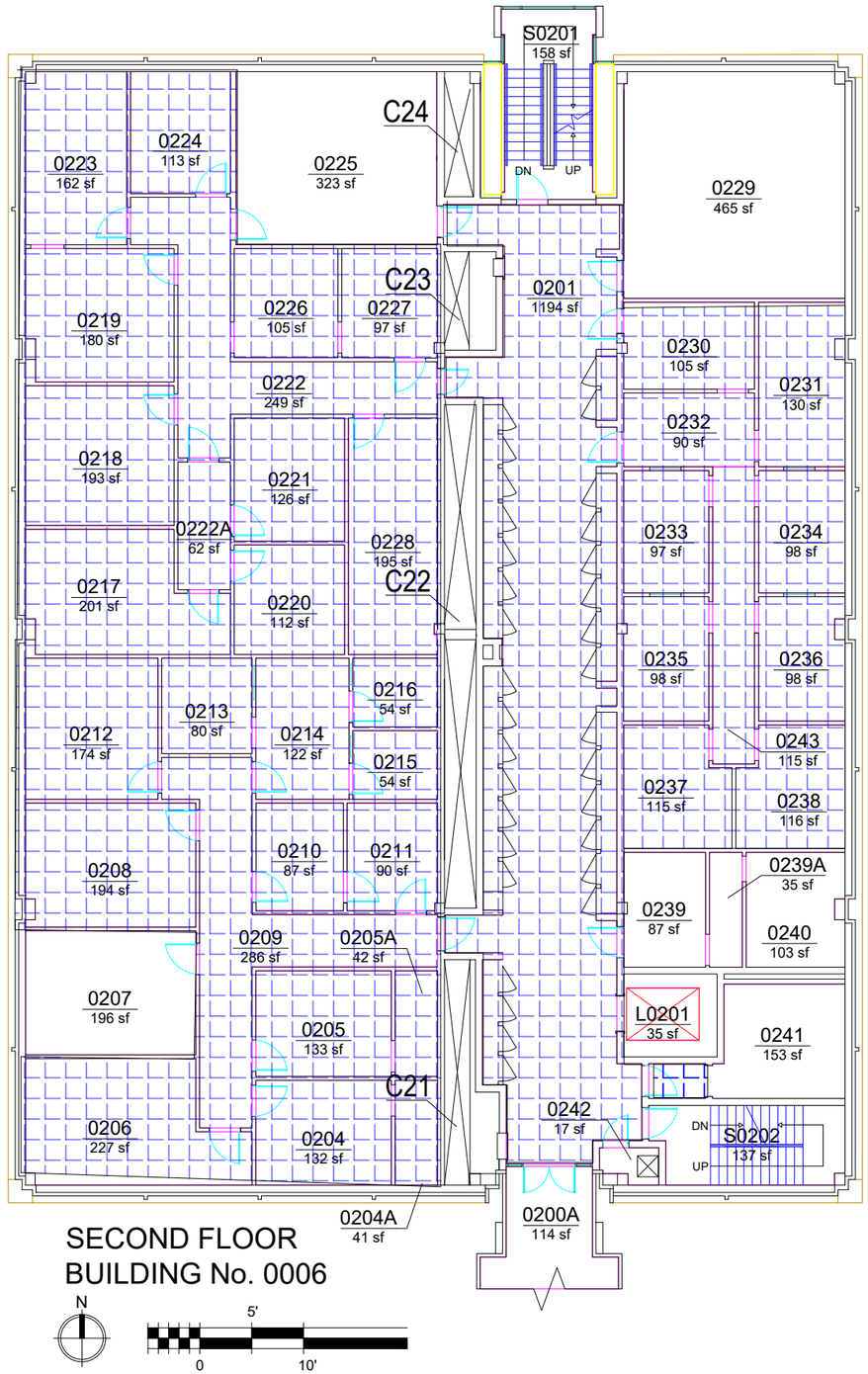
052.038.000
PROJECT NUMBEER

7
DWG. NUMBER

7 OF 18
SHEET

HA 43 & 47 - Floor tile and Mastic,
Baseboard mastic is ACM.

HA 043, 45 - Floor Tile Gray
HA 041 - Mastic Baseboard Mastic Yellow, White (2 layers)
HA 047 - Mastic Brown Baseboard Mastic



Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

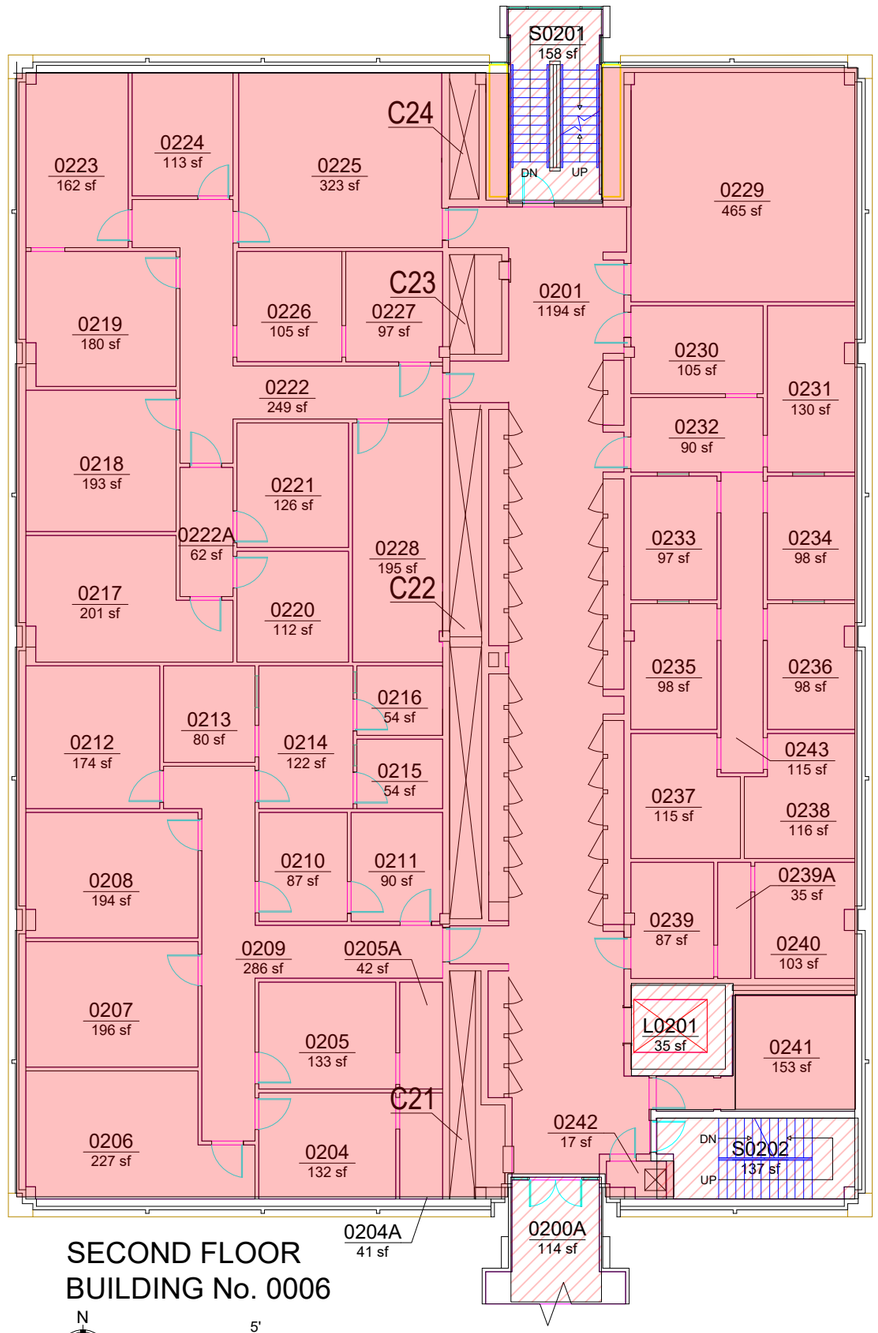
DRAWING TITLE
Asbestos Survey Update - Second Floor ACM Misc. Location

