

PROJECT MANUAL

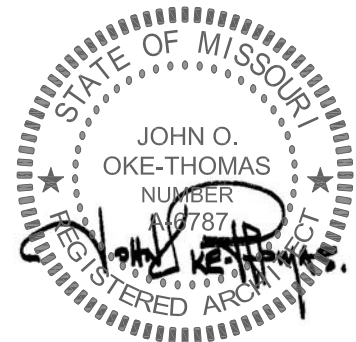
OZARKS TECHNICAL COMMUNITY COLLEGE

1001 EAST CHESTNUT EXPRESSWAY
SPRINGFIELD, MISSOURI 65802

OFFICE RENOVATION IN THE NORMAN K. MYERS TECHNICAL EDUCATION BUILDING

21-1011

8-24-2021



OKE-THOMAS + ASSOCIATES, INC.
ARCHITECTS • PLANNERS • CONTRACTORS

1972 EAST CHESTNUT EXPRESSWAY
SPRINGFIELD, MISSOURI 65802
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Bid Form
Bidder Qualification Form
E-Verify Affidavit
MBE/WBE Good Faith Effort Determination Form
Non-Collusion Affidavit
Contractor's Service Agreement Standard
Annual Wage Order No. 28

RESPONSIBILITY SHEET

PURSUANT TO RSMO. 20 CSR 2030-3.060, I HEREBY SPECIFY THAT THE SECTIONS OF THE PROJECT MANUAL INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THE FOLLOWING:

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Determination Form
Non-Collusion Affidavit
Contractor's Service Agreement
Standard
Annual Wage Order No. 28



I HEREBY DISCLAIM ANY RESPONSIBILITY FOR PLANS, SPECIFICATIONS OR OTHER DOCUMENTS TO BE USED ON THIS PROJECT NOT PREPARED BY ME.

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DOCUMENT 000115 - LIST OF DRAWING SHEETS

1.1 LIST OF DRAWINGS

- A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled below and dated 8-24-2021 as modified by subsequent Addenda and Contract modifications.

**OFFICE RENOVATIONS IN THE NORMAN K. MYERS
TECHNICAL EDUCATION BUILDING**

- B. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:

CVR COVER SHEET

DEMOLITION PLAN

- D1.1 DEMOLITION PLANS - OFFICES
D1.2 DEMOLITION PLANS - CORRIDORS

OVERALL FLOOR PLANS

- A1.1 1ST OVERALL FLOOR PLAN
A1.2 2ND OVERALL FLOOR PLAN

ENLARGED FLOOR PLANS

- A4.1 ENLARGED FLOOR PLAN – SUITE 133
A4.2 ENLARGED FLOOR PLAN – SUITE 233
A4.3 ENLARGED FLOOR PLAN – SUITE 130

REFLECTED CEILING PLANS

- A6.1 REFLECTED CEILING PLANS

DOOR SCHEDULE

- A7.1 DOOR SCHEDULE AND DETAILS
WALL TYPES

ROOM FINISH SCHEDULE

- A9.1 ROOM FINISH SCHEDULE
A9.2 FLOOR FINISH PLAN - OFFICES
A9.3 FLOOR FINISH PLAN - CORRIDORS

ME SHEETS

- ME1 ABBREVIATIONS
ME2 OVERALL 1ST FLOOR PLAN
OVERALL 2ND FLOOR PLAN
ME3 FIRST FLOOR ENLARGED DEMOLITION PLANS
SECOND FLOOR ENLARGED DEMOLITION PLAN

MECHANICAL SHEETS

- M1 FIRST FLOOR PARTIAL HVAC PLANS
SECOND FLOOR PARTIAL HVAC PLAN

ELECTRICAL SHEETS

- E1 FIRST FLOOR PARTIAL LIGHTING PLANS
SECOND FLOOR PARTIAL LIGHTING PLAN
E2 FIRST FLOOR PARTIAL POWER PLANS
SECOND FLOOR PARTIAL POWER PLAN

INSTRUCTIONS TO BIDDERS

General: To be considered. Bids must be made in accordance with these **Instructions to Bidders**.

Project: Office Renovations in the Norman K. Myers Technical Education Building

Project Site Address: Ozarks Technical Community College
Springfield Campus
1001 East Chestnut Expressway

Schedule:

Bid-Date and Time: Thursday, September 23, 2021 at 3:00 p.m.
Ionwave Only, No In-Person Opening

Pre-Bid Meeting: Tuesday, September 7, 2021 at 4:00 p.m.
South Entrance – NKM Building

Intended Award Date: Tuesday, October 12, 2021

Expected Construction Start Date: December 18, 2021

Substantial Completion Date: January 16, 2022

Receipt of Bids: All Bids for the project shall be made upon the form provided by the Owner and/or Engineer. Bids shall be received electronically through the college's IONWAVE bidding system. Bids shall include all freight, overhead and profit, and any other miscellaneous charges relating to the work. The Owner is a tax-exempt entity.

Pre-Bid Meeting: Each Bidder is invited to attend the pre-bid meeting scheduled for 4:00 p.m. on Tuesday, September 7, 2021, to be held on site at the Springfield Campus at the project location along the South Entrance of the NKM Building. The last day of questions for the project during the bidding process should be provided by Thursday, September 16, 2021.

Qualifications of Bidders: Each Bidder shall file with the Owner concurrent with submission of their Bid, the following items:

1. A Bid Form - See Appendix
2. Bid Security (detailed in Section: Instruction To Bidders)
3. Proposed Sub-Contractors List – (Contractor to provide form)
4. Statement of Bidder Qualifications – See Appendix A
5. E-Verify Affidavit – See Appendix A
6. Non-Collusion Affidavit – See Appendix A
7. MBE/WBE/DBE Good Faith Effort Determination Form – See Appendix A

Bid Security: Each bid shall be accompanied with a bid security consisting of a bid bond, certified check, or cashier's check on a solvent bank for 5% of the base bid amount. Bid security shall be made payable without condition to the Owner.

Bid security will be retained by the Owner to whom an award is being considered until either (a) the contract has been executed and bonds have been furnished, (b) the specific time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

The owner reserves the right to reject any and all bids and to waive all informalities in bids. No bids may be withdrawn for a period of 60 days subsequent to the specified time for receipt of bids.

Bidding Procedure: Bids shall be submitted as per this "Invitation to Bid" on forms furnished by the Owner and/or Engineer. A minimum of one original sealed submittal of all requested forms is required at the time of Bid.

Bids shall be submitted with all appropriate blank spaces completed. Numbers shall be stated both in writing and in figures. In case of any discrepancy in the lump sum amount, the amount as expressed in written words shall govern. The signatures shall be without interlineation, alteration, or erasure, unless initialed by the Bidder. Bids shall not contain any recapitulation for the work to be done. If the Bidder is a corporation, the Bid shall contain the legal name of the corporation and shall be signed by a duly authorized officer, and the corporate seal affixed; if a partnership, it shall be signed by one of the partners authorized to execute documents and shall give the names of and addresses of all partners.

Submission of Bids: Bids shall be received only through the college's IONWAVE electronic bidding system.

Any bids received **after the time and date stated** shall be disqualified.

The Owner reserves the right to reject any and all proposals and/or award the work to other than the low bidder, as it best serves its interest.

Modification or Withdrawal of Bids: A bid may not be modified, withdrawn or cancelled by the Bidder during a period of sixty (60) days following the time and date designated for the receipt of Bids, and Bidder so agrees in submitting his Bid.

Examination: Contractors will not be given extra compensation for conditions, which can be determined by examining the site, this set of documents, and any other information herein after referenced.

Questions during the bidding process shall be directed to Blayne Radford, College Director of Project Management, 417-447-4810 or radfordb@otc.edu.

Performance Bond and Payment Bond: A performance bond and payment bond for the full amount of the contract will be required of the successful bidder.

Prevailing Wage Scale: The minimum prevailing wage rates as determined by Missouri Division of Labor Annual Wage Order No. 28 (Greene County) shall be paid. Contractor must pay employees wages and benefits equal to or greater than the established scale. Contractor may be required to submit certified payroll information, on a periodic basis, and a final payroll Affidavit form at close of this project.

E-Verify: Bidder shall furnish an affidavit and documentation affirming the company is enrolled in and participates in E-Verify/Basic Pilot and an affidavit stating the business does not knowingly employ illegal aliens. Example is included in Section 004400 – E-Verify Affidavit.

Subcontractors List: Multiple subcontractors/companies shall not be listed under portions of the work unless each subcontractor/company is performing separate portions of the work; in such case, the portion of work for each shall be listed. GCs are welcome to submit proposed sub-contractors list with bid.

MBE/WBE Goals: The Owner desires Minority Business Enterprise/Women Business Enterprise (MBE/WBE) participation in this Project. Every feasible effort shall be made to include these enterprises as subcontractors. Each bidder must complete and submit the included "Good Faith Effort Determination Form" prior to contract award (Section 00 43 39).

Sales Tax Exemption: Bidders are hereby instructed to submit bids not including sales tax according to the provisions of Section 144.062 RSMo. The selected contractor will receive a Missouri Tax Exemption letter from the Owner to use in purchasing materials on a tax-free basis. It will be the responsibility of the contractor to provide the documentation to any subcontractor. This document will be used solely for purchase of materials being directly incorporated into or consumed in the construction of the work under this contract. Tax certificates can be provided by the owner.

Permit Fees and Special Inspections: City permits, city inspections, are to be included in the contract and paid by the Contractor. The Owner will be responsible for all desired 3rd party investigations, inspections, measurements, and material testing.

Temporary Services: Existing utility services in the building may be utilized.

Insurance: The successful bidder shall, at all times during the term of the Service Agreement and any extension(s), at Contractor's sole cost and expense, obtain and maintain the following policies of insurance, naming the Owner Parties as "additional insured's" using Insurance Services Office, Inc.'s additional insured form CG 20 26 11 85, or its equivalent, which shall provide the Owner Parties are additional insured's with respect to liability arising out of Contractor's ongoing and completed operations and providing that no such insurance be cancelled, non-renewed or materially changed without at least thirty (30) days written notice to Owner by certified mail to Owner's notice address specified herein. All policies of insurance required of Contractor under this Agreement shall be obtained from reputable insurers licensed to do business in the State of Missouri and have an A.M. Best rating of at least A-VIII. A legally enforceable Certificate of Insurance on all insurance policies required of Contractor under this Agreement, shall be deposited with Owner promptly on or before the commencement of the term of this Agreement.

Commercial General Liability – with a limit of not less than \$2,000,000 for each occurrence and a \$2,000,000 general aggregate limit.

- a) An endorsement that includes property damage coverage for property in the care, custody or control of the Contractor.
- b) In the instances where Contractor's services include the use of "pollutants" as defined by the General Liability policy, the policy must include an endorsement removing the absolute pollution exclusion and adding broadened pollution coverage for bodily injury and property damage resulting from the discharge, dispersal, seepage, migration, release or escape of "pollutants", and providing coverage on behalf of the "additional insured" including ongoing and completed operations.

Commercial Automobile Liability – in the amount of \$1,000,000 combined single limit for bodily injury and property damage, covering all owned, non-owned, or hired automobiles used in the course of the Contractor's business.

Workers' Compensation – in compliance with any and all statutes requiring such coverage in the State of Missouri.

Employer's Liability – in a minimum amount of \$1,000,000 each accident, \$1,000,000 each employee, \$1,000,000 policy aggregate.

Such other insurance as may be required from time to time by Owner.

Liquidated Damages: Work for this project shall be substantially completed by the date and time specified by the Owner or as proposed by the Bidder on the Bid Form. Liquidated damages of \$500 per calendar day will apply after the date of substantial completion.

END OF SECTION 002113

SECTION 004143 - BID FORM

Date: _____

Proposal of _____ (herein called "Bidder")

*a corporation organized and existing under the laws of the State

of _____, *a partnership consisting

of _____, or *an individual trading

as _____.

(*insert name of corporation, partnership, or individual as applicable.)

To: Ozarks Technical Community College
1001 E. Chestnut Expressway
Springfield Missouri, 65802
Phone 417-447-4806
Fax 417-447-4804

The undersigned bidder, in compliance with your Invitation to Bid for the following project:

Office Renovations

In accordance with the Contract Documents and having visited the site of the proposed work and being familiar with all conditions that may affect the proposed work, including availability of labor and materials, hereby proposes to furnish all labor materials, tools, equipment, machinery, equipment rental, transportation, superintendence, perform all work, provide all services, and to construct all work in accordance with the Contract Documents set forth herein, and at the prices stated below. These prices are to cover all expenses incurred in performance of the work required for the Contract stated below.

The Bidder acknowledges that Addenda Nos. _____ have been received and considered in the preparation of this proposal.

TOTAL BASE BID PROPOSAL: Bidder agrees to perform all related Work of the Plans, Specifications, and Addenda for the sum of:

Dollars (\$_____).

ALTERNATE NO ONE PROPOSAL:

Bidder agrees to perform all related Work of the Plans, Specifications, and Addenda for the sum of:

Dollars (\$_____).

Bid shall have: NO MINIMUM CHARGES, NO FUEL SURCHARGES, NO MISCELLANEOUS CHARGES ON BILLING THAT HAVE NOT BEEN PRE-AUTHORIZED BY SIGNATURE OF THE DEPARTMENTAL SUPERVISOR.

The Bidder agrees that this Bid cannot be withdrawn during the period of 60 calendar days after the date of opening of Bids.

If notified of the acceptance of the Proposal within 60 calendar days, the Undersigned agrees to execute a Contract for the work on the form of "AIA Document A101-2007", within 7 calendar days after receipt of notification. Contract shall be based upon all Contract Documents, including all Addenda.

The Undersigned agrees that the Bid Security shall become the property of the Owner in the event the Bidder fails to execute the Contract and the Bonds within the time set forth above, as liquidated damages for the delay and additional expense to Owner caused thereby.

The Undersigned understands that his competence and responsibility, and that of his proposed subcontractors, as well as any other factors of interest to Owner, may be a consideration in making the award.

Owner reserves the right to reject any or all Proposals, to accept or reject Alternate Proposals and waiver technicalities concerning the Proposals received as it may be in his best interest to do.

By submission of this bid, bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid, with any other bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and substantially complete the project no later than August 10, 2020 and fully complete the project no later than October 30, 2020.

Bidder further agrees to pay as liquidated damages, the sum of \$500.00 for each calendar day after the date of substantial completion.

Respectfully submitted,

Firm Name: _____

Address: _____

E-mail Address: _____

Phone Number: _____

By: _____

Title: _____

Date: _____

SEAL (If by Corporation)

END OF SECTION 00 41 43

DOCUMENT 004313 - BID SECURITY FORMS**1.1 BID FORM SUPPLEMENT**

- A. A completed bid bond form is required to be attached to the Bid Form.

1.2 BID BOND FORM

- A. AIA Document A310, "Bid Bond," is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.
- B. Copies of AIA standard forms may be obtained from The American Institute of Architects; www.aia.org/contractdocs/purchase/index.htm; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 004313

**SECTION 012300
ALTERNATES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION**3.1 SCHEDULE OF ALTERNATES****Alternate No. 1:**

- A. Remove the existing pony wall system outside of Office 130 along with the eastern wall of Office 130 per the demolition plan on sheet D1.1.
- B. Remove the existing carpet, vinyl base, ceiling tile and grid to prepare for the new office layout per sheet A4.1.
- C. Remove the existing ceramic tile and prepare the existing slab for new floor finishes per detail 3/A9.2.
- D. Provide new wall systems including metal studs, gypsum board, paint, vinyl wall base, acoustical ceiling grid and tile and all mechanical, electrical and plumbing per the construction documents.
- E. See detail 2/ME3 for the demolition of the existing lighting and mechanical systems for Office 130.
- F. Provide new mechanical system layout per detail 3/M1.
- G. Provide new lighting layout per detail 3/E1.
- H. Provide new power / data layout per detail 3/E2.
- I. Provide new sprinkler system alterations per deferred submittal from a Fire Sprinkler Contractor.

END OF SECTION

DOCUMENT 004373 - PROPOSED SCHEDULE OF VALUES FORM**1.1 BID FORM SUPPLEMENT**

- A. A completed Proposed Schedule of Values form is required to be attached to the Bid Form.

1.2 PROPOSED SCHEDULE OF VALUES FORM

- A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in **excess of five (5) percent of the Contract Sum**.
- B. Arrange schedule of values consistent with format of **AIA Document G703**.
1. Copies of AIA standard forms may be obtained from the American Institute of Architects; <http://www.aia.org/contractdocs/purchase/index.htm>; docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 004373

SECTION 00 73 00 – GENERAL AND SUPPLEMENTARY CONDITIONS

GENERAL

The contract between the Contractor and Owner will be the Owner's "Contractor's Standard Service Agreement" (see copy of agreement in project manual).

SUPPLEMENTARY CONDITIONS

The following Supplements are required in addition to the Contractor's Standard Service Agreement:

Material Substitutions: The Contractor may make substitutions only with the consent of the Owner and after evaluation by the engineer.

Taxes: The Owner will furnish a copy of the Exemption from Missouri Sales and Use Tax letter from the State of Missouri and a Project Exemption Certificate for the construction of this Project that must be provided to all subcontractors, and material suppliers. All invoices must be retained by the Contractor(s) for a period of five (5) years and are subject to audit by the Missouri Department of Revenue.

Contract Time: The Contract Time shall not be extended for adverse weather days as this is an interior renovation.

Insurance & Bonds: The Contractor shall deliver a copy of the required insurance and the Performance and Payment bonds to the owner prior to the commencement of any work. The amount of each bond shall be equal to 100 percent of the Contract Sum.

Payment Procedures: Until final completion, the Owner will pay **ninety-five percent (95%)** of the amount due to the Contractor for General Construction on account of progress payments; **five percent (5%)** shall remain in retainage.

With each Application and Certificate of Payment, submit Partial Waivers and Release of Liens; from the Contractor, subcontractors, sub-subcontractors and suppliers for the construction period covered by the application.

Immediately, upon receipt of each Progress Payment and upon receipt of the Final Payment as provided in Article 9 of the General Conditions, the Contractor shall provide Owner with a statement under oath, acknowledging receipt of such payment and certifying that Contractor has paid all Subcontractors the sums due and owing to Subcontractors as evidenced by the Application for Payment and attached Lien Waivers. Such acknowledgment and certification will be in a form acceptable to the Architect and Owner. Contractor shall not be entitled to receive any further payments pursuant to the Agreement unless and until Contractor is in compliance with the terms of this paragraph. Contractor acknowledges the right of Owner to advise subcontractors and sub-subcontractors that Owner has made a Progress Payment or has made final payment to the Contractor. The Architect may decline to approve any Application for Payment and the owner shall not be required to make any Progress Payments or Final Payment to the contractor if the Contractor is in violation of any term or condition of this Agreement, the General Conditions of the Contract (AIA Document A201), or the Supplementary General Conditions, or if the Contractor fails to timely provide any information reasonably requested by Owner.

Liquidated Damages: If the Contractor refuses, neglects, or fails to complete the Work within the time stated (or Substantial Completion Date) in the Contract, then the Contractor and the Contractor's surety, if any, shall be liable for and shall pay the Owner, not as penalty but as liquidated damages, the sum of Five Hundred (\$500.00) for each calendar day that the Contractor is in default after the time stipulated in the Contract until the Work is Substantially Complete. The Owner may withhold from payments due the Contractor, such amounts as may be assessed as liquidated damages. Upon Substantial and Final Completion of the Work, the Owner may adjust the Contract Sum by the amount of the assessed liquidated damages.