03-22-2024 DATE
052.038.000 PROJECT NUMBEER
8 DWG. NUMBER
8 OF 18 SHEET

HA 39, 44, 45, 49, 60, 65, 79 - Spray Applied Fireproofing ACM (See HA Description below)

HA 44, 45, 65 was abated, HA 39, 49, 79 - Spray Applied Fireproofing contamination in wall cavities and in Columns

HA 039 - Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)
HA 044 - Acoustic Tile White
HA 045 - Acoustic Tile White with Wormhole Pattern
HA049 - Dry Wall White (interior surface contaminated w/ SAF)
HA 060 - Acoustic Tile White with Random Holes & Rough Texture
HA 065 - Fireproofing Gray Spray Applied
HA 079 - Fireproofing Gray Spray Applied , Steel Column Encasement, Gray



SECOND FLOOR
BUILDING No. 0006

MihirEnvironics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Second Floor ACM SAF Location

03-22-2024 DATE

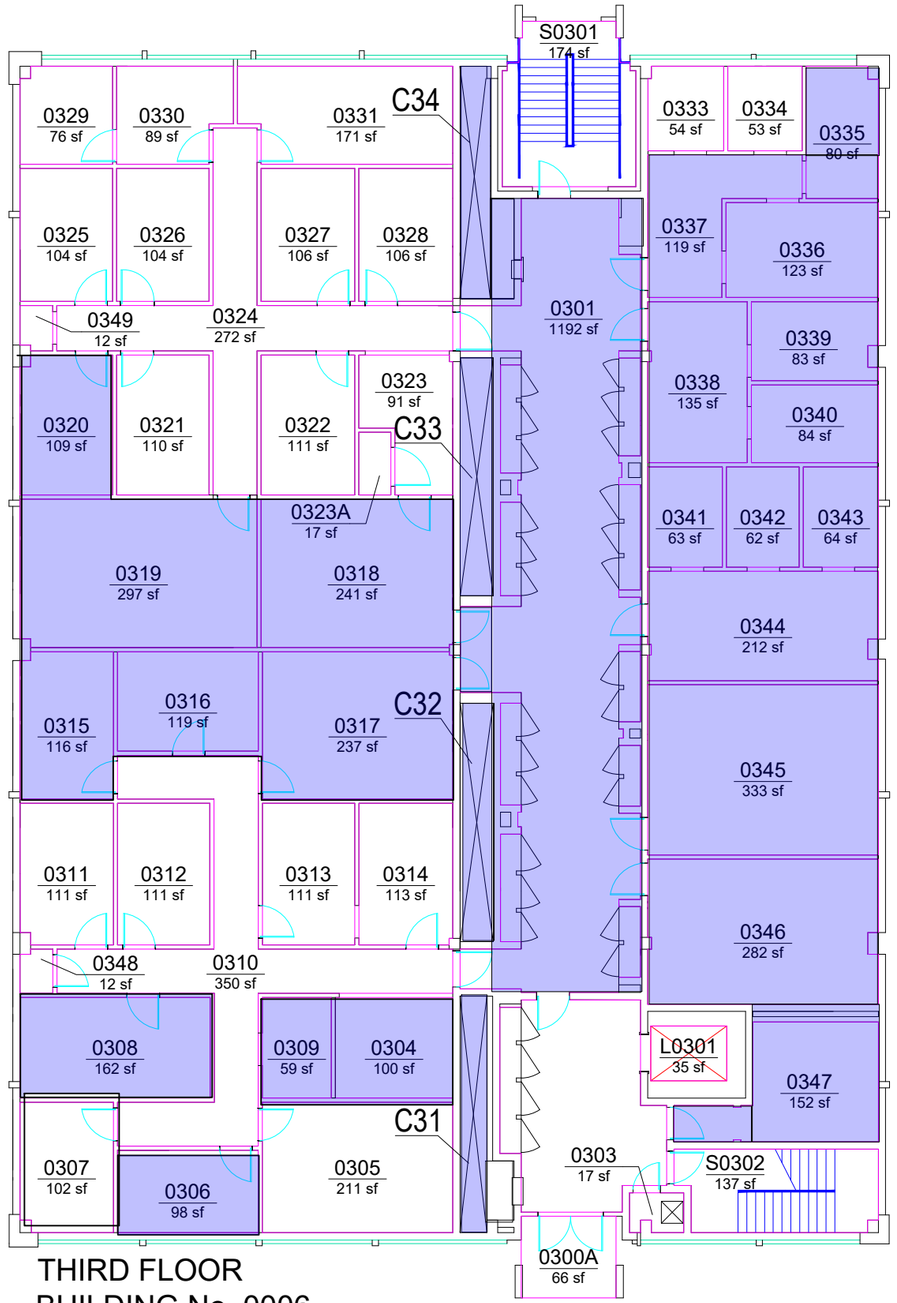
052.038.000 PROJECT NUMBEER

9 DWG. NUMBER

9 OF 18 SHEET

HA 05, 37, 38, 66 to 70 TSI - ACM

HA 005 - Low-pressure steam Pipe Run 4"-8" White
HA 006 - Low-pressure steam Pipe Fitting 4" to 8" White
HA 066 - Hot domestic water Pipe Run 4" to8" Black Mastic Wrap
HA 067 - Heating hot water Pipe Run 4"-8" Black Mastic Wrap,
HA 068 - Chilled water Pipe Run 4"-8" Black Mastic Wrap
HA 069 - Cold domestic water Pipe Run 4"-8" Black Mastic Wrap
HA 070 - Hot domestic water Pipe Run 4"-8" Black Mastic Wrap Recirculating
HA 071 - Chilled water supply Pipe Run 4"-8" Black
HA 072 - Chilled water supply Pipe Fitting 4"-8" Black
HA 073 - Chilled water return Pipe Run 4%8" Black
HA 074 - Chilled water return Pipe Fitting 4"-8" Black