Regulations: The Contractor shall assume all responsibility and costs in complying with Federal, State and Local regulations for Equal Opportunity Employment, Anti-Discrimination, Safety and other Regulations.

Contractor warrants, affirms and agrees that it and its Subcontractors shall comply in all respects with the applicable federal, State of Missouri and local laws, regulations and ordinances during its work on the Project, including but not limited to:

Title VII of the Civil Rights Act of 1964, 42 U.S.C. § 2000e *et seq.*;
The Missouri Human Rights Act, Section 213.010 RSMo *et seq.*;
The Rehabilitation Act of 1973, as amended, 29 U.S.C. § 701, *et seq.*;
The Americans with Disabilities Act of 1990, 29 U.S.C. § 706;
The Labor Management Relations Act of 1947, as amended, 29 U.S.C. § 141, *et seq.*;
The Fair Labor Standards Act of 1938, as amended, 29 U.S.C. § 201, *et seq.*;
The Employee Retirement Income Security Act (ERISA), as amended, 29 U.S.C. § 1001, *et seq.*;
The Occupational Safety and Health Act, as amended, 29 U.S.C. § 651, *et seq.*;
The Age Discrimination in Employment Act, 29 D.S.C. § 621 *et seq.*; Section 290.560 RSMo *et seq.*;
The Missouri Prevailing Wage statute, Section 290.210 RSMo *et seq.*;
All applicable local building and construction codes and ordinances;
The Handicapped Accessibility Requirements;
ANSI A117.1.;
USERRA;
E-Verify Program, DHS, SSA, Section 285.530 RSMo *et seq.*;
EPA's 2008 Lead-Based Paint Renovation, Repair and Painting Program Rule
Safety Training, Section 290.250 RSMo;
Periods of Excessive Unemployment, Sections 290.550 through 290.580 RSMo;
Transient Employers, Sections 285.230 and 285.234 RSMo;
Anti-Discrimination Against Israel Act, Sections 34.600 RSMo;

Examining and Copying the Contractors Records: The Contractor shall permit the Owner or its duly authorized representative to examine and copy books and records of the Contractor relative to charges for extra work, alleged breaches of contract, settlement of claims, or any other matter involving the Contractor's demand for added compensation from the Owner. The Contractor shall also permit such examination and copying of his records as the Owner may deem necessary, excepting papers and records preceding the execution of the Contract that are not a matter of record with the Owner, in order to determine that the Contractor has complied with all laws and regulations pertaining to the Contract, such as but not limited to Labor Compliance, Affirmative Action Program, and Equal Employment Opportunity. The Contractor further agrees that that he shall keep all records relating to this Contract until the expiration of six (6) years after final payment under this Contract is made, or six (6) months after settlement of any disputes whichever may be later. The Contractor further agrees that he and his Subcontractors shall permit the Owner, as its own expense, by its duly authorized representatives, to inspect and audit all their data, records, and files pertaining to this contract.

The contractor shall agree to fully cooperate with any audit or investigation from federal, state, or local law enforcement agencies.

END OF SECTION 007300

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work by Owner.
4. Owner-furnished products.
5. Access to site.
6. Work restrictions.
7. Specification and Drawing conventions.

1.2 PROJECT INFORMATIONA. Project Identification:

1. **Project Location:** Norman K. Myers Building
1001 East Chestnut Expressway
Springfield, Missouri 65802

B. Owner:

1. **Owner's Representative:** Blayne Radford
College Director of Project Management

- C. **Architect:** John Oke-Thomas, AIA
Oke-Thomas + Associates, Inc.
1972 East Chestnut Expressway
Springfield, MO 65802

Project Manager:

Gene Douglas
Oke-Thomas + Associates, Inc.
1972 East Chestnut Expressway
Springfield, MO 65802

- D. **Architect's Consultants:** Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. **MFEC / RTM;** Mechanical, Electrical and Plumbing Engineer
 - a. Jennifer Luce, PE; Engineer of Record

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work for the Project is defined by the Contract Documents and consists of the following:

1. Office Renovation in (3) areas of the Norman K. Meyers Technical Education Building.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.4 WORK BY OWNER

A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

1. All above ceiling and in wall wiring for IT cabling.
2. Office Furniture
3. Fire Alarm

1.5 OWNER FURNISHED PRODUCTS

A. Owner will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner-furnished products and making building services connections.

B. Owner Furnished Products:

1. Office Furniture

1.6 ACCESS TO SITE

A. General: Each Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.7 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On Site Work Hours: Limit work in the existing building to normal business working hours of 6:00 a.m. to 9:00 p.m., Monday through Friday, unless otherwise indicated.
 1. Weekend Hours: Same
 2. Early Morning Hours: 6:00 a.m.
 3. Hours for Utility Shutdowns: As appropriate
- C. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.
- D. Restricted Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

**SECTION 012300
ALTERNATES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION**3.1 SCHEDULE OF ALTERNATES****Alternate No. 1:**

- A. Remove the existing pony wall system outside of Office 130 along with the eastern wall of Office 130 per the demolition plan on sheet D1.1.
- B. Remove the existing carpet, vinyl base, ceiling tile and grid to prepare for the new office layout per sheet A4.1.
- C. Remove the existing ceramic tile and prepare the existing slab for new floor finishes per detail 3/A9.2.
- D. Provide new wall systems including metal studs, gypsum board, paint, vinyl wall base, acoustical ceiling grid and tile and all mechanical, electrical and plumbing per the construction documents.
- E. See detail 2/ME3 for the demolition of the existing lighting and mechanical systems for Office 130.
- F. Provide new mechanical system layout per detail 3/M1.
- G. Provide new lighting layout per detail 3/E1.
- H. Provide new power / data layout per detail 3/E2.
- I. Provide new sprinkler system alterations per deferred submittal from a Fire Sprinkler Contractor.

END OF SECTION

SECTION 012500 - SUBSTITUTION PROCEDURES**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use the form provided in Project Manual under section 012500.1.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.

- g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than (15) days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution at the discretion of the Design/Build project manager.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)**PART 3 - EXECUTION (Not Used)****END OF SECTION 012500**

CONTRACTOR'S SUBSTITUTION REQUEST (After Bidding Phase)
(Use separate form for each request)

Date: _____ Request No.: _____

ARCHITECT

TO: _____

Phone: _____ Fax: _____

PROJECT: _____ Project No.: _____

CONTRACTOR _____

SPECIFIED ITEM: _____

Section: _____ Page: _____ Paragraph: _____ Description: _____

Drawing Number(s): _____ Detail Number(s): _____

The undersigned request consideration of the following:

PROPOSED SUBSTITUTION: _____

REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEMS: _____

SAVINGS or CREDIT to OWNER for ACCEPTING SUBSTITUTE: \$ _____

Attached data includes description, Specifications, Drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

1. Proposed substitution has been fully checked and coordinated with the Contract Documents.
2. The proposed substitution does not affect dimensions shown on Drawings.
3. The proposed substitution does not require revisions to mechanical or electrical work.
4. The undersigned will pay for changes to the building design, including architectural and engineering design, detailing, and construction costs caused by the requested substitution.
5. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
6. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

Attachments: The attached data is furnished herewith for evaluation of the proposed substitution.

☐ Catalog ☐ Drawings ☐ Samples ☐ Reports ☐ Tests ☐ Other: _____

Submitted by: _____

(Firm)

(Authorized Legal Signature)

(Address)

()

(Telephone)

For use by the Architect: ☐ Accepted ☐ Accepted as Noted ☐ Rejected: Submit Specified Item

BY: _____

(Authorized Signature)

Date: _____ Remarks: _____

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue through Construction Manager supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.3 PROPOSAL REQUESTS

- A. Owner Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Architect.

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, Construction Manager will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or AIA Document G701CMA.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 or AIA Document G714CMA. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.6 WORK CHANGE DIRECTIVE

- A. Work Change Directive: Architect may issue a Work Change Directive on EJCDC Document C-940 form included in Project Manual. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect through Construction Manager at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703.

3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five (5) percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
7. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
8. Closeout Costs: Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five (5) percent of the Contract Sum and subcontract amount.
9. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

- B. Payment Application Times: Submit Application for Payment to Architect by the 1st of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 5. Products list (preliminary if not final).
 6. Sustainable design action plans, including preliminary project materials cost data.
 7. Schedule of unit prices.
 8. Submittal schedule (preliminary if not final).
 9. List of Contractor's staff assignments.
 10. List of Contractor's principal consultants.
 11. Copies of building permits.
 12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 13. Initial progress report.
 14. Report of preconstruction conference.
 15. Certificates of insurance and insurance policies.
 16. Performance and payment bonds.
 17. Data needed to acquire Owner's insurance.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706.
 5. AIA Document G706A.
 6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.2 DEFINITIONS

- A. RFI: Request for Information. Request from Owner, Construction Manager, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within (15) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office.. Keep list current at all times.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordination: Each contractor shall cooperate with Project coordinator who shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled activities of other contractors and direction of Project coordinator to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where

limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
 1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.

- b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor-control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Review: Architect will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.
 9. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
 1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
 2. File Preparation Format: IFC and DWG versions operating in Microsoft Windows or Apple Macintosh operating system.
 3. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format and PDF format.
 4. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Digital Data Software Program: Drawings are available in dwg. and ifc. Formats.
 - c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

1.6 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect and Construction Manager.

6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716 or Software-generated form with substantially the same content as indicated above, acceptable to Architect.
1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven (7) working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log bi-monthly. Software log with not less than the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect and Construction Manager.
 4. RFI number including RFIs that were returned without action or withdrawn.

5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's and Construction Manager's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Architect's and Construction Manager's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within seven (7) days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Digital Drawing Software Program: Contract Drawings are available in dwg. format.
 4. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.
 - a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement acceptable to Owner and Architect.
 5. The following digital data files will be furnished for each appropriate discipline:
 - a. Floor plans.
 - b. Reflected ceiling plans.
 - c. Building Sections
- B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

- A. General: Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Construction Manager, and Architect, within three days of the meeting.
- B. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than **(15)** days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Critical work sequencing and long lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Use of web-based Project software.
 - g. Procedures for processing field decisions and Change Orders.
 - h. Procedures for RFIs.
 - i. Procedures for testing and inspecting.
 - j. Procedures for processing Applications for Payment.
 - k. Distribution of the Contract Documents.
 - l. Submittal procedures.
 - m. Preparation of Record Documents.
 - n. Use of the premises
 - o. Work restrictions.
 - p. Working hours.
 - q. Owner's occupancy requirements.
 - r. Responsibility for temporary facilities and controls.
 - s. Procedures for moisture and mold control.
 - t. Procedures for disruptions and shutdowns.
 - u. Construction waste management and recycling.
 - v. Parking availability.
 - w. Office, work, and storage areas.
 - x. Equipment deliveries and priorities.
 - y. First aid.
 - z. Security.
 - aa. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Pre-Installation Conferences: Conduct a pre-installation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, Construction Manager of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility requirements.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than (90) days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of Record Documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Procedures for completing and archiving web-based Project software site data files.

- d. Submittal of written warranties.
 - e. Requirements for completing sustainable design documentation.
 - f. Requirements for preparing operations and maintenance data.
 - g. Requirements for delivery of material samples, attic stock, and spare parts.
 - h. Requirements for demonstration and training.
 - i. Preparation of Contractor's punch list.
 - j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - k. Submittal procedures.
 - l. Coordination of separate contracts.
 - m. Owner's partial occupancy requirements.
 - n. Installation of Owner's furniture, fixtures, and equipment.
 - o. Responsibility for removing temporary facilities and controls.
4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Construction Manager will conduct progress meetings at monthly intervals.
- 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site use.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of Proposal Requests.

- 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- F. Coordination Meetings: Construction Manager will conduct Project coordination meetings at bi-monthly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
1. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site use.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of RFIs.
 - 14) Proposal Requests.
 - 15) Change Orders.
 - 16) Pending changes.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)**PART 3 - EXECUTION (Not Used)****END OF SECTION 013100**

SECTION 013300 - SUBMITTAL PROCEDURES**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and Construction Manager and additional time for handling and reviewing submittals required by those corrections.
1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's and Construction Manager's final release or approval.
 - g. Scheduled dates for purchasing.
 - h. Scheduled date of fabrication.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.4 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
 1. Project name.
 2. Date.
 3. Name of Architect.
 4. Name of Construction Manager.
 5. Name of Contractor.
 6. Name of firm or entity that prepared submittal.
 7. Names of subcontractor, manufacturer, and supplier.
 8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
 9. Category and type of submittal.
 10. Submittal purpose and description.
 11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 12. Drawing number and detail references, as appropriate.
 13. Indication of full or partial submittal.
 14. Location(s) where product is to be installed, as appropriate.
 15. Other necessary identification.
 16. Remarks.
 17. Signature of transmitter.
- B. Options: Identify options requiring selection by Architect.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect and Construction Manager on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Paper Submittals:
 1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect and Construction Manager.
 3. Action Submittals: Submit three (3) paper copies of each submittal unless otherwise indicated. Architect, through Construction Manager, will return two (2) copies.

4. Informational Submittals: Submit two (2) paper copies of each submittal unless otherwise indicated. Architect and Construction Manager will not return copies.
 5. Additional Copies: Unless additional copies are required for final submittal, and unless Architect or Construction Manager observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 6. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using an project specific transmittal form.
- E. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
- F. Submittals for Web-Based Project Software: Prepare submittals as PDF files, or other format indicated by Project software website.

1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Email: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.
 - a. Architect, through Construction Manager, will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
 2. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
 3. Paper: Prepare submittals in paper form, and deliver to Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow (15) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow (15) days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow (21) days for initial review of each submittal.
5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow (15) days for review of each submittal. Submittal will be returned to Construction Manager, through Architect, before being returned to Contractor.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Construction Manager.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's and Construction Manager's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's and Construction Manager's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:

- a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 - a. Three (3) opaque copies of each submittal. Architect and Construction Manager will retain two (2) copies; remainder will be returned.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
 4. Web Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
 5. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
 6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

- a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- 7. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one (1) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, through Construction Manager, will return submittal with options selected.
- 8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three (3) sets of Samples. Architect and Construction Manager will retain two (2) sample sets; remainder will be returned. Mark up and retain one returned sample set as a project record sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 - 2. Manufacturer and product name, and model number if applicable.
 - 3. Number and name of room or space.
 - 4. Location within room or space.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

1.7 DELEGATED DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and three (3) paper copies of certificate, signed and sealed by

the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp or indication in web-based Project software. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 1. Architect and Construction Manager will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S AND CONSTRUCTION MANAGER'S REVIEW

- A. Action Submittals: Architect and Construction Manager will review each submittal, indicate corrections or revisions required, and return it.
 1. PDF Submittals: Architect and Construction Manager will indicate, via markup on each submittal, the appropriate action.
 2. Paper Submittals: Architect and Construction Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
 3. Submittals by Web Based Project Software: Architect and Construction Manager will indicate, on Project software website, the appropriate action.
- B. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect and Construction Manager will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect and Construction Manager.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect and Construction Manager will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 016000 - PRODUCT REQUIREMENTS**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis of Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

1.3 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a comparable product request. Architect will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Form of Architect's Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis of Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
 3. See individual identification sections in Divisions 21, 22, 23, and 26 for additional identification requirements.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 6. Protect stored products from damage and liquids from freezing.
 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
 - a. Submit additional documentation required by Architect through Construction Manager in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.
- B. Product Selection Procedures:
1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: ..."
 2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: ..."
 3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: ..."

4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.
 - a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: ..."
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: ..."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: ..."
7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
 - a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 2. Evidence that proposed product provides specified warranty.
 3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 4. Samples, if requested.
- B. Submittal Requirements: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 013300 "Submittal Procedures" for submitting surveys.
 - 3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 PRE-INSTALLATION MEETINGS

- A. Cutting and Patching Conference: Conduct conference at the Project site.
 - 1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:
 - a. Contractor's superintendent.
 - b. Trade supervisor responsible for cutting operations.
 - c. Trade supervisor(s) responsible for patching of each type of substrate.
 - d. Mechanical, electrical, and utilities subcontractors' supervisors, to the extent each trade is affecting by cutting and patching operations.

2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Cutting and Patching Plan: Submit plan describing procedures at least ten (10) days prior to the time cutting and patching will be performed. Include the following information:
 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 2. Changes to In Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- E. Certified Surveys: Submit two (2) copies signed by land surveyor.
- F. Final Property Survey: Submit two (2) copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

- a. Primary operational systems and equipment.
 - b. Plumbing piping systems.
 - c. Mechanical systems piping and ducts.
 - d. Control systems.
 - e. Communication systems.
 - f. Fire-detection and -alarm systems.
 - g. Electrical wiring systems.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Equipment supports.
 - d. Piping, ductwork, vessels, and equipment.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.
- B. In Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence

and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect and Construction Manager when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Construction Manager.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two (2) permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- E. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.
- 3.7 OWNER-INSTALLED PRODUCTS
- A. Site Access: Provide access to Project site for Owner's construction personnel.
 - B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Pre-installation Conferences: Include Owner's construction personnel at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at final completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of ten (10) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Construction Manager. Label with manufacturer's name and model number.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Construction Manager's and Owner's signature for receipt of submittals.
 5. Submit testing, adjusting, and balancing records.
 6. Submit sustainable design submittals not previously submitted.
 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of ten (10) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements.
 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
 5. Submit final completion photographic documentation.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from highest floor to lowest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect and Construction Manager.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect, through Construction Manager, will return annotated file.
 - b. PDF electronic file. Architect, through Construction Manager, will return annotated file.
 - c. Web based project software upload. Utilize software feature for creating and updating list of incomplete items (punch list).
 - d. Three (3) paper copies. Architect, through Construction Manager, will return two (2) copies.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within fifteen (15) days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit on digital media acceptable to Architect or by uploading to web-based project software site or by email to Architect.
- E. Warranties in Paper Form:
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA ACR. Provide written report on completion of cleaning.
 - p. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls." and Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 024119 - SELECTIVE DEMOLITION**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.
3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready to store.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.4 PRE-INSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at the Project site.
1. Inspect and discuss condition of construction to be selectively demolished.
 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 4. Review areas where existing construction is to remain and requires protection.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Use of elevator and stairs.
 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
1. Before selective demolition, Owner will remove the following items:
- a. To be determined and introduced before start of construction.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:
- 1.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS**2.1** PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION**3.1** EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
 - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
 - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain fire watch during and for at least one (1) hour after flame-cutting operations.
 6. Maintain adequate ventilation when using cutting torches.
 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area on-site.
 5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- B. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.9 SELECTIVE DEMOLITION SCHEDULE

- A. Remove: See demolition plans for details.
- B. Remove and Salvage: See demolition plans for details.
- C. Remove and Reinstall: See demolition plans for details.
- D. Existing to Remain: See demolition plans for details.
- E. Dismantle: See demolition plans for details.