THIRD FLOOR
BUILDING No. 0006

N

5' 20'
0 10'

MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Third Floor ACM TSI Location

03-22-2024 DATE
052.038.000 PROJECT NUMBEER
10 DWG. NUMBER
10 OF 18 SHEET

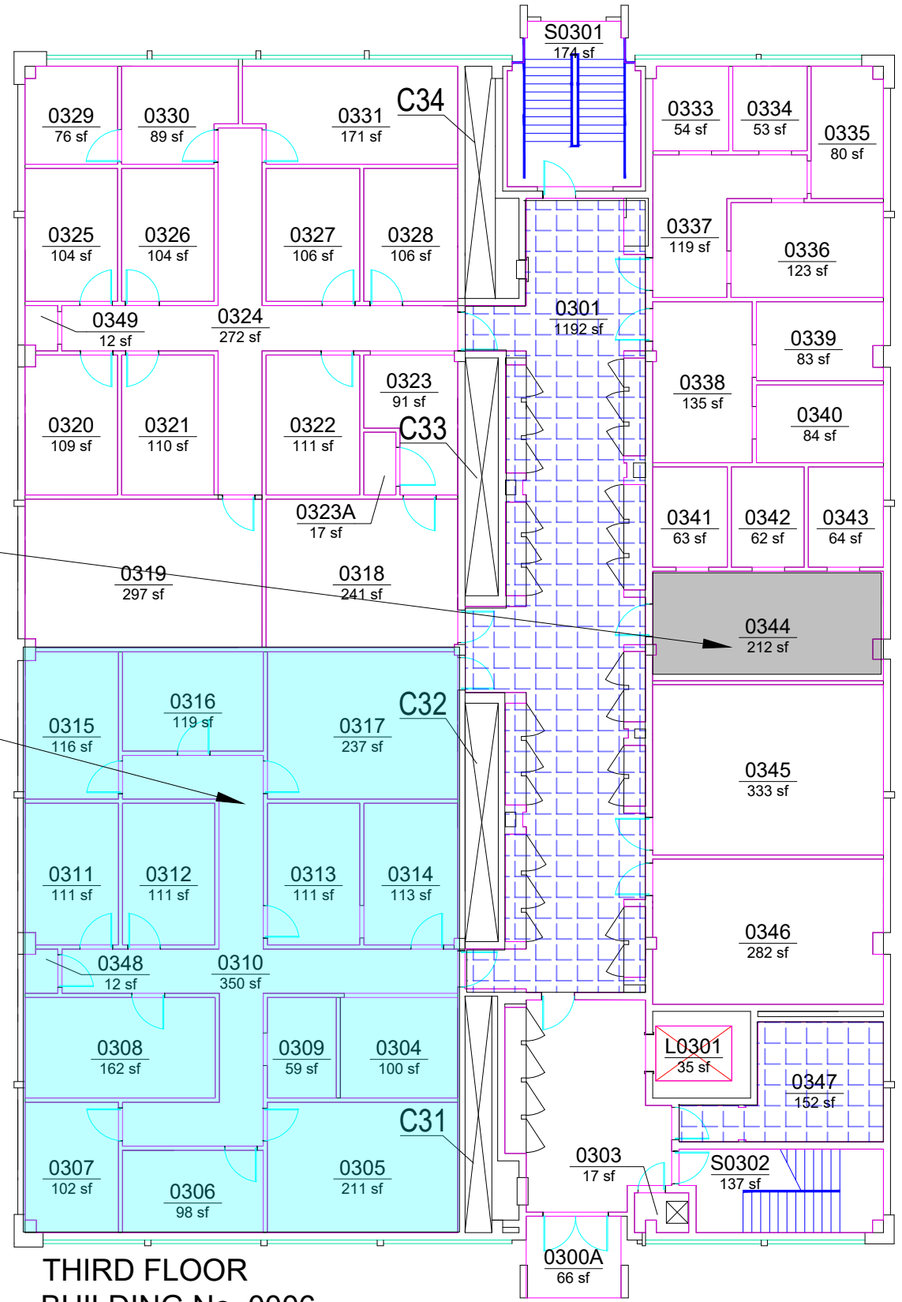
HA 43 & 47 - Floor tile and Mastic, Baseboard mastic is ACM.

HA 81 - Sink bottom undercoating in Room 0344 is ACM.

HA 043, 45 - Floor Tile Gray
HA 041 - Mastic Baseboard Mastic Yellow, White (2 layers)
HA 047 - Mastic Brown Baseboard Mastic

Sample No. 5 (Year 2020)

Black mastic under carpet



THIRD FLOOR
BUILDING No. 0006

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

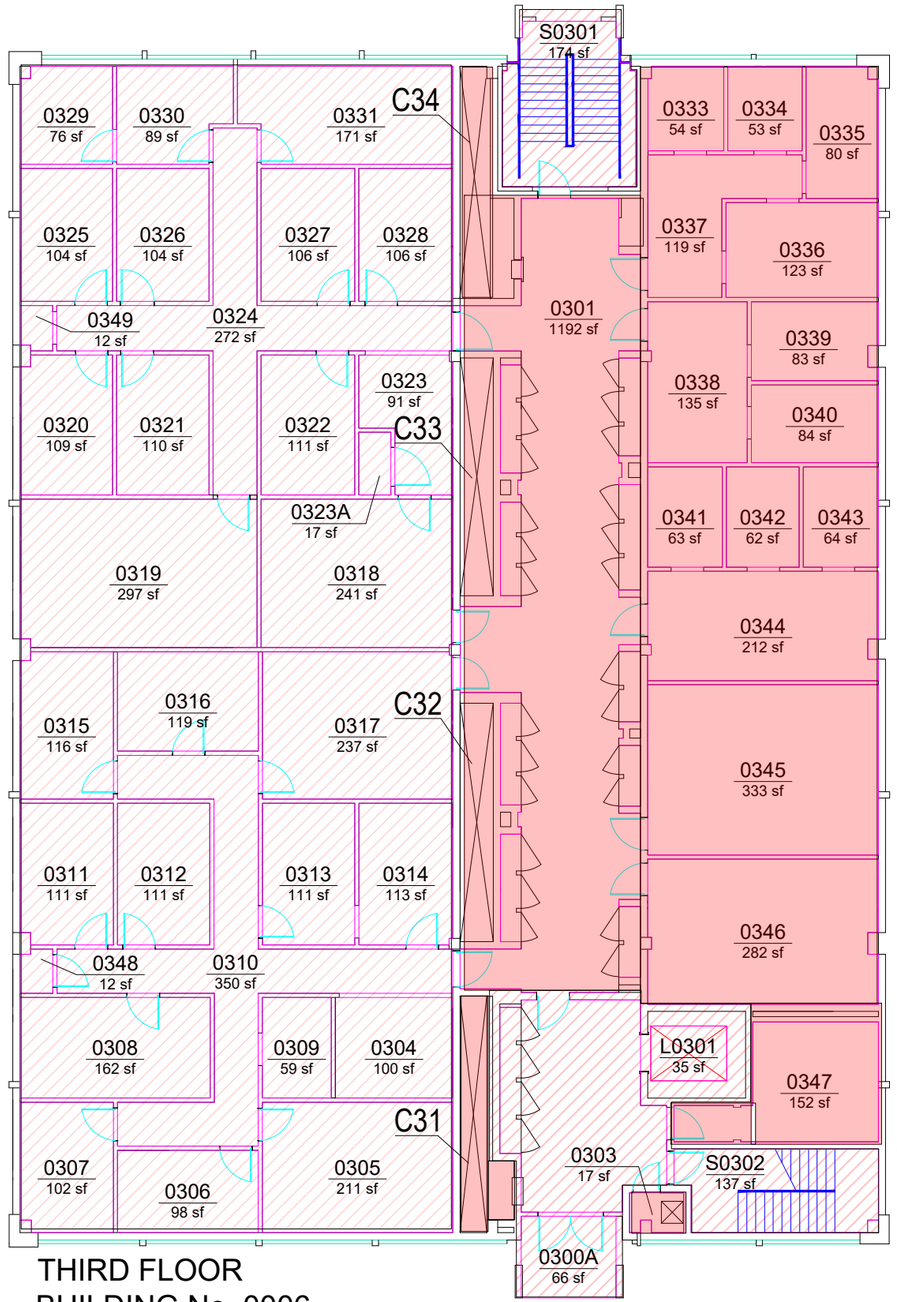
DRAWING TITLE
Asbestos Survey Update - Third Floor ACM Misc. Location

03-22-2024 DATE
052.038.000 PROJECT NUMBEER
11 DWG. NUMBER
11 OF 18 SHEET

HA 39, 44, 45, 49, 60, 65, 79 - Spray Applied Fireproofing ACM (See HA Description below)

HA 44, 45, 65 was abated, HA 39, 49, 79 - Spray Applied Fireproofing contamination in wall cavities and in Columns
Duct/Beam intersection may conseal original Asbestos containing Fireproofing

HA 039 - Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)
HA 044 - Acoustic Tile White
HA 045 - Acoustic Tile White with Wormhole Pattern
HA049 - Dry Wall White (interior surface contaminated w/ SAF)
HA 060 - Acoustic Tile White with Random Holes & Rough Texture
HA 065 - Fireproofing Gray Spray Applied
HA 079 - Fireproofing Gray Spray Applied , Steel Column Encasement, Gray



THIRD FLOOR
BUILDING No. 0006

N

5' 20'
0 10'

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

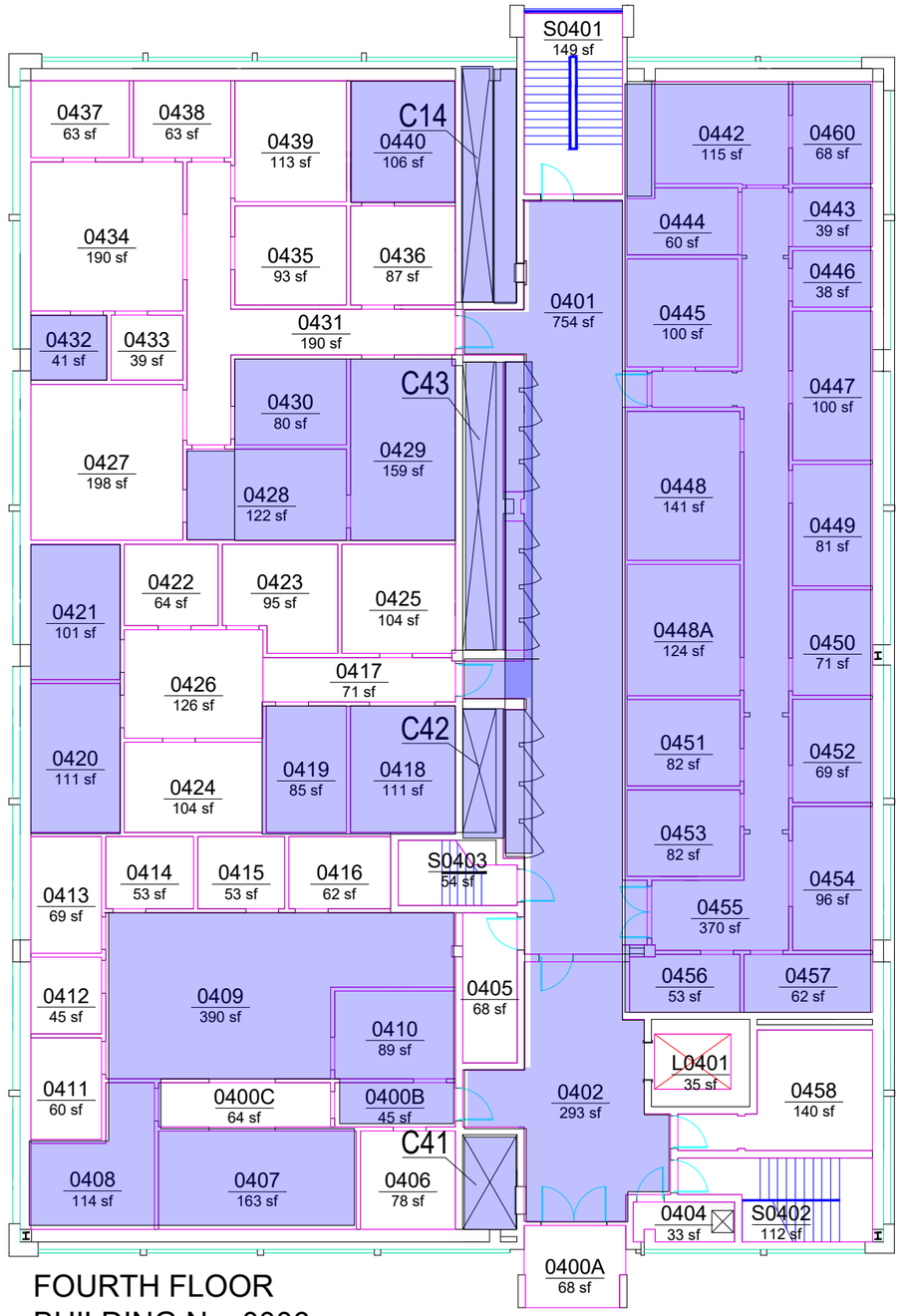
PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Third Floor ACM SAF Location