END OF SECTION 024119

SECTION 072100 - THERMAL INSULATION**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
1. Glass fiber blanket.
 2. Glass fiber board.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each product, for tests performed by a qualified testing agency.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturers written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS**2.1 GLASS FIBER BLANKET**

- A. Glass Fiber Blanket, Unfaced: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.
- B. Glass Fiber Blanket, Kraft Faced: ASTM C 665, Type II (nonreflective faced), Class C (faced surface not rated for flame propagation); Category 1 (membrane is a vapor barrier).
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. [CertainTeed Corporation.](#)
- b. [Johns Manville; a Berkshire Hathaway company.](#)
- c. [Knauf Insulation.](#)
- d. [Owens Corning.](#)

2.2 INSULATION FASTENERS

- A. Adhesively Attached, Angle Shaped, Spindle-Type Anchors: Angle welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.

- 1. Manufacturers: Subject to compliance with requirements, provide products by the following:

- a. [Gemco.](#)

2.3 ACCESSORIES

- A. Insulation for Miscellaneous Voids:

- 1. Glass Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 4. Attics: Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
 5. For metal framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
 6. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:
 - a. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.
 - b. Exterior Walls: Set units with facing placed toward exterior of construction as indicated on Drawings.
 - c. Interior Walls: Set units with facing placed toward areas of high humidity.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
1. Glass Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft..
 2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

3.4 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 079200 - JOINT SEALANTS**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Silicone joint sealants.
2. Non-staining silicone joint sealants.

B. Related Requirements:

1. Section 079100 "Preformed Joint Seals" for preformed compressible foam and precured joint seals.
2. Section 079219 "Acoustical Joint Sealants" for sealing joints in sound-rated construction.

1.2 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at the project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.

- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

- D. Joint Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.

- B. Product Test Reports: For each kind of joint sealant, for tests performed by a qualified testing agency.

- C. Field Adhesion Test Reports: For each sealant application tested.

- D. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- B. Product Testing: Test joint sealants using a qualified testing agency.
1. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.
- C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.6 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content: Sealants and sealant primers shall comply with the following:
1. Architectural sealants shall have a VOC content of 250 g/L or less.
 2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 /L or less.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range

2.2 SILICONE JOINT SEALANTS

- A. **Silicone, S, NS, 100/50, NT:** Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
1. **Products:** Subject to compliance with requirements, provide the following:
 - a. [GE Construction Sealants; Momentive Performance Materials Inc](#); SCS2700 SilPruf LM.
- B. **Silicone, S, NS, 50, NT:** Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. [Adfast](#); Adseal 4580 series.
 - b. [Dow Corning Corporation](#); Dow Corning® 791 Silicone Weatherproofing Sealant.
 - c. [Pecora Corporation](#); [896-TBS] [PCS].
 - d. [Sika Corporation; Joint Sealants](#); [Sikasil WS-295] [Sikasil WS-295 FPS].
- C. **Silicone, S, NS, 35, NT:** Single-component, nonsag, plus 35 percent and minus 35 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 35, Use NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. [Dow Corning Corporation](#); Dow Corning® Contractors Weatherproofing Sealant.
 - b. [GE Construction Sealants; Momentive Performance Materials Inc](#); SWS.
- D. **Silicone, S, NS, 25, NT:** Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. [Dow Corning Corporation](#); DOW CORNING® 758 SILICONE WEATHER BARRIER SEALANT.
 - b. [GE Construction Sealants; Momentive Performance Materials Inc](#); [SCS2350] [SSG4000 UltraGlaze] [SSG4000AC UltraGlaze].
 - c. [Pecora Corporation](#); [896 HIS] [896FC].
 - d. [Sherwin-Williams Company \(The\)](#); White Lightning Silicone Ultra All Purpose Sealant.
- E. **Silicone, Acid Curing, S, NS, 25, NT:** Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. [Adfast](#); Adseal 4800.
 - b. [Bostik, Inc](#); Chem-Calk 1200.
 - c. [Dow Corning Corporation](#); DOW CORNING® 999A SILICONE GLAZING SEALANT.
 - d. [Pecora Corporation](#); Pecora 860.
 - e. [Sika Corporation; Joint Sealants](#); Sikasil-GP.

- F. **Silicone, S, NS, 100/50, T, NT:** Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Uses T and NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. **Dow Corning Corporation;** DOW CORNING® NS PARKING STRUCTURE SEALANT.
 - b. **Pecora Corporation;** [301 NS] [311 NS].
 - c. **Sika Corporation; Joint Sealants;** Sikasil 728 NS.
- G. **Silicone, S, NS, 50, T, NT:** Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Uses T and NT.
1. **Products:** Subject to compliance with requirements, provide the following:
 - a. **Dow Corning Corporation;** [DOW CORNING® 799 SILICONE GLASS AND METAL BUILDING SEALANT] [Dow Corning® Contractors Concrete Sealant].
- H. **Silicone, S, NS, 25, T, NT:** Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Uses T and NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. **Pecora Corporation;** Pecora AVB Silicone.
 - b. **Sika Corporation; Joint Sealants;** Sikasil-N Plus.
- I. **Silicone, S, P, 100/50, T, NT:** Single-component, pourable, plus 100 percent and minus 50 percent movement capability traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade P, Class 100/50, Uses T and NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. **Pecora Corporation;** [300 SL] [310 SL].
 - b. **Sika Corporation; Joint Sealants;** Sikasil 728 SL.
- J. **Silicone, S, P, 25, T, NT:** Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade P, Class 25, Uses T and NT.
1. **Products:** Subject to compliance with requirements, provide the following:
 - a. **May National Associates, Inc.; a subsidiary of Sika Corporation;** [Bondaflex Sil 200 MJS] [Bondaflex Sil 200 SC].
- K. **Silicone, M, P, 100/50, T, NT:** Multicomponent, pourable, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type M, Grade P, Class 100/50, Uses T and NT.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. **May National Associates, Inc.; a subsidiary of Sika Corporation;** Bondaflex Sil 728 RCS.

- b. [Sika Corporation; Joint Sealants](#); Sikasil 728 RCS.

2.3 NON-STAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.
- B. [Silicone, Nonstaining, S, NS, 100/50, NT](#): Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
 - 1. [Products](#): Subject to compliance with requirements, provide one of the following:
 - a. [Pecora Corporation](#); Pecora 890FTS/TXTR.
 - b. [Sika Corporation; Joint Sealants](#); [Sikasil WS-290] [Sikasil WS-290 FPS].
 - c. [Tremco Incorporated](#); Spectrem 1.
- C. [Silicone, Nonstaining, S, NS, 50, NT](#): Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
 - 1. [Products](#): Subject to compliance with requirements, provide one of the following:
 - a. [Adfast](#); Adseal 4580 series.
 - b. [Dow Corning Corporation](#); [DOW CORNING® 756 SMS BUILDING SEALANT] [Dow Corning® 795 Silicone Building Sealant].
 - c. [GE Construction Sealants; Momentive Performance Materials Inc](#); Silpruf NB.
 - d. [Pecora Corporation](#); [Pecora 864NST] [Pecora 895NST] [Pecora 898NST].
 - e. [Sika Corporation; Joint Sealants](#); Sikasil WS-295.
 - f. [Tremco Incorporated](#); [Spectrem 2] [Spectrem 3].
- D. [Silicone, Nonstaining, S, NS, 100/50, T, NT](#): Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Uses T and NT.
 - 1. [Products](#): Subject to compliance with requirements, provide the following:
 - a. [Dow Corning Corporation](#); Dow Corning® 790 Silicone Building Sealant.
- E. [Silicone, Nonstaining, M, NS, 50, NT](#): Nonstaining, multicomponent, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type M, Grade NS, Class 50, Use NT.
 - 1. [Products](#): Subject to compliance with requirements, provide the following:
 - a. [Tremco Incorporated](#); Spectrem 4-TS.

2.4 JOINT SEALANT BACKING

- A. [Sealant Backing Material, General](#): Non-staining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Adfast.
 - b. Alcot Plastics Ltd.
 - c. BASF Corp. - Construction Chemicals.
 - d. Construction Foam Products; a division of Nomaco, Inc.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C closed-cell material with a surface skin and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, 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. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
 - d. Exterior insulation and finish systems.
 3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.
 4. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C 1193.
 5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 FIELD QUALITY CONTROL

- A. Field Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
 4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.

5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

- B. Evaluation of Field Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT SEALANT SCHEDULE

- A. Joint Sealant Application: Interior joints in horizontal traffic surfaces (JS-#4).
 1. Joint Locations:
 - a. Isolation joints in cast-in-place concrete slabs.
 - b. Control and expansion joints in stone flooring.
 - c. Control and expansion joints in brick flooring.
 - d. Control and expansion joints in tile flooring.
 - e. Other joints as indicated on Drawings.
 2. Joint Sealant: Urethane, S, P, 25, NT
 3. Joint Sealant Color: As selected by Architect from manufacturer's full range of colors
- B. Joint Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces (JS-#5).
 1. Joint Locations:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls.
 - b. Tile control and expansion joints.
 - c. Vertical joints on exposed surfaces of [unit masonry] [concrete] [walls] [and] [partitions].
 - d. Other joints as indicated on Drawings.
 2. Joint Sealant: Urethane, S, NS, 25, NT
 3. Joint Sealant Color: As selected by Architect from manufacturer's full range of colors

- C. Joint Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces not subject to significant movement (JS-#6).
1. Joint Locations:
 - a. Control joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances.
 - c. Other joints as indicated on Drawings.
 2. Joint Sealant: Acrylic latex
 3. Joint Sealant Color: As selected by Architect from manufacturer's full range of colors

END OF SECTION 079200

SECTION 079219 - ACOUSTICAL JOINT SEALANTS**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes acoustical joint sealants.
- B. Related Requirements:
 - 1. Section 079200 "Joint Sealants" for elastomeric, latex, and butyl-rubber-based joint sealants for non-acoustical applications.

1.2 ACTION SUBMITTALS

- A. Product Data: For each acoustical joint sealant.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each kind and color of acoustical joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Acoustical-Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each kind of acoustical joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.
- B. Sample Warranties: For special warranties.

1.4 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace acoustical joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 - PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Provide acoustical joint-sealant products that effectively reduce airborne sound transmission through perimeter joints and openings in building construction, as demonstrated by testing representative assemblies according to ASTM E 90.
1. Sealant shall have a VOC content of 250 g/L or less.

2.2 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard non-sag, paintable, non-staining latex acoustical sealant complying with ASTM C 834.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Everkem Diversified Products, Inc.
 - b. Franklin International.
 - c. GE Construction Sealants; Momenive Performance Materials Inc.
 - d. Hilti, Inc.
 - e. Pecora Corporation.
 - f. Tremco Incorporated.
 - g. USG Corporation.
 2. Colors of Exposed Acoustical Joint Sealants: As selected by Architect from manufacturer's full range of colors.
- B. Acoustical Sealant for Concealed Joints: Manufacturer's standard non-sag, nondrying, non-hardening, non-skinning, non-staining, gunnable, synthetic-rubber acoustical sealant.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Pecora Corporation.
 - b. Serious Energy Inc.

2.3 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by acoustical joint sealant manufacturer where required for adhesion of sealant to joint substrates.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine joints indicated to receive acoustical joint sealants, with Installer present, for compliance with requirements for joint configuration, 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. Surface Cleaning of Joints: Clean out joints immediately before installing acoustical joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where recommended by acoustical-joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF ACOUSTICAL JOINT SEALANTS

- A. Comply with acoustical joint-sealant manufacturer's written installation instructions unless more stringent requirements apply.
- B. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations. Comply with ASTM C 919, ASTM C 1193, and manufacturer's written recommendations for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.
- C. Acoustical Ceiling Areas: Apply acoustical joint sealant at perimeter edge moldings of acoustical ceiling areas in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of acoustical joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect acoustical joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are

without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated acoustical joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079219

SECTION 081213 - HOLLOW METAL FRAMES**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes:
 - 1. Interior standard steel frames.
- B. Related Requirements:
 - 1. Section 081113 "Hollow Metal Doors and Frames" for hollow-metal doors and frames.
 - 2. Section 087100 "Door Hardware" for door hardware for hollow metal doors.

1.2 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to SDI A250.8.

1.3 COORDINATION

- A. Coordinate anchorage installation 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.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.4 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at the project site.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each frame type.
 - 2. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 3. Locations of reinforcement and preparations for hardware.
 - 4. Details of each different wall opening condition.

5. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
 6. Details of anchorages, joints, field splices, and connections.
 7. Details of accessories.
 8. Details of moldings, removable stops, and glazing.
- C. Samples for Initial Selection: For hollow-metal frames with factory-applied color finishes.
- D. Samples for Verification:
1. Finishes: For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
 2. Fabrication: Prepare Samples approximately 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction. Show profile, corner joint, floor and wall anchors, and silencers.
- E. Product Schedule: For hollow metal frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of hollow-metal frame assembly, for tests performed by a qualified testing agency.
- B. Oversize Construction Certification: For assemblies required to be fire-rated and exceeding limitations of labeled assemblies.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.
1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal frames vertically under cover at Project site with head up. Place on minimum 4-inch-high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Baron Metal Industries Inc.; an Assa Abloy Group company.

2. [Ceco Door; ASSA ABLOY.](#)
3. [DKS Steel Door & Frame Systems, Inc.](#)
4. [Mesker Door Inc.](#)
5. [Republic Doors and Frames.](#)
6. [Security Metal Products; a brand of ASSA ABLOY.](#)
7. [Steelcraft; an Allegion brand.](#)
8. [Steward Steel Door & Frame Division.](#)

2.2 PERFORMANCE REQUIREMENTS

- A. Fire Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings and temperature rise limits indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
 1. Smoke- and Draft-Control Assemblies: Provide assemblies with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
 2. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
- B. Fire-Rated, Borrowed-Lite Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.

2.3 STANDARD STEEL FRAMES

- A. Construct hollow-metal frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Interior Frames: SDI A250.8. At locations indicated in the Door and Frame Schedule
 1. Materials: Metallic coated steel sheet, minimum thickness of 0.053 inch
 2. Sidelite and Transom Frames: Fabricated from same thickness material as adjacent door frame.
 3. Construction: Full profile welded
 4. Exposed Finish: Prime

2.4 BORROWED LITES

- A. Fabricate of metallic coated steel sheet, minimum thickness of 0.053 inch
- B. Construction: Full profile welded
- C. Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of metal of the same or greater thickness as metal as frames.
- D. Provide countersunk, flat- or oval head exposed screws and bolts for exposed fasteners unless otherwise indicated.

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.
3. Post installed Expansion Anchor: Minimum 3/8-inch diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at top of underlayment.

D. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M; hot-dip galvanized according to ASTM A 153/A 153M, Class B.

2.6 MATERIALS

A. Cold Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

E. Power Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

F. Glazing: Comply with requirements in Section 088000 "Glazing."

2.7 FABRICATION

A. Hollow Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

1. Sidelite 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 welding, or by rigid mechanical anchors.
2. Provide countersunk, flat or oval head exposed screws and bolts for exposed fasteners unless otherwise indicated.

3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double Door Frames: Drill stop in head jamb to receive two door silencers.
- B. Hardware Preparation: Factory prepare hollow-metal frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 1. Reinforce frames to receive non-templated, mortised, and surface-mounted door hardware.
 2. Comply with BHMA A156.115 for preparing hollow-metal frames for hardware.
- C. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted hairline joints.
 1. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 2. Provide fixed frame moldings on outside of exterior and on secure side of interior frames. Provide loose stops and moldings on inside of hollow-metal frames.
 3. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
 4. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

2.8 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.
- B. Factory Finish: Clean, pretreat, and apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, complying with SDI A250.3.
 1. Color and Gloss: As selected by Architect from manufacturer's full range

PART 3 - EXECUTION

3.1 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. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap frames to receive non-templated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. General: Install hollow-metal frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions. Comply with SDI A250.11.
- B. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - 1. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - 2. Install frames with removable stops located on secure side of opening.
- C. Fire Rated Openings: Install frames according to NFPA 80.
- D. Floor Anchors: Secure with post-installed expansion anchors.
 - 1. Floor anchors may be set with power-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.
- E. Solidly pack mineral fiber insulation inside frames.
- F. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- G. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

3.3 CLEANING AND TOUCHUP

- A. Prime Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- B. Metallic Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- C. Factory Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.
- D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 08121

SECTION 081416 - FLUSH WOOD DOORS**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Solid core doors with plastic laminate faces.
2. Factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Requirements:

1. Section 088000 "Glazing" for glass view panels in flush wood doors.
2. Section 099123, "Interior Painting"

1.2 PRE-INSTALLATION MEETINGS**A. Pre-installation Conference: Conduct conference at the project site.****1.3 ACTION SUBMITTALS****A. Product Data: For each type of door. Include details of core and edge construction, louvers, and trim for openings. Include the factory finishing specifications.****B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:**

1. Dimensions and locations of blocking.
2. Dimensions and locations of mortises and holes for hardware.
3. Dimensions and locations of cutouts.
4. Undercuts.
5. Requirements for veneer matching.
6. Doors to be factory finished and finish requirements.
7. Fire protection ratings for fire-rated doors.

C. Samples for Initial Selection: For plastic laminate door faces and factory finished doors.**D. Samples for Verification:**

1. Plastic laminate, 6 inches (150 mm) square, for each color, texture, and pattern selected.

1.4 INFORMATIONAL SUBMITTALS**A. Sample Warranty: For special warranty.**

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42 by 84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: To match the existing Maiman Company Door systems.
 - 1. Thermal Fused ; Neer Veneer
- B. Manufacturers: Subject to compliance with requirements, as an alternate, provide products by one of the following:
 - 1. [Algoma Hardwoods, Inc.](#)
 - 2. [Eggers Industries.](#)
 - 3. [General Veneer Manufacturing Co.](#)
 - 4. [Graham Wood Doors; ASSA ABLOY Group company.](#)
 - 5. [Lambton Doors.](#)
 - 6. [Marshfield DoorSystems, Inc.](#)
 - 7. [Mohawk Flush Doors, Inc.](#)
 - 8. [Oshkosh Door Company.](#)
 - 9. [VT Industries Inc.](#)
 - 10. [Warnock Hersey](#)

- C. Source Limitations: Obtain flush wood doors indicated to be blueprint matched with paneling and wood paneling from single manufacturer.

2.2 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Standards."
1. Provide AWI Quality Certification Labels indicating that doors comply with requirements of grades specified.
 2. Contract Documents contain selections chosen from options in quality standard and additional requirements beyond those of quality standard. Comply with those selections and requirements in addition to quality standard.
- B. Adhesives: Do not use adhesives that contain urea formaldehyde.
- C. Adhesives: Use adhesives that meet the testing and product 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. Composite Wood Products: Products shall be made without urea formaldehyde.
- E. WDMA I.S.1-A Performance Grade:
1. Heavy Duty unless otherwise indicated.
 2. Extra Heavy Duty: Public toilets, janitor's closets, assembly spaces and exits.
 3. Standard Duty: Closets (not including janitor's closets) and private toilets.
- F. Fire Rated Wood Doors: Doors 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 NFPA 252.
1. Oversize Fire Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
 2. Temperature Rise Limit: At vertical exit enclosures 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. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 4. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
 5. Pairs: Provide fire retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
- G. Smoke and Draft Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.
- H. Particleboard Core Doors:
1. Particleboard: ANSI A208.1, Grade LD-1

2. Particleboard: Straw based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
3. Blocking: Provide wood blocking in particleboard core doors as needed to eliminate through bolting hardware follows:
 - a. 5 inch top rail blocking, in doors indicated to have closers.
 - b. 5 inch bottom rail blocking, in exterior doors and doors indicated to have kick, mop, or armor plates.
 - c. 5 inch mid-rail blocking, in doors indicated to have exit devices.
4. Provide doors with glued wood stave cores instead of particleboard cores for doors indicated to receive exit devices.

I. Mineral Core Doors:

1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire protection rating indicated.
2. Blocking: Provide composite blocking with improved screw holding capability approved for use in doors of fire protection ratings indicated as needed to eliminate through bolting hardware as follows:
 - a. 5-inch top rail blocking.
 - b. 5-inch bottom rail blocking, in doors indicated to have protection plates.
 - c. 5-inch mid-rail blocking, in doors indicated to have armor plates.
 - d. 4-1/2-by-10-inch lock blocks and 5-inch mid-rail blocking, in doors indicated to have exit devices.
3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw holding capability and split resistance. Comply with specified requirements for exposed edges.
 - a. Screw Holding Capability: 475 lbf per WDMA T.M.-10.

2.3 PLASTIC LAMINATE FACED DOORS

A. Interior Solid Core Doors:

1. Grade: Premium
2. Plastic Laminate Faces: High pressure decorative laminates complying with NEMA LD 3, Grade HGS
3. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of products
4. Exposed Vertical and Top Edges: Hardwood edges for staining to match faces, Hardwood edges for painting or Plastic laminate that matches faces, applied before faces
5. Core: Particleboard
6. Construction: Three plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before faces are applied. Faces are bonded to core using a hot press.
7. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before faces and crossbands are applied. Faces are bonded to core using a hot press.
8. WDMA I.S.1-A Performance Grade: Heavy Duty and Standard Duty

2.4 LIGHT FRAMES AND LOUVERS

- A. Metal Frames for Light Openings in Fire Rated Doors: Manufacturer's standard frame formed of 0.048-inch thick, cold rolled steel sheet; factory primed for paint, with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated.

2.5 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 1. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 - 2. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
- C. Openings: Factory cut and trim openings through doors.
 - 1. Light Openings: Trim openings with moldings of material and profile indicated.
 - 2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 - 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
 - 1. Install fire-rated doors according to NFPA 80.
 - 2. Install smoke- and draft-control doors according to NFPA 105.

- C. Job Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.
 - a. Comply with NFPA 80 for fire-rated doors.
 - b. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
 2. Bevel fire-rated doors 1/8 inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.
- D. Factory Fitted Doors: Align in frames for uniform clearance at each edge.
- E. Factory Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 088000 - GLAZING**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes:
 - 1. Glass for interior borrowed lite's.
 - 2. Glazing sealants and accessories.
- B. Related Requirements:
 - 1. Section 088813 "Fire Resistant Glazing."

1.2 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- C. IBC: International Building Code.
- D. Interspace: Space between lites of an insulating glass unit.

1.3 COORDINATION

- A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.4 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at the project site.
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review temporary protection requirements for glazing during and after installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.
- C. Glazing Accessory Samples: For sealants and colored spacers, in 12-inch lengths. Install sealant samples between two strips of material representative in color of the adjoining framing system.

- D. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings. See sheet A7.1.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, manufacturers of insulating glass units with sputter-coated, low-E coatings.
- B. Product Certificates: For glass.
- C. Product Test Reports: For tinted glass, coated glass, insulating glass and glazing sealants, for tests performed by a qualified testing agency.
 - 1. For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period.
- D. Sample Warranties: For special warranties.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications for Insulating Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved and certified by coated-glass manufacturer.
- B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.
- C. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.
- D. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
 - 1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F.

1.10 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
1. Warranty Period: Ten (10) years from date of Substantial Completion.
- B. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.
1. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AGC Glass Company North America, Inc.
 2. Cardinal Glass Industries.
 3. GGI; General Glass International.
 4. Guardian Glass; SunGuard.
 5. Oldcastle BuildingEnvelope™.
 6. Pilkington North America.
 7. Trulite Glass & Aluminum Solutions, LLC.
 8. Vetrotech Saint-Gobain.
 9. Viracon, Inc.
 10. Vitro.
- B. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
1. Obtain tinted glass from single source from single manufacturer.
 2. Obtain reflective-coated glass from single source from single manufacturer.
- C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
 2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
 3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
 4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated.
- D. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 GLASS PRODUCTS

- A. Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.
- B. Ultra-clear Float Glass: ASTM C 1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent and solar heat gain coefficient of not less than 0.87.
- C. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

2.5 GLAZING TAPES

- A. Back Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; non-staining and non-migrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.

2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.6 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, with requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.7 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
 - a. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces
- B. Clean-cut or flat grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.
- C. Grind smooth and polish exposed glass edges and corners.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 2. Presence and functioning of weep systems.
 3. Minimum required face and edge clearances.
 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches.
1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

- I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until right before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without

developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

- E. Install gaskets so they protrude past face of glazing stops.

3.6 CLEANING AND PROTECTION

- A. Immediately after installation remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
 - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

3.7 MONOLITHIC GLASS SCHEDULE

- A. **Glass Type GL-1:** Clear fully tempered float glass.
 - 1. Minimum Thickness: 6 mm
 - 2. Safety glazing required.

END OF SECTION 088000

SECTION 088813 – FIRE RESISTANT GLAZING**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Fire protection rated glazing.

1.2 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

1.3 COORDINATION

- A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Glass Samples: For each type of glass product; 12 inches square.
- C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For installers.
- B. Product Certificates: For each type of glass and glazing product, from manufacturer.
- C. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install fire-resistant glazing until spaces are enclosed and weather tight and temporary HVAC system is operating and maintaining ambient temperature conditions at occupancy levels during the remainder of the construction period.

1.9 WARRANTY

- A. Manufacturer's Special Warranty on Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
- B. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; deterioration of glazing materials; or other defects in construction.

2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organization below unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."

- B. Safety Glazing Labeling: Permanently mark glazing with certification label of the Safety Glazing Certification Council. Label shall indicate manufacturer's name, type of glass, glass thickness, and safety glazing standard with which glass complies.

2.4 GLASS PRODUCTS

- A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.
- B. Ultraclear Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear), with visible light transmission not less than 91 percent.
- C. Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class I (clear) unless otherwise indicated, Quality-Q3.
 - 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

2.5 FIRE PROTECTION RATED GLAZING

- A. Fire Protection Rated Glazing: Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on positive-pressure testing according to NFPA 257 or UL 9, including the hose-stream test, and shall comply with NFPA 80.
 - 1. Fire protection rated glazing required to have a fire-protection rating of 20 minutes shall be exempt from the hose-stream test.
- B. Fire Protection Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name; test standard; whether glazing is permitted to be used in doors or openings; if permitted in openings, whether or not glazing has passed the hose-stream test; whether or not glazing meets 450 deg F (250 deg C) temperature-rise limitation; and the fire-resistance rating in minutes.
- C. Fire Protection Rated Tempered Glass: 10-mm thickness, fire-protection-rated tempered glass; and complying with 16 CFR 1201, Category II.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. AGC Glass Company North America, Inc; PyroEdge-20.
 - b. SAFTI FIRST Fire Rated Glazing Solutions; [SuperLite I] [SuperLite I-W] [SuperLite I-XL] [SuperLite I-XL IGU] [SuperLite X-90].
 - c. Technical Glass Products; Fireglass20.
 - d. Vetrotech Saint-Gobain; SSG Pyroswiss US.

2.6 FIRE RESISTANCE RATED GLAZING

- A. Fire Resistance Rated Glazing: Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire-resistance ratings indicated, based on testing according to ASTM E 119 or UL 263.
- B. Fire Resistance Rated Glazing Labeling: Permanently mark fire-resistance-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's

name, test standard, that the glazing is approved for use in walls, and the fire-resistance rating in minutes.

2.7 GLAZING ACCESSORIES

- A. Provide glazing gaskets, glazing sealants, glazing tapes, setting blocks, spacers, edge blocks, and other glazing accessories that are compatible with glazing products and each other and are approved by testing agencies that listed and labeled fire-resistant glazing products with which products are used for applications and fire-protection ratings indicated.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
 - 1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
 - 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
- C. Perimeter Insulation for Fire Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.

2.9 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with manufacturing and installation tolerances, including those for size, squareness, and offsets at corners, and for compliance with minimum required face and edge clearances.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate fire side and protected side. Label or mark units as needed so that fire side and protected side are readily identifiable. Do not use materials that leave visible marks in the completed work.

3.3 GLAZING, GENERAL

- A. Use methods approved by testing agencies that listed and labeled fire-resistant glazing products.
- B. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials unless more stringent requirements are indicated, including those in referenced glazing publications.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than 50 inches.
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- I. Set glass lites with proper orientation so that coatings face fire side or protected side as specified.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until right before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop, so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- D. Install gaskets so they protrude past face of glazing stops.

3.6 CLEANING AND PROTECTION

- A. Immediately after installation, remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
 - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

3.7 FIRE PROTECTION RATED GLAZING SCHEDULE

- A. **Glass Type GL-#3:** 20-minute fire-protection-rated glazing without hose-stream test; double glazing units with clear gel fill.

END OF SECTION 088813

SECTION 092216 - NON-STRUCTURAL METAL FRAMING**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
1. Non-load bearing steel framing systems for interior partitions.
 2. Suspension systems for interior ceilings and soffits.
 3. Grid suspension systems for gypsum board ceilings.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of code-compliance certification for studs and tracks.
- B. Evaluation Reports: For embossed steel studs and tracks, firestop tracks, post-installed anchors and power-actuated fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

1.4 QUALITY ASSURANCE

- A. Code Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association or the Steel Framing Industry Association or the Steel Stud Manufacturers Association.

PART 2 - PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Fire Test Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.
- B. STC Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- C. Horizontal Deflection: For wall assemblies, limited to 1/240 of the wall height based on horizontal loading of 5 lbf/sq. ft.

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized unless otherwise indicated.

B. Studs and Tracks: ASTM C 645. Use either steel studs and tracks or embossed steel studs and tracks.

1. Steel Studs and Tracks:

- a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) MBA Building Supplies;
 - 2) SCAFCO Steel Stud Company; [Perfect Curve Products] [Priceless Headers & Kwik-Jambs] [SCAFCO Steel Stud and Track] [SoundGuard Wall System].
 - 3) Steel Construction Systems; [Priceless Headers & Kwik-Jambs] [SoundGuard Wall System] [Steel-Con Stud and Track] [Supreme Framing System].
 - 4) Steel Network, Inc. (The);
- b. Minimum Base Metal Thickness: As indicated on Drawings.
- c. Depth: 3-5/8 inches, 6 inches, 4 inches, 2-1/2 inches and 1-5/8 inches as indicated on drawings.

2. Embossed Steel Studs and Tracks: Roll-formed and embossed with surface deformations to stiffen the framing members so that they are structurally equivalent to conventional ASTM C 645 steel studs and tracks.

- a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) ClarkDietrich Building Systems;
 - 2) MBA Building Supplies;
 - 3) Steel Construction Systems; Supreme Framing System.
 - 4) Steel Network, Inc. (The);
- b. Minimum Base Metal Thickness: As indicated on Drawings.
- c. Depth: 3-5/8 inches, 6 inches, 4 inches, 2-1/2 inches and 1-5/8 inches as indicated on drawings.

C. Slip Type Head Joints: Where indicated, provide one of the following:

1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing 1-1/2-inch, 2-inch, 2-1/2-inch, 3-inch minimum vertical movement.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) ClarkDietrich Building Systems; [FTC3] [FTC5].
 - 2) SCAFCO Steel Stud Company; Deflection Clip Series.
 - 3) Steel Construction Systems; Deflection Clip Series.
 - 4) Steel Network, Inc. (The); VertiClip SLD Series.

2. Single Long Leg Track System: ASTM C 645 top track with 2-inch- deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
 3. Double Track System: ASTM C 645 top outer tracks, inside track with 2-inch- deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
 4. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) ClarkDietrich Building Systems; MaxTrak Slotted Deflection Track.
 - 2) MBA Building Supplies; [FlatSteel Deflection Track] [Slotted Deflecto Track].
 - 3) SCAFCO Steel Stud Company; SCAFCO Slotted Leg Track System.
 - 4) Steel Construction Systems; Steel-Con Slotted Leg Track System.
 - 5) Steel Network, Inc. (The); [VertiClip SLD] [VertiTrack VTD].
- D. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. ClarkDietrich Building Systems; [BlazeFrame] [MaxTrak].
 - b. SCAFCO Steel Stud Company; SCAFCO Slotted Leg Track System.
 - c. Steel Construction Systems; Steel-Con Slotted Leg Track System.
 - d. Steel Network, Inc. (The); VertiTrack VT.
- E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. MRI Steel Framing, LLC; Flat Strap and Backing Plate.
 - b. SCAFCO Steel Stud Company; SCAFCO Flat Strap, Blocking, and Backing.
 - c. Steel Construction Systems; Flat Strap and Blocking.
 2. Minimum Base-Metal Thickness: As indicated on Drawings
- F. Cold Rolled Channel Bridging: Steel, 0.0538-inch minimum base-metal thickness, with minimum 1/2-inch- wide flanges.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. ClarkDietrich Building Systems; Spazzer 9200.
 - b. MRI Steel Framing, LLC; U-Channel Bridging.
 - c. SCAFCO Steel Stud Company; SCAFCO CRC Cold Rolled Channel.
 - d. Steel Construction Systems; Steel-Con CRC Cold Rolled Channel.
 2. Depth: As indicated on Drawings
 3. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch- thick, galvanized steel.
- G. Hat Shaped, Rigid Furring Channels: ASTM C 645.
1. Products: Subject to compliance with requirements, provide one of the following:

- a. [ClarkDietrich Building Systems](#); Furring Channel.
 - b. [MRI Steel Framing, LLC](#); Hat-Shaped, Rigid Furring Channels.
 - c. [SCAFCO Steel Stud Company](#); SCAFCO: (Hat) Furring Channel.
 - d. [Steel Construction Systems](#); Steel-Con (Hat) Furring Channel.
 2. Minimum Base Metal Thickness: As indicated on Drawings]
 3. Depth: 7/8 inch, 1-1/2 inches, as indicated on Drawings
- H. Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. [ClarkDietrich Building Systems](#); RC Deluxe.
 - b. [MRI Steel Framing, LLC](#); Resilient Furring Channel (RC-1).
 - c. [SCAFCO Steel Stud Company](#); [Kwik RC] [Serenity-1 RC].
 - d. [Steel Construction Systems](#); RC 1/Serenity.
 2. Configuration: Hat shaped.
- I. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges.
1. Depth: 3/4 inch, as indicated on Drawings
 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch.
 3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.
- J. Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-metal thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. [ClarkDietrich Building Systems](#); Z-Furring Channel.
 - b. [MRI Steel Framing, LLC](#); Z-Shaped Furring.
 - c. [SCAFCO Steel Stud Company](#); Z-Furring.
 - d. [Steel Construction Systems](#); Steel-Con Z Shaped Furring.

2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.
- B. Hanger Attachments to Concrete:
1. Post Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 or AC58 as appropriate for the substrate.
 - a. Uses: Securing hangers to structure.
 - b. Type: Torque controlled, expansion anchor.
 - c. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, unless otherwise indicated.

- d. Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated: Alloy [Group 1] [Group 2] stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.
- 2. Power-Actuated Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.
- D. Flat Hangers: Steel sheet, in size indicated on Drawings
- E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch and minimum 1/2-inch- wide flanges.
 - 1. Depth: 2-1/2 inches, 2 inches and 1-1/2 inches, as indicated on Drawings
- F. Furring Channels (Furring Members):
 - 1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges, 3/4 inch deep.
 - 2. Steel Studs and Tracks: ASTM C 645.
 - a. Minimum Base Metal Thickness: As indicated on Drawings
 - b. Depth: 1-5/8 inches, 2-1/2 inches, 3-5/8 inches, as indicated on Drawings
 - 3. Embossed Steel Studs and Tracks: ASTM C 645.
 - a. Minimum Base-Metal Thickness: As indicated on Drawings
 - b. Depth: 1-5/8 inches, 2-1/2 inches, 3-5/8 inches, as indicated on Drawings
 - 4. Hat Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.
 - a. Minimum Base-Metal Thickness: As indicated on Drawings
 - 5. Resilient Furring Channels: 1/2-inch- deep members designed to reduce sound transmission.
 - a. Configuration: Hat shaped
- G. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct hung system composed of main beams and cross furring members that interlock.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. [Armstrong World Industries, Inc.](#)
 - b. [Chicago Metallic Corporation.](#)
 - c. [USG Corporation.](#)

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
 1. Asphalt Saturated Organic Felt: ASTM D 226/D 226M, Type I (No. 15 asphalt felt), non-perforated.
 2. Foam Gasket: Adhesive backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
 1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.
- B. Coordination with Sprayed Fire Resistive Materials:
 1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling tracks to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches o.c.
 2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that are required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C 841 that apply to framing installation.
 2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.

3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C 844 that apply to framing installation.
 4. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
 - C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
 - D. Install bracing at terminations in assemblies.
 - E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacing's indicated, but not greater than spacing's required by referenced installation standards for assembly types.
 1. Single Layer Application: 16 inches o.c. unless otherwise indicated.
 2. Multilayer Application: 16 inches o.c. unless otherwise indicated.
 3. Tile Backing Panels: 16 inches o.c. unless otherwise indicated.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 1. Slip Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 4. Fire Resistance Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

- a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
- 5. Sound Rated Partitions: Install framing to comply with sound-rated assembly indicated.
- 6. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.
- E. Direct Furring:
 - 1. Screw to wood framing.
 - 2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- F. Z-Shaped Furring Members:
 - 1. Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced 24 inches o.c.
 - 2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
 - 3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.
- G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING CEILING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacing's indicated, but not greater than spacing's required by referenced installation standards for assembly types.
 - 1. Hangers: 48 inches o.c.
 - 2. Carrying Channels (Main Runners): 48 inches o.c.
 - 3. Furring Channels (Furring Members): 16 inches o.c.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacing's that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 5. Do not attach hangers to steel roof deck.
 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire Resistance Rated Assemblies: Wire tie furring channels to supports.
- E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.
- F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Interior gypsum board.
- B. Related Requirements:
 - 1. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For the following products:
 - 1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.
 - 2. Textured Finishes: Manufacturer's standard size for each textured finish indicated and on same backing indicated for Work.
- C. Samples for Initial Selection: For each type of trim accessory and textured finish indicated.
- D. Samples for Verification: For the following products:
 - 1. Trim Accessories: Full size Sample in 12-inch long length for each trim accessory indicated.
 - 2. Textured Finishes: 24" x 24" sample for each textured finish indicated and on same backing indicated for Work.