03-22-2024 DATE
052.038.000 PROJECT NUMBEER
12 DWG. NUMBER
12 OF 18 SHEET

HA 05, 37, 38, 66 to 70 TSI - ACM

HA 005 - Low-pressure steam Pipe Run 4"-8" White
HA 006 - Low-pressure steam Pipe Fitting 4" to 8" White
HA 066 - Hot domestic water Pipe Run 4" to8" Black Mastic Wrap
HA 067 - Heating hot water Pipe Run 4"-8" Black Mastic Wrap,
HA 068 - Chilled water Pipe Run 4"-8" Black Mastic Wrap
HA 069 - Cold domestic water Pipe Run 4"-8" Black Mastic Wrap
HA 070 - Hot domestic water Pipe Run 4"-8" Black Mastic Wrap Recirculating
HA 071 - Chilled water supply Pipe Run 4"-8" Black
HA 072 - Chilled water supply Pipe Fitting 4"-8" Black
HA 073 - Chilled water return Pipe Run 4%8" Black
HA 074 - Chilled water return Pipe Fitting 4"-8" Black



FOURTH FLOOR
BUILDING No. 0006

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

DRAWING TITLE
Asbestos Survey Update - Fourth Floor ACM TSI Location

PROJECT NAME
Asbestos Survey Updte
Kellogg Research Building
Florida State University
Tallahassee, Florida

DATE 03-22-2024

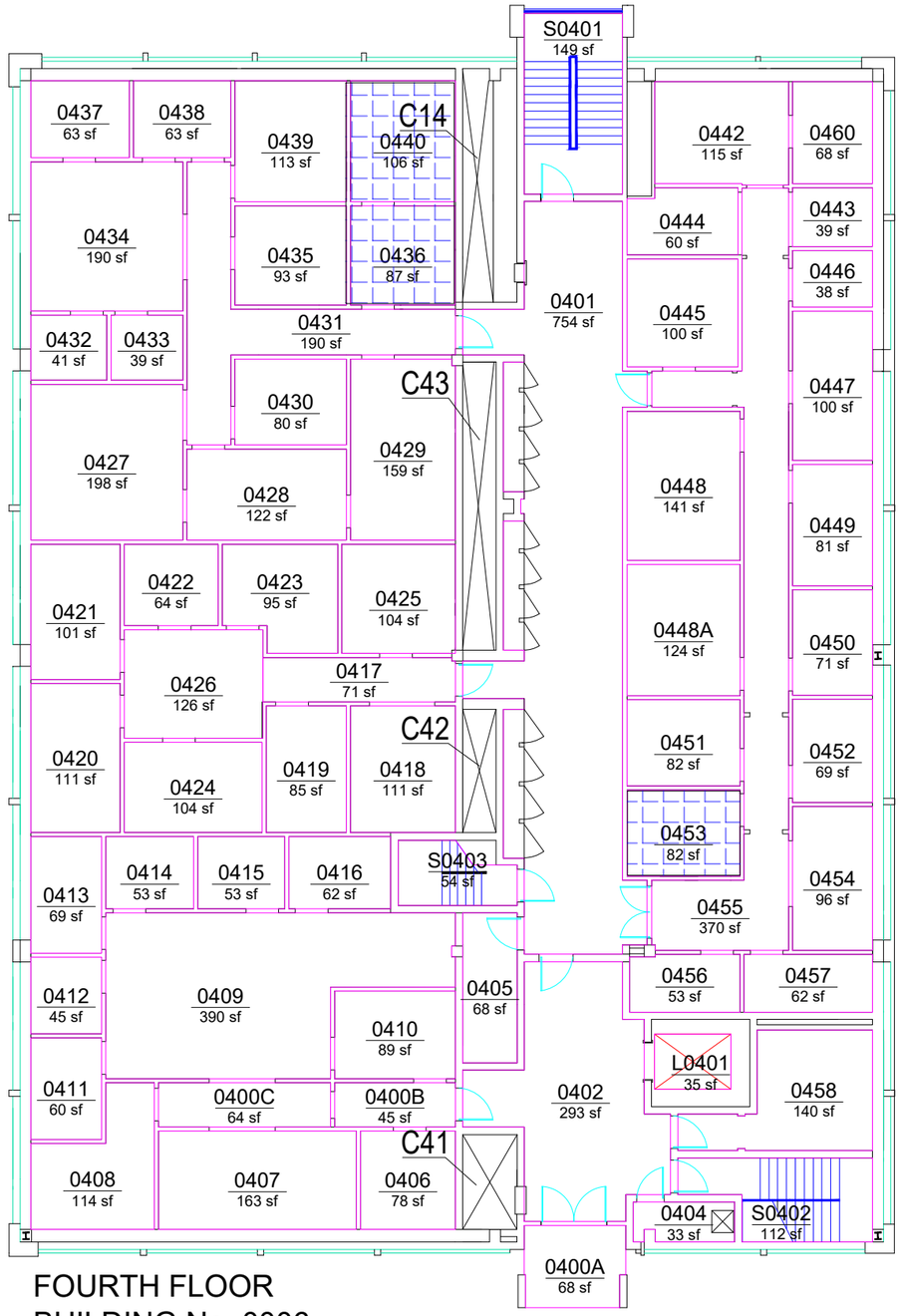
PROJECT NUMBEER 052.038.000

DWG. NUMBER 13

SHEET 13 OF 18

HA 41, 43, 45 & 47 - Floor tile and Mastic, Baseboard mastic is ACM.