1.3 QUALITY ASSURANCE

- A. Mockups: Build mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire Resistance Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC Rated Assemblies: For STC rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C 1396/C 1396M.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Corporation.
 - c. Georgia-Pacific Gypsum LLC.
 - d. National Gypsum Company.
 - e. USG Corporation.
 - 2. Thickness: ½ and 5/8 inch.
 - 3. Long Edges: Tapered

- B. Gypsum Board, Type X: ASTM C 1396/C 1396M.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Corporation.
 - c. Georgia-Pacific Gypsum LLC.
 - d. National Gypsum Company.
 - e. USG Corporation.
 2. Thickness: 5/8 inch.
 3. Long Edges: Tapered
- C. Abuse Resistant Gypsum Board: ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Corporation.
 - c. Georgia-Pacific Gypsum LLC.
 - d. National Gypsum Company.
 - e. USG Corporation.
 2. Core: 5/8 inch, Type X
 3. Surface Abrasion: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 4. Indentation: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 5. Soft Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 6. Long Edges: Tapered.
 7. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
- D. Impact Resistant Gypsum Board: ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Corporation.
 - c. Georgia-Pacific Gypsum LLC.
 - d. National Gypsum Company.
 - e. USG Corporation.
 2. Core: 5/8 inch, Type X
 3. Surface Abrasion: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 4. Indentation: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 5. Soft-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 6. Hard-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements according to test in Annex A1.
 7. Long Edges: Tapered.
 8. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

- E. Mold Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture and mold resistant core and paper surfaces.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Gypsum.
 - b. CertainTeed Corporation.
 - c. Georgia-Pacific Gypsum LLC.
 - d. National Gypsum Company.
 - e. USG Corporation.
 2. Core: 5/8 inch, Type X
 3. Long Edges: Tapered.
 4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 SPECIALTY GYPSUM BOARD

- A. Gypsum Board, Type C: ASTM C 1396/C 1396M. Manufactured to have increased fire resistive capability.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. American Gypsum; [1/2" FireBloc® Type C Gypsum Wallboard] [5/8" FireBloc® Type C Gypsum Wallboard] [5/8" M-Bloc® Type C with Mold & Moisture Resistance] [5/8" Type C Exterior Soffit Gypsum Wallboard].
 - b. CertainTeed Corporation; ProRoc Type C.
 - c. Georgia-Pacific Gypsum LLC; Fireguard C.
 - d. National Gypsum Company; Gold Bond Fire-Shield C.
 - e. USG Corporation; [USG Sheetrock® Brand MH Gypsum Base Board Firecode® C] [USG Imperial® Gypsum Base, Firecode® C] [USG Sheetrock® Brand Firecode® C Gypsum Panels].
 2. Thickness: As required by fire resistance-rated assembly indicated on Drawings.
 3. Long Edges: Tapered.
- B. Glass Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Georgia-Pacific Gypsum LLC; DensArmour Plus.
 - b. National Gypsum Company; eXP Interior Extreme.
 - c. USG Corporation; [USG Sheetrock® Brand Glass-Mat Liner Panels Mold Tough®] [USG Sheetrock® Brand Glass-Mat Panels Mold Tough®] [USG Sheetrock® Brand Glass-Mat Panels Mold Tough® AR Firecode® X] [USG Sheetrock® Brand Glass-Mat Panels Mold Tough® VHI Firecode® X].
 2. Core: 5/8 inch, Type X
 3. Long Edges: Tapered.
 4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

- C. Acoustically Enhanced Gypsum Board: ASTM C 1396/C 1396M. Multilayer products constructed of two layers of gypsum boards sandwiching a viscoelastic sound absorbing polymer core.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. National Gypsum Company; SoundBreak XP
 - b. Quiet Solution; Quiet Rock.
 - c. Temple-Inland Building Products by Georgia-Pacific; Comfort Guard Sound Deadening Board.
2. Core: 5/8 inch, regular type or 5/8 inch, Type X
3. Long Edges: Tapered.

2.5 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc
2. Shapes:
 - a. Corner bead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Corner bead: With notched or flexible flanges.

- B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fry Reglet Corporation.
 - b. Gordon, Inc.
 - c. Pittcon Industries.
2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, Alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.6 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.

- B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10 by 10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints, beveled panel edges, and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting type taping compound.
 3. Fill Coat: For second coat, use drying type, all-purpose compound.
 4. Finish Coat: For third coat, use drying type, all-purpose compound.
 5. Skim Coat: For final coat of Level 5 finish, use high build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

2.7 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
1. Adhesives shall have a VOC content of 50 g/L or less.
- C. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.
1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
1. Fire Resistance Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Sealant: Manufacturer's standard non-sag, paintable, non-staining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Hilti, Inc; CP 506 Smoke and Acoustical Sealant.
 - b. Pecora Corporation;
 - c. USG Corporation; SHEETROCK Acoustical Sealant.
 2. Sealant shall have a VOC content of 250 g/L or less.
- F. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine areas and substrates including welded hollow metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. STC Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

- J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:

- 1. Wallboard Type: As indicated on Drawings
- 2. Type X: As indicated on Drawings
- 3. Ceiling Type: As indicated on Drawings
- 4. Mold Resistant Type: As indicated on Drawings
- 5. Type C: As indicated on Drawings

- B. Single Layer Application:

- 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
- 2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
- 3. On Z shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
- 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

- C. Multilayer Application:

- 1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
- 2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
- 3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
- 4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

- D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written instructions and temporarily brace or fasten gypsum panels until fastening adhesive has set.

3.4 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners unless otherwise indicated.
 - 2. Bullnose Bead: Use at outside corners
 - 3. LC-Bead: Use at exposed panel edges
 - 4. L-Bead: Use where indicated
 - 5. U-Bead: Use at exposed panel edges
 - 6. Curved Edge Cornerbead: Use at curved openings.
- D. Aluminum Trim: Install in locations indicated on Drawings

3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 2: Panels that are substrate for tile and Panels that are substrate for acoustical tile
 - 3. Level 3: Where indicated on Drawings
 - 4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
 - 5. Level 5: Where indicated on Drawings
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

3.6 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 095123 - ACOUSTICAL TILE CEILINGS**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Acoustical tiles for interior ceilings.
 - 2. Fully concealed, direct-hung, suspension systems.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.2 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at the Project Site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, 6 inches in size.
- C. Samples for Initial Selection: For components with factory applied finishes.
- D. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:
 - 1. Acoustical Tiles: Set of full-size Samples of each type, color, pattern, and texture.
 - 2. Concealed Suspension-System Members: 6-inch long Sample of each type.
 - 3. Exposed Moldings and Trim: Set of 6-inch long Samples of each type and color.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Ceiling suspension system members.
 - 2. Structural members to which suspension systems will be attached.
 - 3. Method of attaching hangers to building structure.
 - a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.
 - 4. Carrying channels or other supplemental support for hanger-wire attachment where conditions do not permit installation of hanger wires at required spacing.

5. Size and location of initial access modules for acoustical tile.
6. Items penetrating finished ceiling and ceiling-mounted items including the following:
 - a. Lighting fixtures.
 - b. Diffusers.
 - c. Grilles.
 - d. Speakers.
 - e. Sprinklers.
 - f. Access panels.
 - g. Perimeter moldings.
7. Show operation of hinged and sliding components adjacent to acoustical tiles.
8. Minimum Drawing Scale: 1/8 inch = 1 foot

B. Qualification Data: For testing agency.

C. Product Test Reports: For each acoustical tile ceiling, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Evaluation Reports: For each acoustical tile ceiling suspension system and anchor and fastener type, from ICC-ES.

E. Field quality control reports.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Units: Full-size tiles equal to two (2) percent of quantity installed.
2. Suspension System Components: Quantity of each concealed grid and exposed component equal to two (2) percent of quantity installed.

1.7 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical tiles, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

- B. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weather tight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 - 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical tile ceiling installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations:
 - 1. Suspended Acoustical Tile Ceilings: Obtain each type of acoustical ceiling tile and its suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Surface Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame Spread Index: Class A according to ASTM E 1264.
 - 2. Smoke-Developed Index: 50 or less.
- B. 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 or from the listings of another qualified testing agency.

2.3 ACOUSTICAL TILES.

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. [Armstrong World Industries, Inc.](#)
 - 2. [CertainTeed Corporation.](#)
 - 3. [USG Corporation.](#)
- B. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply with ASTM E 1264 classifications as designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.
- C. Color: As selected from manufacturer's full range.

- D. Light Reflectance (LR): Not less than LR indicated in schedule
- E. Ceiling Attenuation Class (CAC): Not less than CAC indicated in schedule
- F. Noise Reduction Coefficient (NRC): Not less than NRC indicated in schedule
- G. Articulation Class (AC): Not less than AC indicated in schedule
- H. Edge/Joint Detail: Beveled, to match existing adjacent tile
- I. Thickness: As indicated in a schedule
- J. Modular Size: 24" x 24"
- K. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273, ASTM D 3274, or ASTM G 21 and evaluated according to ASTM D 3274 or ASTM G 21.

2.4 METAL SUSPENSION SYSTEM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Armstrong World Industries, Inc.
 - 2. USG Corporation.
- B. Metal Suspension System Standard: Provide manufacturer's standard, direct-hung, fully concealed, metal suspension system and accessories of type, structural classification, and finish indicated that complies with applicable requirements in ASTM C 635/C 635M.
 - 1. High Humidity Finish: Where indicated, provide coating tested and classified for "severe environment performance" according to ASTM C 635/C 635M.
- C. Direct Hung, Double Web Suspension System: Main and cross runners roll formed from and capped with cold-rolled steel sheet, pre-painted, electrolytically zinc coated, or hot-dip galvanized, G30 coating designation.
 - 1. Structural Classification: Intermediate duty system.
 - 2. Access: Downward with initial access openings of size indicated below and located throughout ceiling within each module formed by main and cross runners, with additional access available by progressively removing remaining acoustical tiles.
 - a. Initial Access Opening: In each module, As indicated on Drawings

2.5 ACCESSORIES

- A. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
 - 1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to

five times that imposed by ceiling construction, as determined by testing according to ASTM E 488/E 488M or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.

- a. Type: Post-installed expansion and/or Post-installed bonded anchors.
 - b. Corrosion Protection: Carbon-steel components zinc plated according to ASTM B 633, Class SC 1 (mild) service condition.
 - c. Corrosion Protection: Stainless-steel components complying with ASTM F 593 and ASTM F 594, Group 1 Alloy 304 or 316.
2. Power Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E 1190, conducted by a qualified testing and inspecting agency.
- B. Wire Hangers, Braces, and Ties: Provide wires as follows:
1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 2. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304, nonmagnetic.
 3. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch diameter wire.
- C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.
- D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
- E. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch-thick, galvanized-steel sheet complying with ASTM A 653/A 653M, G90 coating designation; with bolted connections and 5/16-inch-diameter bolts.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. [Armstrong World Industries, Inc.](#)
 2. [CertainTeed Corporation.](#)
 3. [Chicago Metallic Corporation.](#)
 4. [Fry Reglet Corporation.](#)
 5. [USG Corporation.](#)
- B. Roll Formed, Sheet Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations complying with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for of suspension-system runners.
1. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
 2. Finish: Painted in color as selected from manufacturer's full range.

- C. Extruded Aluminum Edge Moldings and Trim: Where indicated, provide manufacturer's extruded-aluminum edge moldings and trim of profile indicated or referenced by manufacturer's designations, including splice plates, corner pieces, and attachment and other clips, complying with seismic design requirements.
1. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.
 2. Baked Enamel or Powder Coat Finish: Minimum dry film thickness of 1.5 mils. Comply with ASTM C 635/C 635M and coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.7 ACOUSTICAL SEALANT

- A. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

2.8 MISCELLANEOUS MATERIALS

- A. Acoustical Tile Adhesive: Type recommended in writing by acoustical tile manufacturer, bearing UL label for Class 0-25 flame spread.
1. Adhesives shall have a VOC content of 50 g/L or less.
- B. Staples: 5/16-inch- long, divergent-point staples.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing and substrates to which acoustical tile ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine acoustical tiles before installation. Reject acoustical tiles that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Testing Substrates: Before adhesively bonding tiles to wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.
- B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.
- C. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILINGS

- A. Install suspended acoustical tile ceilings according to ASTM C 636/C 636M, seismic design requirements, and manufacturer's written instructions.
 - 1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required and, if permitted with fire resistance rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacing's that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 - 6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, post-installed mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 - 7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 - 8. Do not attach hangers to steel deck tabs.
 - 9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 - 11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or post-installed anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.
 - 1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 - 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
 - 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Arrange directionally patterned acoustical tiles as follows:
 - 1. Install tile pattern per Interior Designer or Architects direction
- G. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension-system flanges into kerfed edges of tiles so tile-to-tile joints are interlocked.
 - 1. Fit adjoining tiles to form flush, tight joints. Scribe and cut tiles for accurate fit at borders and around penetrations through ceiling.
 - 2. Hold tile field in compression by inserting leaf-type, spring-steel spacers between tiles and moldings, spaced 12 inches o.c.
 - 3. Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

3.4 ERECTION TOLERANCES

- A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet non-cumulative.
- B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 ADJUSTING

- A. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095123

SECTION 096513 - RESILIENT BASE AND ACCESSORIES**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Thermoset-rubber base.
 - 2. Thermoplastic-rubber base.
 - 3. Vinyl base.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches long.
- C. Samples for Initial Selection: For each type of product indicated.
- D. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches long.
- E. Product Schedule: For resilient base and accessory products and locations, see the finished floor plan.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.4 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.6 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F in spaces to receive resilient products during the following periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Products shall 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."

2.2 THERMOSET RUBBER BASE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Burke Mercer Flooring Products; a division of Burke Industries Inc.
 - 2. Flexco.
 - 3. Johnsonite; a Tarkett company.
 - 4. Roppe Corporation, USA.
- B. Product Standard: ASTM F 1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).
 - 1. Style and Location:
 - a. Style A, Straight: Provide in areas with carpet.
 - b. Style B, Cove: Provide in areas with resilient floor coverings.
 - c. Style C, Butt to: Provide in areas indicated.
- C. Thickness: 0.125 inch.
- D. Height: 4 inches
- E. Lengths: Coils in manufacturer's standard length
- F. Outside Corners: Preformed
- G. Inside Corners: Preformed
- H. Colors: As selected from manufacturer's standard colors.

2.3 THERMOPLASTIC RUBBER BASE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armstrong World Industries, Inc.
2. Burke Mercer Flooring Products; a division of Burke Industries Inc.
3. Flexco.
4. Johnsonite; a Tarkett company.
5. Roppe Corporation, USA.
6. VPI Corporation.

B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).

1. Group: I (solid, homogeneous)
2. Style and Location:
 - a. Style A, Straight: Provide in areas with carpet.
 - b. Style B, Cove: Provide in areas with resilient floor coverings.
 - c. Style C, Butt to: Provide in areas indicated.
 - d. Style D, Sculptured: Provide in areas indicated.
- 1) Profile: Manufacturers standard profile

C. Thickness: 0.125 inch

D. Height: 4 inches

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: Preformed

G. Inside Corners: Preformed

H. Colors: As selected from manufacturer's standard colors.

2.4 VINYL BASE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armstrong World Industries, Inc.
2. Burke Mercer Flooring Products; a division of Burke Industries Inc.
3. Flexco.
4. Johnsonite; a Tarkett company.
5. Roppe Corporation, USA.
6. VPI Corporation.

B. Product Standard: ASTM F 1861, Type TV (vinyl, thermoplastic).

1. Group: I solid, homogeneous
2. Style and Location:
 - a. Style A, Straight: Provide in areas with carpet

- b. Style B, Cove: Provide in areas with resilient floor coverings
- C. Minimum Thickness: 0.125 inch
- D. Height: 4 inches
- E. Lengths: Coils in manufacturer's standard length.
- F. Outside Corners: Preformed
- G. Inside Corners: Preformed
- H. Colors and Patterns: As selected from manufacturer's standard colors.

2.5 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex modified, portland cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- C. Do not install resilient products until materials are the same temperature as space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

- D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. Preformed Corners: Install preformed corners before installing straight pieces.
- G. Job-Formed Corners:
 - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 6 inches in length.
 - a. Form without producing discoloration (whitening) at bends.
 - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 6 inches in length.
 - a. Miter or cope corners to minimize open joints.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
 - 1. Remove adhesive and other blemishes from surfaces.
 - 2. Sweep and vacuum horizontal surfaces thoroughly.
 - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096813 - TILE CARPETING**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes modular carpet tile.
- B. Related Requirements:
 - 1. Section 024119 "Selective Demolition" for removing existing floor coverings.
 - 2. Section 096513 "Resilient Base and Accessories" and Section 096519 "Resilient Tile Flooring" for resilient wall base and accessories installed with carpet tile.

1.2 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at the project site.
 - 1. Review methods and procedures related to carpet tile installation including, but not limited to, the following:
 - a. Review delivery, storage, and handling procedures.
 - b. Review ambient conditions and ventilation procedures.
 - c. Review subfloor preparation procedures.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
 - 2. Include manufacturer's written installation recommendations for each type of substrate.
- B. Shop Drawings: For carpet tile installation, plans showing the following:
 - 1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
 - 2. Carpet tile type, color, and dye lot.
 - 3. Type of subfloor.
 - 4. Type of installation.
 - 5. Pattern of installation.
 - 6. Pattern type, location, and direction.
 - 7. Pile direction.
 - 8. Type, color, and location of insets and borders.
 - 9. Type, color, and location of edge, transition, and other accessory strips.
 - 10. Transition details to other flooring materials.

- C. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
 - 1. Carpet Tile: Full-size Sample.
 - 2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch- long Samples.
- D. Samples for Initial Selection: For each type of carpet tile.
 - 1. Include Samples of exposed edge, transition, and other accessory stripping involving color or finish selection.
- E. Samples for Verification: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
 - 1. Carpet Tile: Full-size Sample.
 - 2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch- long Samples.
- F. Product Schedule: For carpet tile. Use same designations indicated on Drawings.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For carpet tile, for tests performed by a qualified testing agency.
- C. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:
 - 1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
 - 2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Carpet Tile: Full-size units equal to five (5) percent of amount installed for each type indicated, but not less than 10 sq. yd..

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified by the International Certified Floorcovering Installers Association at the Commercial II, Master II certification level.

- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 - 1. Build mockups at locations and in sizes shown on Drawings.
 - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with CRI's "CRI Carpet Installation Standard."

1.9 FIELD CONDITIONS

- A. Comply with CRI's "CRI Carpet Installation Standard" for temperature, humidity, and ventilation limitations.
- B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weather tight, wet-work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at levels planned for building occupants during the remainder of the construction period.
- C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.
- D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

1.10 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
 - 1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
 - 2. Failures include, but are not limited to, the following:
 - a. More than 10 percent edge raveling, snags, and runs.
 - b. Dimensional instability.
 - c. Excess static discharge.
 - d. Loss of tuft-bind strength.
 - e. Loss of face fiber.
 - f. Delamination.
 - 3. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS**2.1 CARPET TILE**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Atlas Carpet Mills, Inc.
 2. J&J Invision; J&J Industries, Inc.
 3. Mannington Mills, Inc.
 4. Milliken & Company.
 5. Mohawk Group (The); Mohawk Carpet, LLC.
 6. Patcraft; a division of Shaw Industries, Inc.
 7. Shaw Contract Group; a Berkshire Hathaway company.
 8. Tandus; a Tarkett company.
 9. Interface
- B. Color: As selected by Architect / Interior Designer from manufacturer's full range.
- C. Pattern:
- D. Fiber Content:
- E. Fiber Type:
- F. Pile Characteristic: Level-loop and/or Cut and/or Cut and loop pile.
- G. Yarn Twist:
- H. Yarn Count:
- I. Density: 4z919 oz per cubic yard min (face weight x 36 divided by thickness)
- J. Pile Thickness: 123" min for finished carpet tile according to ASTM D 6859
- K. Stitches: 7 minimum stitches per inch
- L. Gage: 1/10" min ends per inch
- M. Surface Pile Weight:
- N. Total Weight: 14 to 40 oz./sq. yd. for finished carpet tile.
- O. Primary Backing/Back coating: Non-woven
- P. Secondary Backing: Polyurethane cushion or fiberglass reinforced thermoplastic composite with polyethylene underlayment cushion, 5.3 lbs, 2mm thickness, Glueless install
- Q. Backing System:
- R. Size:
- S. Applied Treatments:

1. Soil Resistance Treatment: Manufacturer's standard treatment
2. Antimicrobial Treatment: Manufacturer's standard treatment_that protects carpet tiles as follows:
 - a. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria, not less than 1-mm halo of inhibition for gram-negative bacteria, and no fungal growth, according to AATCC 174.

T. Performance Characteristics:

1. Appearance Retention Rating: Heavy traffic, 3.0 and severe traffic, 3.5 minimum according to ASTM D 7330.
2. Critical Radiant Flux Classification: Not less than 0.45 W/sq. cm according to NFPA 253.
3. Dry Breaking Strength: Not less than 100 lbf according to ASTM D 2646.
4. Tuft Bind: Not less than 6.2 lbf according to ASTM D 1335.
5. Delamination: Not less than 4 lbf/in. according to ASTM D 3936.
6. Dimensional Tolerance: Within 1/32 inch of specified size dimensions, as determined by physical measurement.
7. Dimensional Stability: 0.2 percent or less according to ISO 2551 (Aachen Test).
8. Noise Reduction Coefficient (NRC): 0.5 according to ASTM C 423.
9. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.
10. Colorfastness to Light: Not less than 4 after 40 AFU (AATCC fading units) according to AATCC 16, Option E.
11. Electrostatic Propensity: Less than 3.5_kV according to AATCC 134.

2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, non-staining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.
 1. Adhesives shall have a VOC content of 50 g/L or less.
 2. Adhesive shall comply with the testing and product 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."
- C. Metal Edge/Transition Strips: Extruded aluminum with anodized aluminum finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance.

- B. Examine carpet tile for type, color, pattern, and potential defects.
- C. Concrete Slabs: Verify that finishes comply with requirements specified in Section 033000 "Cast-in-Place Concrete" and that surfaces are free of cracks, ridges, depressions, scale, and foreign deposits.
 - 1. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft. and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - a. Anhydrous Calcium Chloride Test: ASTM F 1869. Proceed with installation only after substrates have maximum moisture vapor emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
 - b. Relative Humidity Test: Using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum (75) percent relative humidity level measurement.
 - c. Perform additional moisture tests recommended in writing by adhesive and carpet tile manufacturers. Proceed with installation only after substrates pass testing.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with CRI's "Carpet Installation Standards" and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.
- B. Use trowelable leveling and patching compounds, according to manufacturers written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch, unless more stringent requirements are required by manufacturer's written instructions.
- C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.
- D. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

- A. General: Comply with CRI's "CRI Carpet Installation Standard," Section 18, "Modular Carpet" and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: As recommended in writing by carpet tile manufacturer.
- C. Maintain dye lot integrity. Do not mix dye lots in same area.
- D. Maintain pile direction patterns: Per ID specs and indicated on drawings
- E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosing's. Bind or seal cut edges as recommended by carpet tile manufacturer.

- F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, non-staining marking device.
- H. Install pattern parallel to walls and borders.
- I. Access Flooring: Stagger joints of carpet tiles so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet tile:
 - 1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
 - 2. Remove yarns that protrude from carpet tile surface.
 - 3. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with CRI's "Carpet Installation Standard," Section 20, "Protecting Indoor Installations."
- C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 096813

SECTION 099100 - COMMERCIAL PAINTING**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Commercial painting, including surface preparation, for projects in the United States.
 - 1. Interior commercial painting.

1.2 RELATED SECTIONS - INTERIOR

- A. Division 9 - Drywall - (Walls, Ceilings, Gypsum Board and similar items).

1.3 REFERENCES

- A. US Green Building Council, (USGBC) - Green Seal standards for LEED paint credits.
- B. Occupational Safety and Health Act (OSHA) - Safety Standards.
- C. American National Standards Institute (ANSI) - Performance Standards.
- D. American Society for Testing Materials (ASTM) - Testing Methods.
- E. Master Paint Institute (MPI #) - Established paint categories and standards.
- F. Ozone Transmission Commission (OTC) - Established levels of Volatile Organic Compounds.
- G. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

1.4 DEFINITIONS

- A. Commercial as used in this Section refers to a product well suited for a commercial application.
- B. DFT as used in this Section refers to the Dry Film Thickness of the coating.
- C. Enamel refers to any acrylic or alkyd (oil) base paint which dries leaving an eggshell, pearl, satin, semi-gloss or high gloss enamel finish.
- D. OTC as used in this Section refers to the Ozone Transmission Commission. OTC has established the following VOC levels for the Northeastern United States. Products shall meet the following OTC limits for VOC's.
 - 1. Interior flat paints: 100 grams per liter or less, per gallon.
 - 2. Interior enamels: 150 grams per liter or less, per gallon.
 - 3. Interior stains: 250 grams per liter or less, per gallon.
 - 4. Interior primers: 200 grams per liter or less, per gallon.
- E. Premium as used in this Section refers to the best quality product "top of the line".
- F. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).

- G. Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 and/or 85 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of our products. The list below is provided for general guidance; refer to the technical data sheet for the actual gloss/sheen level for each product.
1. Flat - Less than 5 Percent.
 2. Eggshell - 5 - 20 Percent.
 3. Satin - 20 - 35 Percent.
 4. Semi-Gloss - 30 - 65 Percent.
 5. Gloss - Over 65 Percent.

1.5 SUBMITTALS

- A. Submit under provisions of Section 013000 - Administrative Requirements.
- B. Product Data: Provide a 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.
 2. Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.
- C. Samples: Submit three paper samples, 5 inches by 7 inches (127mm x 178mm) in size, illustrating selected colors for each color and system selected with specified coats cascaded.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.
- B. Installer Qualifications: All products listed in this section are to be applied by a Painting Contractor with a minimum of five years demonstrated experience in surface preparation and field application of the same type and scope as specified.

1.7 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.
- C. Disposal:
1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
 2. Do not incinerate closed containers.
 3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 PROJECT 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 recommended limits.

1.9 WARRANTY

- A. Inspection of all surfaces to be coated must be done by the manufacturer's representative to insure proper preparation prior to application. All thinners, fillers, primers and finish coatings shall be from the same manufacturer to support a product warranty. Products other than those submitted shall be accompanied by a letter stating its fitness for use and compatibility.
- B. At project closeout, provide to the Owner or owner's representative an executed copy of the Manufacturer's standard form outlining the terms and conditions of and any exclusions to their Limited Warranty against Manufacturing Defect.

1.10 EXTRA MATERIALS

- A. At project closeout, supply the Owner or owner's representative one gallon of each product for touch-up purposes. Cans shall be clearly marked with color name, number and type of paint.
- B. At project closeout, provide the color mixture name and code to the Owner or owner's representative for accurate future color matching.

PART 2 PRODUCTS**2.1 MANUFACTURERS**

- A. Acceptable Manufacturer: Benjamin Moore & Co. (United States), which is located at: 101 Paragon Dr; Montvale, NJ 07645; Toll Free Tel: 773-597-8698; Email: jason.walker@benjaminmoore.com; Web: <https://www.benjaminmoore.com>
- B. Requests for substitutions will be considered in accordance with provisions of Section 016000 - Product Requirements.

2.2 MATERIALS - GENERAL

- A. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings 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. 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.
- B. Compatibility: 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.

2.3 MIXING AND TINTING

- A. Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.
- B. Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.
- C. **DRYWALL - (Walls, Ceilings, Gypsum Board and similar items)**
1. **Latex Systems:**
- a. **Satin Finish:**
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Benjamin Moore Ultra Spec 500 Interior Latex Semi-Gloss N539 (0 g/L), MPI # 43, X-Green 43, 146, X-Green 146, 140, X-Green 140, LEED 2009, LEED V4, CHPS Certified
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Interior Latex Semi-Gloss N539 (0 g/L), MPI # 43, X-Green 43, 146, X-Green 146, 140, X-Green 140, LEED 2009, LEED V4, CHPS Certified
- b. **Semi-Gloss System:**
- 1) First Coat: Benjamin Moore Eco Spec WB Primer N372 (0 g/L) MPI # 50, X-Green 50, 149, X-Green 149, LEED V4 CHPS Certified.
 - 2) Second Coat: Benjamin Moore Eco Spec WB Semi-Gloss N376 (0 g/L) MPI # 54, X-Green 54, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Eco Spec WB Semi-Gloss N376 (0 g/L) MPI # 54, X-Green 54, LEED V4, CHPS Certified.
- c. **Eggshell / Satin System:**
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Benjamin Moore Ultra Spec 500 Latex Eggshell N538 (0 g/L), MPI # 52, X-Green 52, 145, X-Green 145, 139, X-Green 139, LEED 2009 LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Latex Eggshell N538 (0 g/L), MPI # 52, X-Green 52, 145, X-Green 145, 139, X-Green 139, LEED 2009, LEED V4, CHPS Certified.
- d. **Eggshell / Satin System:**
- 1) First Coat: Benjamin Moore Eco Spec WB Primer N372 (0 g/L) MPI # 50, X-Green 50, 149, X-Green 149, LEED V4 CHPS Certified.
 - 2) Second Coat: Benjamin Moore Eco Spec WB Eggshell N374 (0 g/L), MPI # 52, X-Green 52, 139, X-Green 139, X-Green 145, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Eco Spec WB Eggshell N374 (0 g/L), MPI # 52, X-Green 52, 139, X-Green 139, X-Green 145, LEED V4, CHPS Certified.
- e. **Low Sheen System:**
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Benjamin Moore Ultra Spec 500 Interior Low Sheen N537 (0 g/L), MPI # 44, X-Green 44, 144, X-Green 144, LEED 2009, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Interior Low Sheen N537 (0 g/L), MPI # 44, X-Green 44, 144, X-Green 144, LEED 2009, LEED V4, CHPS Certified.
- f. **Flat System**
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.

- 2) Second Coat: Benjamin Moore Ultra Spec 500 Interior Latex Flat N536 (0 g/L), MPI # 53, X-Green 53, 143, X-Green 143, LEED 2009, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Interior Latex Flat N536 (0 g/L), MPI # 53, X-Green 53, 143, X-Green 143, LEED 2009, LEED V4, CHPS Certified.
- g. Flat System:
- 1) First Coat: Benjamin Moore Eco Spec WB Primer N372 (0 g/L) MPI # 50, X-Green 50, 149, X-Green 149, LEED V4 CHPS Certified.
 - 2) Second Coat: Benjamin Moore Eco Spec WB Flat N373 (0 g/L), MPI # 53, X-Green 53, 143, X-Green 143, LEED V4.
 - 3) Third Coat: Benjamin Moore Eco Spec WB Flat N373 (0 g/L), MPI # 53, X-Green 53, 143, X-Green 143, LEED V4.

2. **Epoxy System (Water Base):**

- a. Gloss System:
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Corotech Acrylic Epoxy V450 (168 g/L).
 - 3) Third Coat: Corotech Acrylic Epoxy V450 (168 g/L).
- b. Semi-Gloss System:
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Corotech Acrylic Epoxy V450 (168 g/L).
 - 3) Third Coat: Corotech Acrylic Epoxy V450 (168 g/L).
- c. Semi-Gloss System:
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Corotech Pre-Catalyzed Waterborne Epoxy Semi-Gloss V341 (71 g/L), LEED 2009.
 - 3) Third Coat: Corotech Pre-Catalyzed Waterborne Epoxy Semi-Gloss V341 (71 g/L), LEED 2009.
- d. Eggshell/Low Luster System:
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Corotech Pre-Catalyzed Waterborne Epoxy Eggshell V342 (73 g/L), MPI # 151, LEED 2009.
 - 3) Third Coat: Corotech Pre-Catalyzed Waterborne Epoxy Eggshell V342 (73 g/L), MPI # 151, LEED 2009.

D. **DRYWALL - (Walls, Ceilings, Gypsum Board)**

1. Latex Systems:
- a. Gloss Finish:
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified
 - 2) Second Coat: Benjamin Moore Ultra Spec 500 Interior Latex Gloss N540 (0 g/L), MPI # 54, X-Green 54, 147, 147 X-Green, 141, X-Green 141, LEED 2009, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Interior Latex Gloss N540 (0 g/L), MPI # 54, X-Green 54, 147, 147 X-Green, 141, X-Green 141, LEED 2009, LEED V4, CHPS Certified.
- b. Semi-Gloss Finish:
- 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.

- 2) Second Coat: Benjamin Moore Ultra Spec 500 Interior Latex Semi-Gloss N539 (0 g/L), MPI # 43, X-Green 43, 146, X-Green 146, 140, X-Green 140, LEED 2009, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Interior Latex Semi-Gloss N539 (0 g/L), MPI # 43, X-Green 43, 146, X-Green 146, 140, X-Green 140, LEED 2009, LEED V4, CHPS Certified.
 - c. Low Sheen/ Eggshell:
 - 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Benjamin Moore Ultra Spec 500 Latex Eggshell N538 (0 g/L), MPI # 52, X-Green 52, 145, X-Green 145, 139, X-Green 139, LEED 2009, LEED V4, CHPS Certified.
 - 3) Third Coat: Benjamin Moore Ultra Spec 500 Latex Eggshell N538 (0 g/L), MPI # 52, X-Green 52, 145, X-Green 145, 139, X-Green 139, LEED 2009, LEED V4, CHPS Certified.
 - d. Flat Finish:
 - 1) First Coat: Benjamin Moore Ultra Spec 500 Interior Latex Primer N534 (0 g/L), MPI # 50, X-Green 50, 149, X-Green 149, LEED 2009, LEED V4, CHPS Certified.
 - 2) Second Coat: Benjamin Moore Ultra Spec 500 Interior Latex Flat N536 (0 g/L), MPI # 53, X-Green 53, 143, X-Green 143, LEED 2009, LEED V4, CHPS Certified.
2. Epoxy Systems (Water Base):
- a. Gloss Finish:
 - 1) First Coat: Benjamin Moore Fresh Start Multi-Purpose Primer N023 (44 g/L), MPI # 6, 17, X-Green 17, 39, 137, X-Green 137, LEED Credit, CHPS Certified.
 - 2) Second Coat: Corotech Acrylic Epoxy V450 (168 g/L).
 - 3) Third Coat: Corotech Acrylic Epoxy V450 (168 g/L).
 - b. Semi-Gloss Finish:
 - 1) First Coat: Benjamin Moore Fresh Start Multi-Purpose Primer N023 (44 g/L), MPI # 6, 17, X-Green 17, 39, 137, X-Green 137, LEED Credit, CHPS Certified.
 - 2) Second Coat: Corotech Pre-Catalyzed Waterborne Epoxy Semi-Gloss V341 (71 g/L), LEED 2009.
 - 3) Third Coat: Corotech Pre-Catalyzed Waterborne Epoxy Semi-Gloss V341 (71 g/L), LEED 2009.
 - c. Eggshell Finish:
 - 1) First Coat: Benjamin Moore Fresh Start Multi-Purpose Primer N023 (44 g/L), MPI # 6, 17, X-Green 17, 39, 137, X-Green 137, LEED Credit, CHPS Certified.
 - 2) Second Coat: Corotech Pre-Catalyzed Waterborne Epoxy Eggshell V342 (73 g/L), MPI # 151, LEED 2009.
 - 3) Third Coat: Corotech Pre-Catalyzed Waterborne Epoxy Eggshell V342 (73 g/L), MPI # 151, LEED 2009.

PART 3 EXECUTION

3.1 EXAMINATION

- A. The Contractor shall review the product manufacturer's special instructions for surface preparation, application, temperature, re-coat times, and product limitations.
- B. The Contractor shall review product health and safety precautions listed by the manufacturer.

- C. The Contractor shall be responsible for enforcing on site health and safety requirements associated with the Work.
- D. Do not begin installation until substrates have been properly prepared.
- E. Ensure that surfaces to receive paint are dry immediately prior to application.
- F. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify Architect and obtain direction before beginning work.
 - 1. Plaster and Gypsum: 15 percent.
- G. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.
- H. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

3.2 PREPARATION - GENERAL

- A. Clean surfaces thoroughly prior to coating application.
- B. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.
- C. Stains and Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.
- D. Remove Mildew, Algae, and Fungus using materials and methods recommended by coating manufacturer.
- E. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.
- F. Remove or protect adjacent hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings.
- G. Move or protect equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.
- H. Protect adjacent surfaces not indicated to receive coatings.
- I. Prepare surfaces in accordance with manufacturer's instructions for specified coatings and indicated materials, using only methods and materials recommended by coating manufacturer.

3.3 SURFACE PREPARATION

- A. Gypsum Board: Repair cracks, holes and other surface defects with joint compound to produce surface flush with adjacent surfaces.

3.4 APPLICATION - GENERAL

- A. Application of primers, paints, stains or coatings, by the Contractor, will serve as acceptance that surfaces were properly prepared in accordance with the manufacturer's recommendation.

- B. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.
- C. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- D. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet (1.5 m).
- E. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- F. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- G. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.
- H. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

3.5 CLEANING

- A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.
- B. Re-install hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.
- C. Reconnect equipment adjacent to surfaces indicated to receive coatings.
- D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.
- E. Remove protective materials.

3.6 PROTECTION AND REPAIR

- A. Protect completed coating applications from damage by subsequent construction activities until completion of painting project.
- B. Touch-up coatings damaged by subsequent construction activities.
- C. All references to (0 g/L) are Zero VOCs according to EPA Method 24.
- D. The CERTIFIED ASTHMA & ALLERGY FRIENDLY Mark is a Registered Certification Mark of the ASTHMA AND ALLERGY FOUNDATION OF AMERICA and ALLERGY STANDARDS, LTD. Cradle to Cradle Certified is a certification mark licensed by the Cradle to Cradle Products Innovation Institute. These products are not endorsed by or a division of CHPS. These products are provided by Benjamin Moore & Co., not CHPS.

END OF SECTION

SECTION 004143 - BID FORM

Date: _____

Proposal of _____ (herein called "Bidder")

*a corporation organized and existing under the laws of the State

of _____, *a partnership consisting

of _____, or *an individual trading

as _____.

(*insert name of corporation, partnership, or individual as applicable.)

To: Ozarks Technical Community College
1001 E. Chestnut Expressway
Springfield Missouri, 65802
Phone 417-447-4806
Fax 417-447-4804

The undersigned bidder, in compliance with your Invitation to Bid for the following project:

Office Renovations

In accordance with the Contract Documents and having visited the site of the proposed work and being familiar with all conditions that may affect the proposed work, including availability of labor and materials, hereby proposes to furnish all labor materials, tools, equipment, machinery, equipment rental, transportation, superintendence, perform all work, provide all services, and to construct all work in accordance with the Contract Documents set forth herein, and at the prices stated below. These prices are to cover all expenses incurred in performance of the work required for the Contract stated below.

The Bidder acknowledges that Addenda Nos. _____ have been received and considered in the preparation of this proposal.

TOTAL BASE BID PROPOSAL: Bidder agrees to perform all related Work of the Plans, Specifications, and Addenda for the sum of:

Dollars (\$_____).