HA 043, 45 - Floor Tile Gray
HA 041 - Mastic Baseboard Mastic Yellow, White (2 layers)
HA 047 - Mastic Brown Baseboard Mastic



FOURTH FLOOR
BUILDING No. 0006

MihirEnvironics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Fourth Floor ACM Misc. Location

03-22-2024 DATE

052.038.000 PROJECT NUMBEER

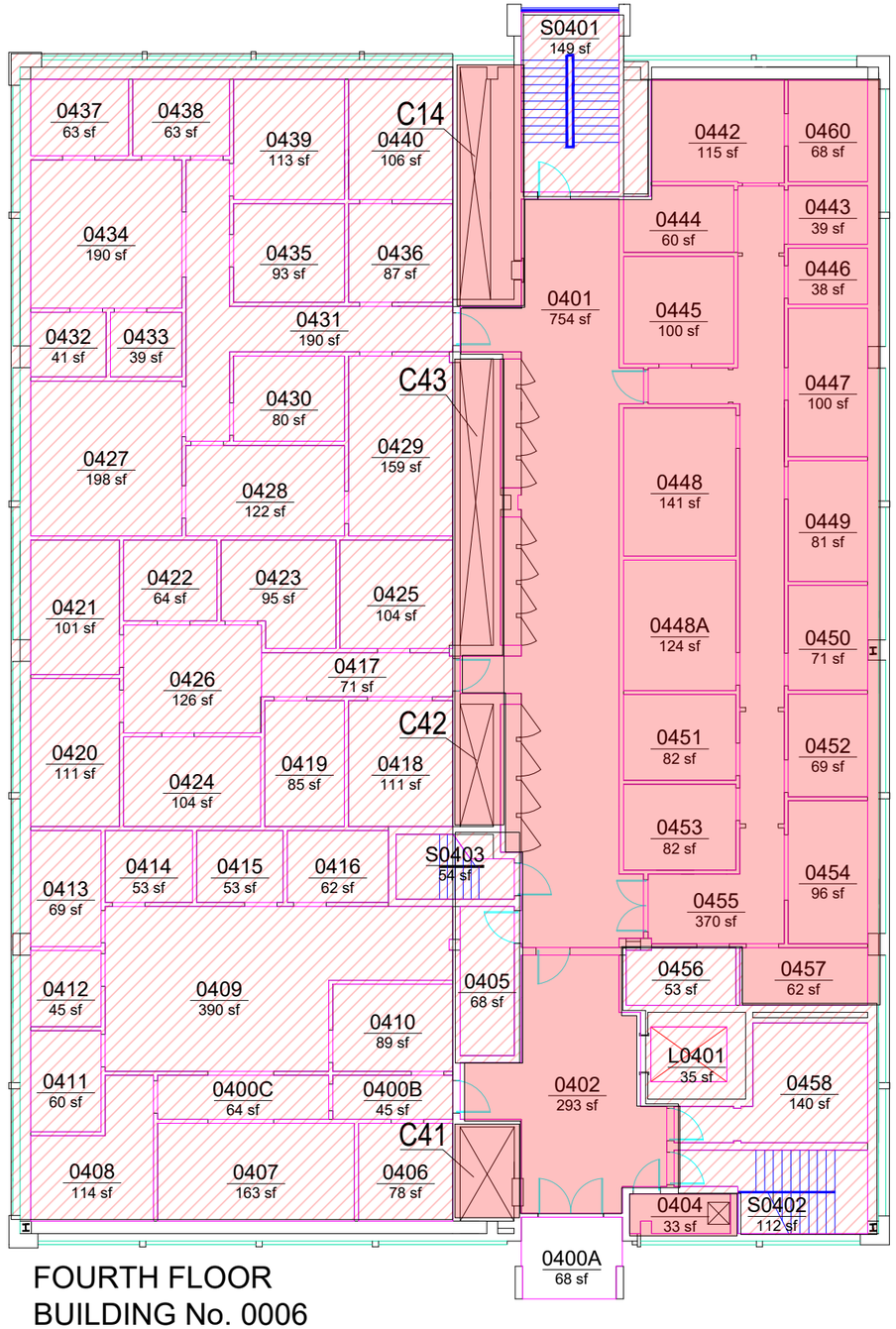
14 DWG. NUMBER

14 OF 18 SHEET

HA 39, 44, 45, 49, 60, 65, 79 - Spray Applied Fireproofing ACM (See HA Description below)

HA 44, 45, 65 was abated, HA 39, 49, 79 - Spray Applied Fireproofing contamination in wall cavities and in Columns
Duct/Beam intersection may conseal original Asbestos containing Fireproofing

HA 039 - Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)
HA 044 - Acoustic Tile White
HA 045 - Acoustic Tile White with Wormhole Pattern
HA049 - Dry Wall White (interior surface contaminated w/ SAF)
HA 060 - Acoustic Tile White with Random Holes & Rough Texture
HA 065 - Fireproofing Gray Spray Applied
HA 079 - Fireproofing Gray Spray Applied , Steel Column Encasement, Gray



FOURTH FLOOR
BUILDING No. 0006

N

0 5' 10' 20'

MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Fourth Floor ACM SAF Location