ALTERNATE NO ONE PROPOSAL:

Bidder agrees to perform all related Work of the Plans, Specifications, and Addenda for the sum of:

Dollars (\$_____).

Bid shall have: NO MINIMUM CHARGES, NO FUEL SURCHARGES, NO MISCELLANEOUS CHARGES ON BILLING THAT HAVE NOT BEEN PRE-AUTHORIZED BY SIGNATURE OF THE DEPARTMENTAL SUPERVISOR.

The Bidder agrees that this Bid cannot be withdrawn during the period of 60 calendar days after the date of opening of Bids.

If notified of the acceptance of the Proposal within 60 calendar days, the Undersigned agrees to execute a Contract for the work on the form of "AIA Document A101-2007", within 7 calendar days after receipt of notification. Contract shall be based upon all Contract Documents, including all Addenda.

The Undersigned agrees that the Bid Security shall become the property of the Owner in the event the Bidder fails to execute the Contract and the Bonds within the time set forth above, as liquidated damages for the delay and additional expense to Owner caused thereby.

The Undersigned understands that his competence and responsibility, and that of his proposed subcontractors, as well as any other factors of interest to Owner, may be a consideration in making the award.

Owner reserves the right to reject any or all Proposals, to accept or reject Alternate Proposals and waiver technicalities concerning the Proposals received as it may be in his best interest to do.

By submission of this bid, bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid, with any other bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and substantially complete the project no later than August 10, 2020 and fully complete the project no later than October 30, 2020.

Bidder further agrees to pay as liquidated damages, the sum of \$500.00 for each calendar day after the date of substantial completion.

Respectfully submitted,

Firm Name: _____

Address: _____

E-mail Address: _____

Phone Number: _____

By: _____

Title: _____

Date: _____

SEAL (If by Corporation)

END OF SECTION 00 41 43

BIDDER QUALIFICATION FORM

(Firm must prepare this statement in the form shown)

The undersigned bidder certifies that the information herein is true, correct, complete and accurate. (Elaboration on the following information or additional information deemed to be useful for evaluation of bidder's capabilities or to prevent misleading representations may be attached to this form.)

Date: _____

Bidder: _____

(Legal Name of Firm)

State of Missouri current registration or license number: _____

Federal ID No. _____

Address: _____

Phone Number: _____ /FAX Number _____

E-Mail Address _____

President: _____ (or Managing Partner, etc.)

Dun and Bradstreet No.(if any) _____

Years in business under present name: _____

List all other names under which your business has operated in last 10 years:

Insurance Company:

Insurance Agent:_____ Phone:

Total staff employed by firm: _____(Break down by Managers and Trades.)

Contracting Specialty (indicate trades in which bidder performs.)

Union affiliations: Local _____ National

Years performing work specialty:

% work performed by Firm's own forces:

Is Bidder in compliance with all applicable EEO requirements?

Yes___ No___ (If the answer is no, please attach summary of details on a separate sheet.)

Bank references:

Address:

Contact name:

Contact phone #:

Has firm or predecessor firm been involved in a bankruptcy or reorganization?

Yes___ No___ (If the answer is yes, please attach summary of details on a separate sheet.)

Bidder should have successfully completed (substantially on-schedule, on-budget) at least three projects of similar size and nature for which they are submitting qualifications. (List projects on a separate sheet with the following information on each and attach hereto.)

List below any/all Contract(s) awarded to Bidder which it has failed to complete: (If applicable, attach separate sheet.)

Project: (Name & Location)

Contract w/:

Brief explanation of cause & resolution:

List on a sheet attached hereto all judgments, claims, arbitration proceedings, or suits pending or outstanding against bidder over the last five (5) years with amount of claim and brief description.

List on a sheet attached hereto all lawsuits or requested arbitration with regard to construction contracts which bidder has initiated within the last five (5) years and brief explanation of claim and outcome.

END OF SECTION

E-VERIFY AFFIDAVIT

Project Name: **Office Renovations**
Ozarks Technical Community College
Springfield Campus

Contractor _____,
being first duly sworn, deposes and says that he/she is _____ of
_____ (sole owner, a partner, president, secretary, etc) the
party making the foregoing Bid is a participating Employer in the Department of Homeland Security (DHS)
E-Verify program for Employment Verification . The Bidder has full understanding of the requirements set
forth in the E-Verify Memorandum of Understanding (MOU), and the Bidder does not knowingly employ
illegal aliens. Upon award of Bid and at the Contract Execution, the successful Bidder shall provide
Ozarks Technical Community College with the following documentation:

1. E-Verify Memorandum of Understanding (MOU)
2. E-Verify Company Profile Page

Signed:

Contractor

Title

Address

Company ID Number

State of

County of

On this _____ day of _____ in the year _____, before me, the undersigned notary public,
personally appeared _____, known to me to be the person(s) whose name(s) is/are subscribed
to the within instrument and acknowledged that he/she/they executed the same for the purposes therein
contained. In witness whereof, I hereunto set my hand and official seal.

Seal of Notary:

Notary Public

END OF SECTION

MBE/WBE GOOD FAITH EFFORT DETERMINATION FORM

The College desires Minority Business Enterprise & Women Business Enterprise (MBE/WBE) participation in this Project. Every feasible effort shall be made to include these enterprises as subcontractors. This form and related attachments shall be completed by the successful Bidder (General Contractor) prior to award and Contract execution. Submit completed documents to the Office of the College Project Manager.

The undersigned submits the following information with respect to the assurance to meet the Owner's goal for MBE/WBE participation.

Name of Project: _____

Name of General Contractor: _____

Provide a list of MBE/WBE Firms contacted in relation to this project (contractor may attach a separate document if necessary):

Provide a list of MBE/WBE Firms that submitted bids in relation to this project (contractor may attach a separate document if necessary):

Provide a list of MBE/WBE Firm bids that were accepted for this project (contractor may attach a separate document if necessary):

Submitted by: _____ Title: _____

Signature: _____

END OF SECTION

NON-COLLUSION AFFIDAVIT

Project Name: **Office Renovations**
Ozarks Technical Community College
Springfield Campus

Contractor _____

_____, being first duly sworn, deposes and says that he/she is _____ of _____ (sole owner, a partner, president, secretary, etc) the party making the foregoing Bid that such Bid is not made in the interest of behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such Bid is genuine and not collusive or sham that said Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham Bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or that any one shall refrain from bidding, that said Bidder has not in any manner, directly or indirectly, sought by agreement, communication or conference with any one to fix the Bid price of said Bidder or any of other Bidder, or to fix any overhead, profit, or cost element of such Bid price, or of that of any other Bidder, or to secure any advantage against the Owner awarding the contract to anyone interested in the proposed contract, that all statements contained in such Bid are true, and further, that said Bidder has not, directly or indirectly, submitted his Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid and will not pay any fee in connection therewith, to any corporation, partnership, company, association, organization, Bid depository, or to any member or agent thereof, or to any other individual except to such person or persons as have a partnership or the financial interest with said Bidder in his general business.

Signed:

Contractor

Title

State of _____

County of _____

On this _____ day of _____ in the year _____, before me, the undersigned notary public, personally appeared _____, known to me to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged that he/she/they executed the same for the purposes therein contained. In witness whereof, I hereunto set my hand and official seal.

Seal of Notary:

Notary Public

END OF SECTION

Direct All Invoices to Ozarks Technical Community CollegeCONTRACTOR'S
SERVICE
AGREEMENT
STANDARD**OZARKS TECHNICAL COMMUNITY COLLEGE****1001 E. Chestnut Expressway, Springfield, MO 65802**

Type of Service		Date	
Contractor		Owner	
Legal Name		Community College District of Central Southwest Missouri, AKA Ozarks Technical Community College	
Trade Name/DBA			
Principal Office Address		Principal Office Address 1001 E. Chestnut Expressway	
City, State, Zip		City, State, Zip Springfield, MO 65802	
Business Phone	Business Fax	Business Phone 417-447-4852	Business Fax 417-447-4856

In consideration of the mutual promises, covenants and agreements set forth, it is agreed by and between the parties as follows:

1. Length of Agreement: (Days, Months, Years)	Agreement Commencement Date	Agreement Ending Date
2. ☐ One-Time Service ☐ Continuous Service	3. Payment Schedule ☐ Detailed in Exhibit A ☐ Other (specify)	4. Total Contract Cost
5. Scope of Services (Detail on Exhibit A if more space is required.)		

6. Contract Term. The term of this Agreement shall commence on the Agreement Commencement Date and shall continue in full force ending on the Agreement Ending Date, unless sooner terminated as herein provided. Notwithstanding anything herein to the contrary, either Owner or Contractor may at any time during the term hereof, or any renewal term, terminate this Agreement on thirty (30) days advance written notice to the other party. In the event this Agreement expires and terminates as hereinabove provided, but Contractor thereafter continues to furnish services or materials to Owner, the same shall continue to be subject to all of the terms and conditions of the Agreement.

7. Renewal. The term of this Agreement shall automatically be renewed with all of the terms and conditions herein contained equally applicable to the renewal term, unless written notice is given by either party to the other, not less than thirty (30) days prior to the expiration of the then current term. HOWEVER, if the term of the Agreement is less than thirty (30) days, either party must give advance notice equal to at least one-half (1/2) of the contract term. One-Time Service Agreements as designated in paragraph 2 shall not be renewable.

8. Payment. Owner shall pay Contractor for all services, labor, materials and equipment furnished hereunder according to the agreed job price and payment schedule set forth herein and/or in Exhibit A attached hereto. In order to receive payment hereunder, Contractor shall furnish Owner with an itemized statement of all charges for which payment is sought, and furnish Owner with vouchers, receipts, affidavits or other proof which may reasonably be requested or required by Owner in order to support Contractor's charges for labor and material. In no event shall Contractor be entitled to receive payment for any item of service or materials hereunder unless and until Contractor first has paid its laborers, subcontractors, materialmen and suppliers for all services, labor, materials and equipment furnished and furnished lien waivers to Owner.

9. Excusable Delay; Changes in Services; Assignment Prohibited; Separate Contracts. All services, labor, materials and equipment to be performed and furnished according to the schedule set forth in Exhibit A, provided however, that Contractor shall not be liable for reasonable delays in performance of any said services through no fault or neglect of Contractor's own, due to inclement weather, unavoidable casualties, acts of God, strikes or shortages of materials. The terms and conditions of this Agreement form shall control in the event of a conflict with terms and conditions in Exhibit A

or any other attachment. It is further understood and agreed by the parties that any additional services, labor, materials or equipment which the parties may deem necessary or deletions of scheduled services shall be furnished only upon written agreement between the parties in advance.

Additional services, if any, shall be paid for at the price agreed upon by the parties, along with the regularly scheduled payments hereunder. Contractor shall be entitled to receive payment only for services actually performed and rendered according to the terms and conditions herein provided. Contractor shall not assign this contract, or its right to payment hereunder, to any other party without Owner's prior written consent, and Contractor shall not delegate any of its duties hereunder, except to subcontractors expressly approved by Owner in writing in advance. Contractor shall be liable and responsible for the services of any and all subcontractors. Owner hereby reserves the right to let other contracts to other contractors for any and all services not expressly set forth herein and/or on Exhibit A, and Contractor will cooperate with any other contractors employed by Owner.

10. Contractor's Warranty and Liability. Contractor warrants and agrees that all materials used and furnished hereunder will be of good quality and suitable for the purpose furnished and that all labor will be done in a competent and workmanlike manner. Contractor shall repair, correct and remedy any defect or deficiency in workmanship and shall replace any defective materials, fixtures or equipment used, installed or placed in or upon the Owner's property, provided that Owner gives Contractor written notice of any such defect within one (1) year after such services have been completed. Contractor shall assign any manufacturers' warranties of duration greater than one (1) year to Owner. Contractor shall be liable for any injury caused to the Owner's property or any persons or property thereon by Contractor or any of its employees or subcontractors in the performance of the services required hereunder. Contractor shall indemnify and hold Owner harmless from any loss, cost, damage, liability or other expense whatsoever that Owner may suffer or incur as the result of a failure of materials and workmanship herein warranted.

Contractor's warranty shall extend to and cover all services, labor and materials furnished by subcontractors and materialmen and Contractor shall be responsible to Owner in all respects for the services of any subcontractors and the material furnished by any materialmen. Contractor shall comply with all applicable laws, ordinances and governmental regulations in the performance of the services required hereunder.

11. Termination of Agreement; Default. In addition to the other rights granted to Owner hereunder, Owner, by giving written notice to Contractor, shall have the right to terminate this Agreement and the employment of Contractor hereunder if Contractor should attempt to assign this Agreement, be adjudged as bankrupt, make a general assignment for the benefit of its creditors, have a receiver appointed, fail to supply enough properly skilled workmen or proper materials to perform the services required hereunder, fail to make prompt payment to subcontractors or for materials or labor, fail to obtain or maintain any of the insurance coverage required hereunder, disregard laws, ordinances or the instructions of Owner, or otherwise be guilty of a breach or violation of any provision of this Agreement, for which termination shall be effective immediately upon the giving of such notice by Owner to Contractor.

Notwithstanding such termination of this Agreement, Owner shall also have, and hereby reserves, its right to recover damages, including, without limitation, consequential and incidental damages, from Contractor for any loss suffered by Owner as a result of any breach or default by Contractor hereunder. Failure or forbearance by Owner to terminate this Agreement upon the occurrence of any breach or violation hereof by Contractor or any other event of default shall not constitute a waiver by Owner of such breach, violation or default on that occasion or upon the occurrence of a similar breach or violation upon a future occasion. If Owner is required to bring or defend any action arising out of this Agreement, or to enforce or defend the provisions hereof, Owner shall recover its reasonable attorney's fees and costs from Contractor.

12. Risk of Loss. All services performed by Contractor hereunder shall be done and performed solely at Contractor's own risk, and it is understood and agreed by the parties that Contractor is an independent contractor and not an agent or employee of Owner.

13. Indemnity.

- (a) To the fullest extent permitted by applicable law, Contractor shall, at Contractor's sole cost and expense, defend, indemnify, and hold harmless Owner, its officers, trustees, members, partners, subsidiaries and any other affiliate entities, and the agents, servants, employees, and independent contractors of such persons or entities (collectively, "Owner Parties") from and against any and all claims, demands, liabilities, obligations, losses, penalties, actions, suits, damages, expenses, disbursements (including legal fees and expenses), or costs of any kind and nature whatsoever for property damage, bodily injury and death brought by third-parties in any way relating to or resulting in whole or in part from Contractor's performance or alleged failure to perform the services under or in connection with this Agreement ("Claims").
- (b) To the fullest extent permitted by applicable law, Contractor shall indemnify and save each of the Owner Parties harmless from any and all Claims that may be brought against any of the Owner Parties by any employee, representative or agent of Contractor, or any legal representative or successor of any employee, representative or agent of Contractor, in any way arising out of or incident to the services rendered or to be rendered under or in connection with this Agreement, irrespective of whether such Claims are the result of the negligence or fault of Owner Parties or anyone for whose acts Owner Parties may be liable.
- (c) The indemnity set forth herein will apply regardless of the active or passive negligence or joint, concurrent, or comparative negligence of any of the Owner Parties and regardless of whether liability without fault or strict liability is imposed or sought to be imposed upon any of the Owner Parties, except to the proportional extent that a final judgment of a court of competent jurisdiction establishes under the comparative negligence principles of the State of Missouri that a Claim was proximately caused by the sole negligence or intentional wrongdoing of an Owner Party, provided, however, that in such event the indemnity will remain valid for all other Owner Parties.
- (d) The provisions of this Section shall survive the expiration or earlier termination of this Agreement until all Claims involving any indemnified matter are fully and finally barred by the applicable statute of limitations.

14. Insurance. The Service Provider shall, at all times during the term of this Agreement and any extension(s), at Service Provider's sole cost and expense, obtain and maintain policies of insurance as shown in paragraphs (a) through (e) below. No such insurance policy is to be cancelled, non-renewed or materially changed without at least thirty (30) days written notice to OTC by Service Provider by certified mail to OTC's notice address specified herein. All policies of insurance required of Service Provider under this Agreement shall be obtained from reputable insurers licensed to do business in the State of Missouri and have an A.M. Best rating of at least A-VIII. A Certificate of Insurance on all insurance policies required of Service Provider under this Agreement, shall be deposited with OTC promptly on or before the commencement of the term of this Agreement. Service Provider and any subcontractor of Service Provider shall maintain such policies until the applicable statute of repose.

- (a) Commercial General Liability – with a limit of not less than \$2,000,000 (\$5,000,000 if any portion of the services to be performed by Service Provider hereunder involves or affects in any way the roof of any building) for each occurrence and a \$2,000,000 (\$5,000,000 if any portion of the services to be performed by Service Provider hereunder involves or affects in any way the roof of any building) general aggregate limit. The General Liability policy should name OTC Parties as Additional Insureds on a primary and non-contributing basis with respects to the Service Providers on-going and completed operations using the Insurance Services Office Additional Insured form or its equivalent. The General Liability policy should include an endorsement that includes property damage coverage for property in the care, custody or control of the Service Provider. In the instances where Service Provider's services include the use of "pollutants" as defined by the General Liability policy, the policy must include an endorsement removing the absolute pollution exclusion and adding broadened pollution coverage for bodily injury and property damage resulting from the discharge, dispersal, seepage, migration, release or escape of "pollutants", and providing coverage on behalf of the "additional insured" including ongoing and completed operations. In the absence of the General Liability carrier providing this coverage, this requirement may be met by the purchase of a Contractor's Pollution Liability policy that provides Additional Insured status for OTC on a

primary and non-contributing basis. Service Provider and its subcontractor(s) policies shall provide for a waiver of subrogation rights against OTC, and its successors assigns, subsidiaries, affiliates, directors, officers and employees, and of any right of the insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy. Service Provider and its subcontractor(s) release and waive any and all rights of recovery against OTC and its successors assigns, subsidiaries, affiliates, directors, officers and employees that Service Provider and its subcontractor(s) may otherwise have or acquire in or from or in any way connected with any loss covered by policies of insurance maintained or required to be maintained by Service Provider and its subcontractor(s) pursuant to this Agreement or because of deductible clauses in, or inadequacy of limits of, any such policies of insurance.

- (b) Commercial Automobile Liability – in the amount of \$1,000,000 combined single limit for bodily injury and property damage, covering all owned, non-owned, or hired automobiles used in the course of the Contractor's business. The Automobile Liability policy should name OTC Parties as Additional Insureds on a primary and non-contributing basis with respects to the Service Providers operations using the Insurance Services Office Additional Insured form or its equivalent.
- (c) Workers' Compensation – in compliance with any and all statues requiring such coverage in the State of Missouri.
- (d) Employer's Liability – in a minimum amount of \$1,000,000 each accident, \$1,000,000 each employee, \$1,000,000 policy aggregate.
- (e) Umbrella Liability – in a minimum amount of \$1,000,000 per occurrence, \$2,000,000 aggregate limit.
- (f) Such other insurance as may be required from time to time by Owner.