03-22-2024 DATE

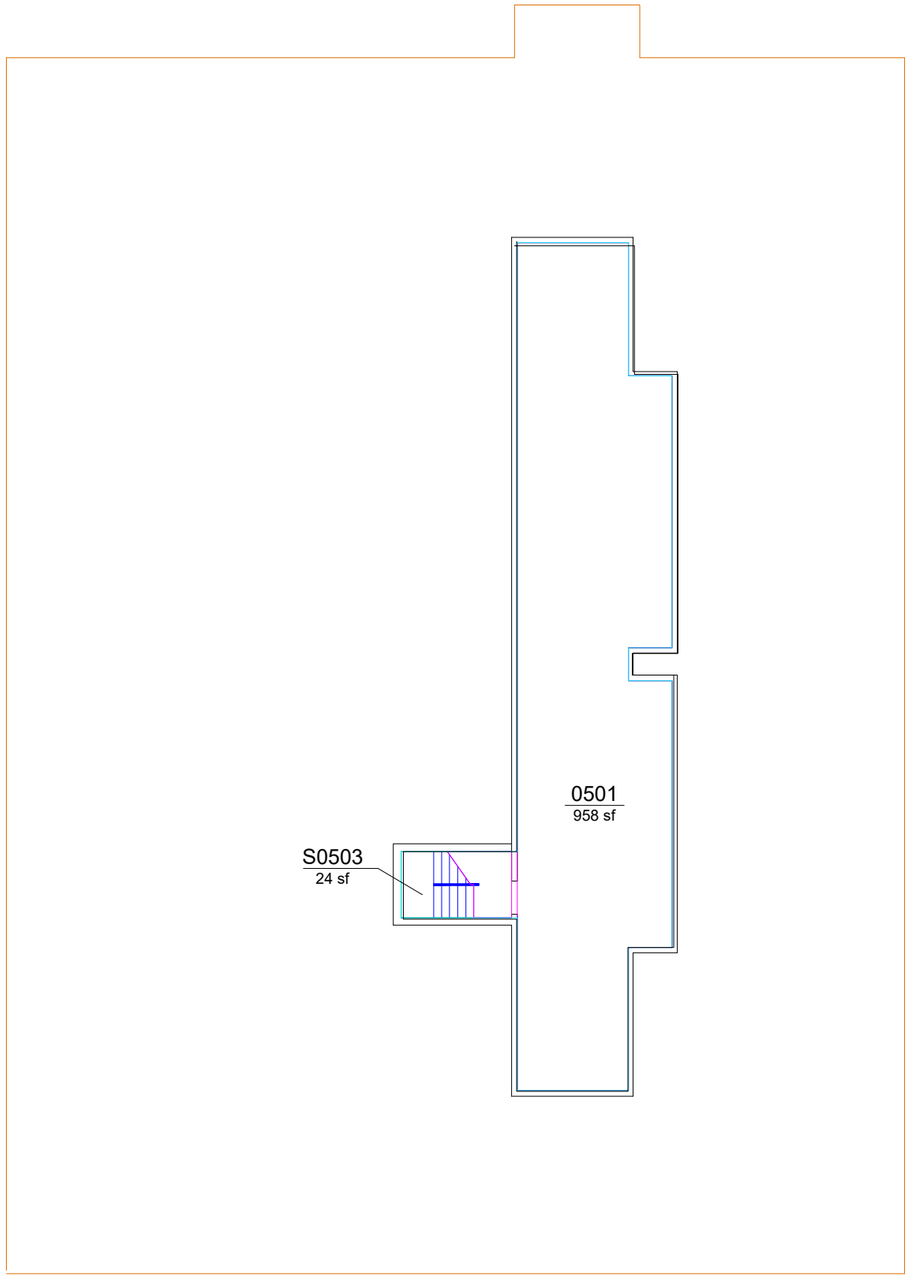
052.038.000 PROJECT NUMBEER

15 DWG. NUMBER

15 OF 18 SHEET

HA 05, 37, 38, 66 to 70 TSI - ACM

HA 005 - Low-pressure steam Pipe Run 4"-8" White
HA 006 - Low-pressure steam Pipe Fitting 4" to 8" White
HA 066 - Hot domestic water Pipe Run 4" to8" Black Mastic Wrap
HA 067 - Heating hot water Pipe Run 4"-8" Black Mastic Wrap,
HA 068 - Chilled water Pipe Run 4"-8" Black Mastic Wrap
HA 069 - Cold domestic water Pipe Run 4"-8" Black Mastic Wrap
HA 070 - Hot domestic water Pipe Run 4"-8" Black Mastic Wrap Recirculating
HA 071 - Chilled water supply Pipe Run 4"-8" Black
HA 072 - Chilled water supply Pipe Fitting 4"-8" Black
HA 073 - Chilled water return Pipe Run 4" - 8" Black
HA 074 - Chilled water return Pipe Fitting 4"-8" Black



FIFTH FLOOR
BUILDING No. 0006

N

0 5' 10' 20'

MEI Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Fourth Floor ACM TSI Location

03-22-2024 DATE

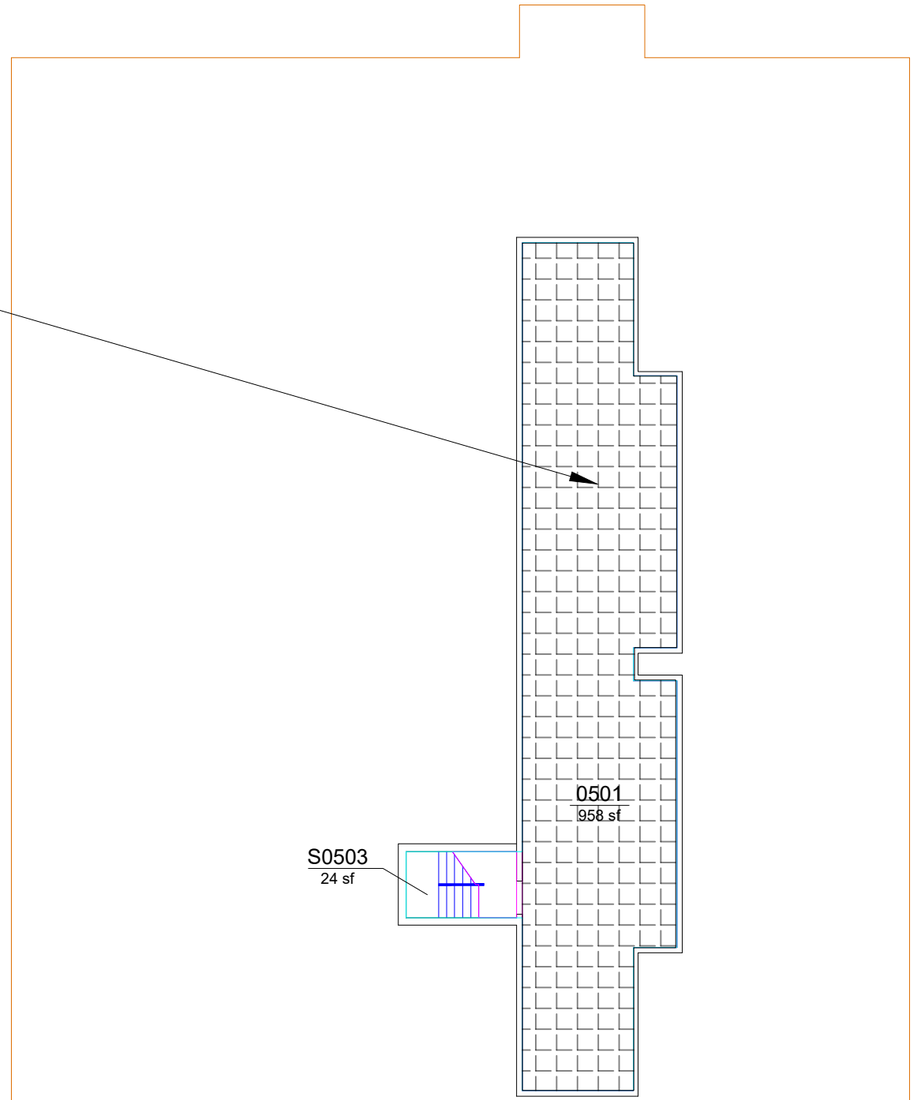
052.038.000 PROJECT NUMBEER

16 DWG. NUMBER

16 OF 18 SHEET

HA 80, Floor mastic underneath Gray floor covering is ACM

Sample No. 1, 2, 3, 4 (Year 2020)



FIFTH FLOOR
BUILDING No. 0006

N

5' 20'
0 10'

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2.
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Fourth Floor

03-22-2024 DATE

052.038.000 PROJECT NUMBEER

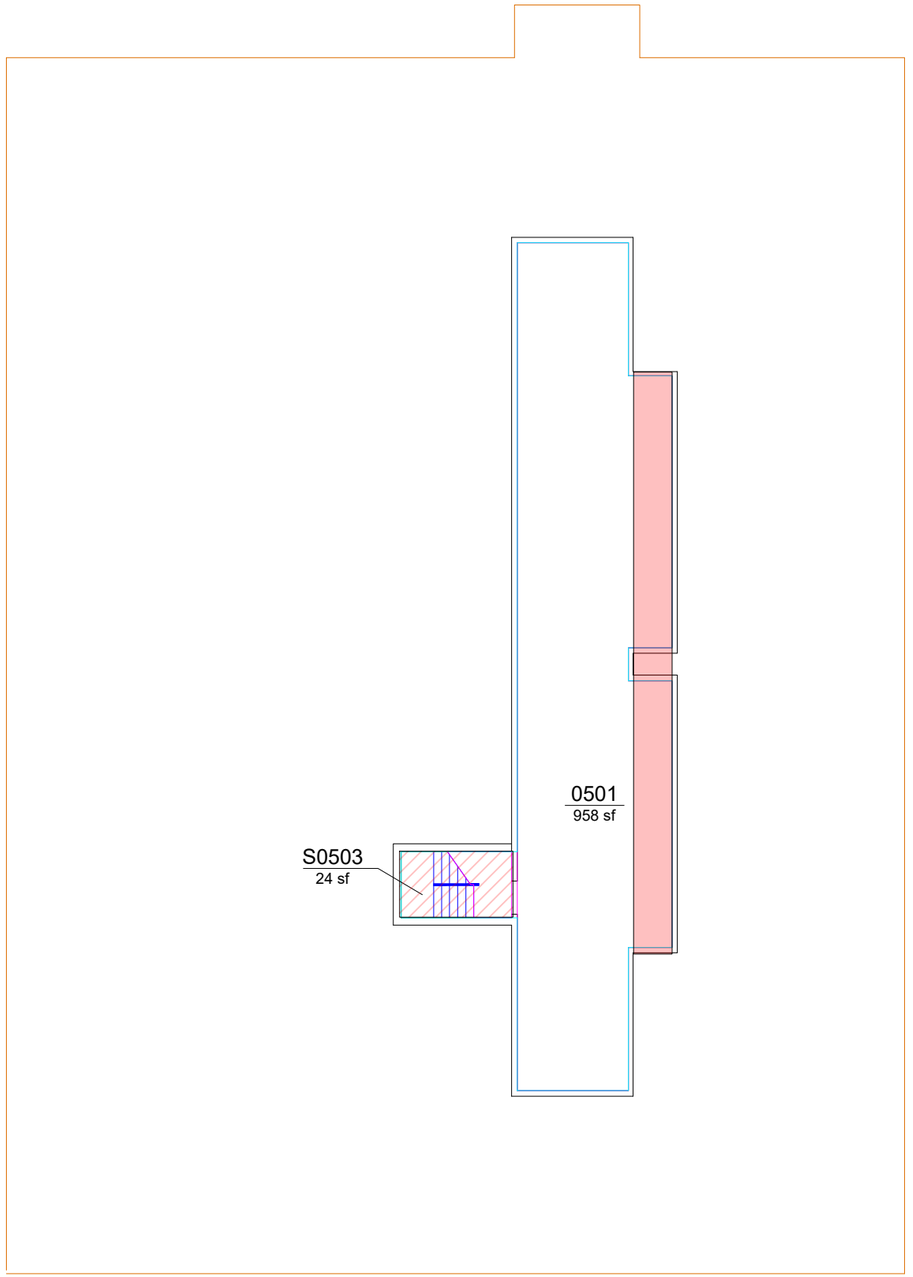
17 DWG. NUMBER

17 OF 18 SHEET

HA 39, 44, 45, 49, 60, 65, 79 - Spray Applied Fireproofing ACM (See HA Description below)

HA 44, 45, 65 was abated, HA 39, 49, 79 - Spray Applied Fireproofing contamination in wall cavities and in Columns

HA 039 - Plaster White (Plaster Non ACM but interior surface contaminated w/ SAF)
HA 044 - Acoustic Tile White
HA 045 - Acoustic Tile White with Wormhole Pattern
HA049 - Dry Wall White (interior surface contaminated w/ SAF)
HA 060 - Acoustic Tile White with Random Holes & Rough Texture
HA 065 - Fireproofing Gray Spray Applied
HA 079 - Fireproofing Gray Spray Applied , Steel Column Encasement, Gray



FIFTH FLOOR
BUILDING No. 0006

N

5' 20'
0 10'

Mihir Environics Inc.
Environmental Health & Safety Consultants
3161 ELIZA ROAD, UNIT # 2
TALLAHASSEE, FL 32308
PHONE: (850) 422-1255 FAX: (850) 422-1866
www.mihirenvironics.com

CLIENT
Florida State University
Facilities - Design & Construction
Mendenhall A - Suite 107-A
Tallahassee, FL 32306-4153

PROJECT NAME
Asbestos Survey Update
Kellogg Research Building
Florida State University
Tallahassee, Florida

DRAWING TITLE
Asbestos Survey Update - Fourth Floor ACM SAF Location

03-22-2024 DATE

052.038.000 PROJECT NUMBEER

18 DWG. NUMBER

18 OF 18 SHEET