15. Waiver of Lien. Contractor, for itself and for all of its subcontractors, mechanics, journeymen, laborers, materialmen and suppliers, does hereby waive the right to hold, claim, assert, file or enforce any mechanic's lien or materialmen's lien or any lien rights whatsoever against Owner, any building, other improvement, real estate or other property owned by Owner, nor cause, suffer or permit any mechanic's lien, materialmen's lien or any lien rights whatsoever to be filed against Owner or any of Owner's property. Contractor shall indemnify and hold Owner and any real estate, other property, buildings and other improvements owned by Owner harmless from and against any such liens for labor and materials. Neither contractor nor any subcontractor, mechanic, journeyman, laborer, materialman, supplier or any person, firm or corporation, for any cause whatsoever, shall have any right to hold, claim, assert, file or enforce any mechanic's lien, materialmen's lien, or any lien rights whatsoever against Owner or any of Owner's property for any services, labor, materials, or equipment furnished under or in connection with this Agreement.

16. Limitation of Liability. Anything to the contrary contained in this Agreement notwithstanding, there shall be absolutely no personal liability on persons, firms or entities who constitute any of the Owner Parties with respect to any of the terms, covenants, conditions and provisions of this Agreement, and Contractor shall look solely to the Owner or its successors and assigns for the satisfaction of each and every remedy of Contractor in the event of default by Owner hereunder; such exculpation of personal liability is absolute and without any exception whatsoever.

17. Intellectual Property. The parties expressly recognize that Contractor's services rendered to Owner under this Agreement ("Services") and all work product resulting therefrom ("Work Product") have been specially ordered and commissioned by Owner as a contribution to a collective work, supplemental work or such other category of work as may be eligible for treatment as a "work made for hire" as that term is defined in the Copyright Act, 17 U.S.C. § 101 et seq. Owner shall be deemed the sole author of the Services and Work Product, their contents and any work embodying or derived from any portion of the Services and Work Product, and their attendant intellectual property rights.

18. Audit

- (a) Owner, or its authorized employees, agents or representatives (including a third-party auditor or firm) shall have the right to interview personnel and inspect, examine, copy and audit the books and records of Contractor relating to the Project and all associated work, costs and expenses (collectively, "Audit"). Any audit shall be conducted within three (3) years following the date of any final payment made by Owner for any goods or services supplied pursuant to this Agreement, and shall take place during Contractor's normal business hours (or as otherwise may be agreed by the parties) upon not less than seven (7) days prior written notice.
- (b) Contractor shall, for a period of three (3) years following the date of any final payment made by Owner for any goods or services provided pursuant to this Agreement, keep and preserve at all times at the Contractor's notice location all documents and records (whether in written or electronic format) that pertain in any way to this Agreement, including, without limitation, records related to bidding (including but not limited to bids by contractors, subcontractors and material suppliers), invoices and receipts for material and services from the subcontractors, material suppliers or other vendors, payroll records (including, without limitation, employee work schedules) and full, complete and accurate books of account.
- (c) The purpose of the Audit shall be to verify compliance with this Agreement and the accuracy of amounts charged or paid by Contractor for any goods or services provided pursuant to this Agreement, and all amounts billed or paid shall be subject to Audit. In addition, such Audit shall be in compliance with this Agreement, including, without limitation, any and all requirements for deliverables, approved plans and specifications, and purpose and pricing of any change order. If such Audit discloses that Contractor has overcharged or underpaid Owner or that Owner has paid any excess amount, Contractor shall pay Owner, upon demand, the amount of any excess Owner payment, underpayment by Contractor or, if payment has not been made, revise any account statement, invoice or billing to reflect the correct amount owed. If the Audit concludes that Owner has been overbilled or underpaid, or Owner has overpaid, amounts owed by one percent (1%) or more, then, in addition to making such revision and/or full repayment of the amount of such underpayment or overpayment, as the case may be, Contractor shall reimburse Owner for the cost of the Audit.

19. Background Checks-Compliance Certification

- (a) To the extent permitted by applicable federal, state and local law (including, but not limited to, the federal Fair Credit Reporting Act and Americans with Disabilities Act), Contractor shall conduct appropriate criminal background and reference checks of personnel assigned to work at Owner's facilities. Contractor represents and warrants that it will conduct any criminal background or reference checks in a lawful manner.
- (b) Contractor represents and warrants that an Employment Eligibility Verification (commonly known as an I-9 form), issued by the Department of Homeland Security, has been properly completed for each Contractor employee that works at a facility owned and/or managed by Owner and the I-9 Form for each such employee is maintained by Contractor.
- (c) Contractor will certify to Owner that it has complied with the obligations in this paragraph. Contractor will provide this certification upon request by Owner but, in any event, will provide a certification letter to Owner within 30 days following the effective date of any contract and, subsequently, in January of each year.

20. Exhibits. The following Exhibits are incorporated herein by reference:

(List attached Exhibits, including letter or number designation and heading, if any.)

21. Binding Effect; Entire Agreement. This Agreement shall be binding upon and inure to the benefit of the respective heirs, successors, assigns and personal representatives of the parties, subject however, to the restriction upon assignment by

Revised 8/5/10; Revised 12/11/14, Revised 6/11/20

Contractor set forth above. This Agreement contains the entire agreement between the parties and cannot be modified or amended without a written agreement executed by both of the parties.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed on the day and year first above written.

Community College District of Central Southwest
Missouri, aka Ozarks Technical Community College

Contractor:

By: _____ By: _____

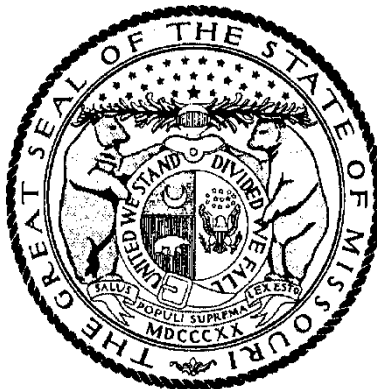
Printed Name: _____ Printed Name: _____

Title: _____ Title: _____

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

Annual Wage Order No. 28

Section 039
GREENE COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

Taylor Burks, Director
Division of Labor Standards

Filed With Secretary of State: March 10, 2021

Last Date Objections May Be Filed: April 8, 2021

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	\$29.65
Boilermaker	*\$27.38
Bricklayer	\$49.52
Carpenter	\$44.57
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	\$34.03
Plasterer	
Communications Technician	\$42.31
Electrician (Inside Wireman)	\$44.54
Electrician Outside Lineman	*\$27.38
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	*\$27.38
Glazier	\$46.27
Ironworker	\$61.82
Laborer	\$37.83
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	\$53.20
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	\$42.78
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	\$38.00
Plumber	\$50.68
Pipe Fitter	
Rofer	\$38.90
Sheet Metal Worker	\$46.73
Sprinkler Fitter	\$60.75
Truck Driver	*\$27.38
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

*The Division of Labor Standards received less than 1,000 reportable hours for this occupational title.
Public works contracting minimum wage is established for this occupational title using data provided by Missouri
Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title.

Heavy Construction Rates for
GREENE County

Section 039

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	*\$27.38
Millwright	
Pile Driver	
Electrician (Outside Lineman)	*\$27.38
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	\$41.12
General Laborer	
Skilled Laborer	
Operating Engineer	\$47.08
Group I	
Group II	
Group III	
Group IV	
Truck Driver	\$45.71
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

*The Division of Labor Standards received less than 1,000 reportable hours for this occupational title. Public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title.

OVERTIME and HOLIDAYS

OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

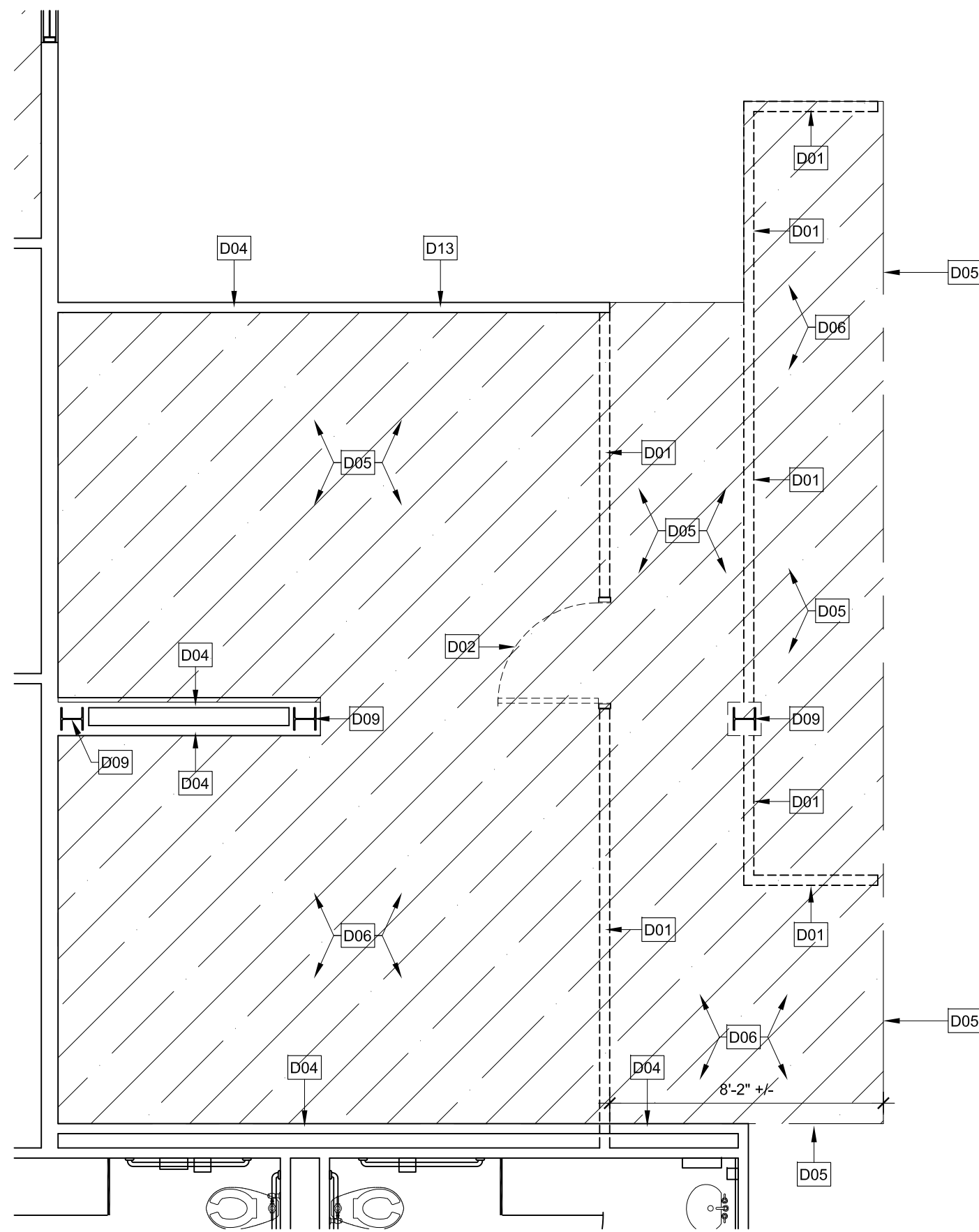
For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, "**overtime work**" shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

HOLIDAYS

January first;
The last Monday in May;
July fourth;
The first Monday in September;
November eleventh;
The fourth Thursday in November; and
December twenty-fifth;

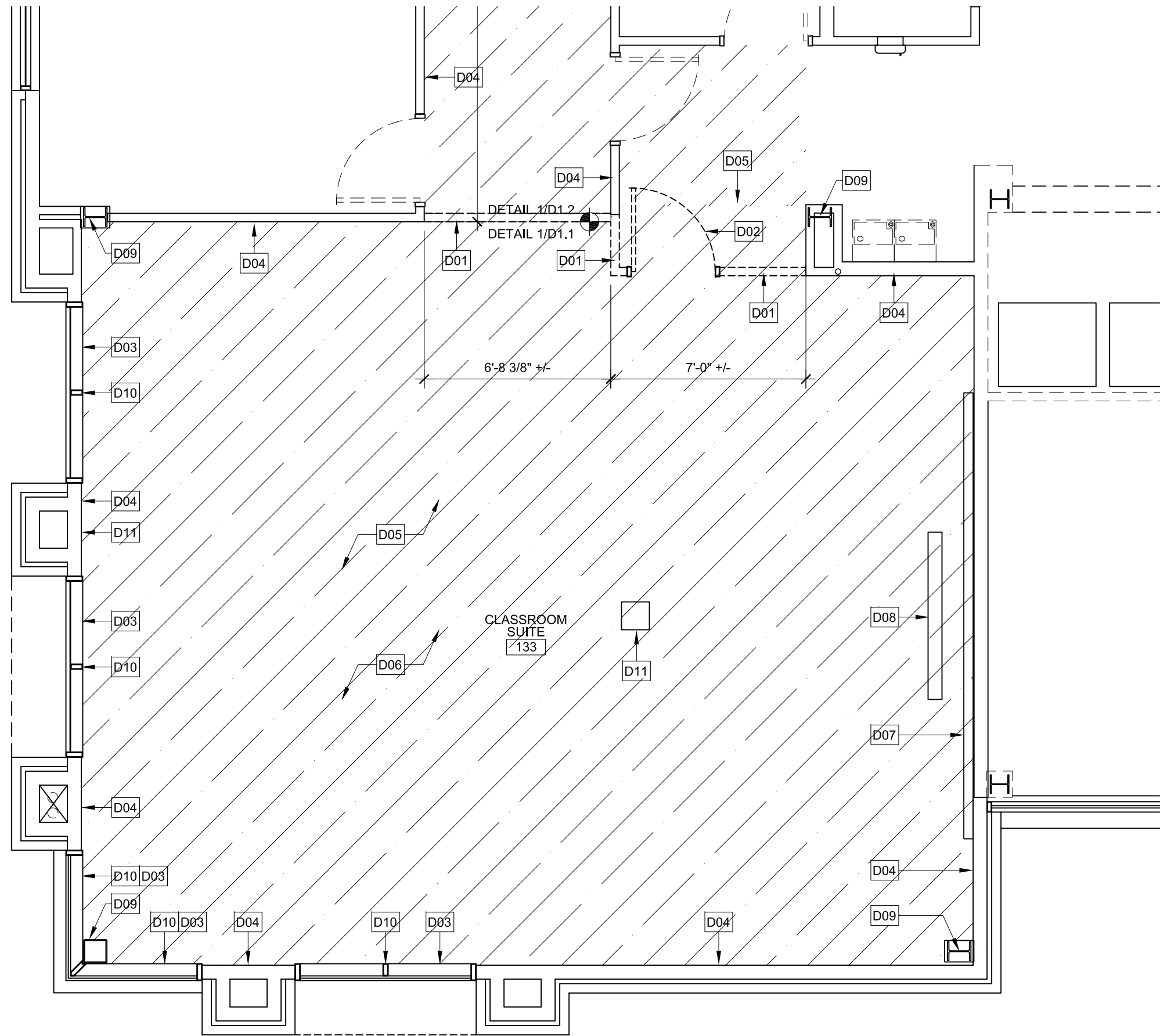
If any holiday falls on a Sunday, the following Monday shall be considered a holiday.



2
D1.1

DEMOLITION FLOOR PLAN - SUITE 130 - BID ALTERNATE #1

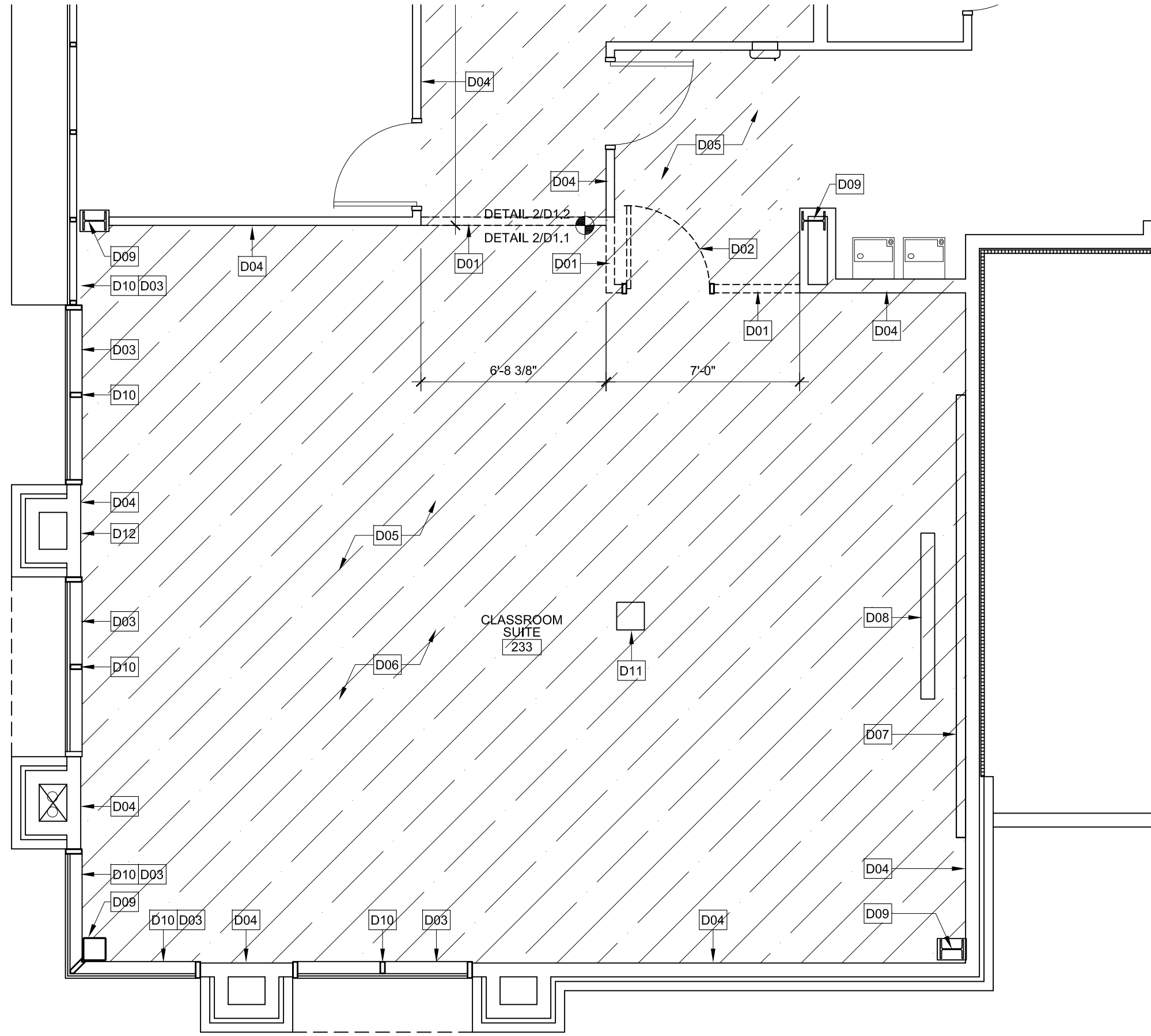
1/4"=1'-0"



1
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DEMOLITION FLOOR PLAN - SUITE 133

1/4"=1'-0"



3
D1.1

DEMOLITION FLOOR PLAN - SUITE 233

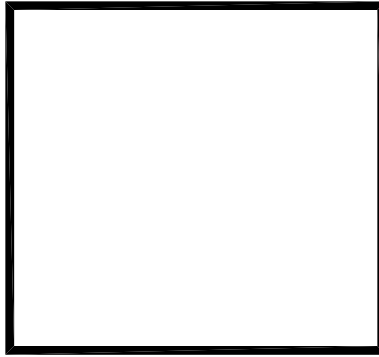
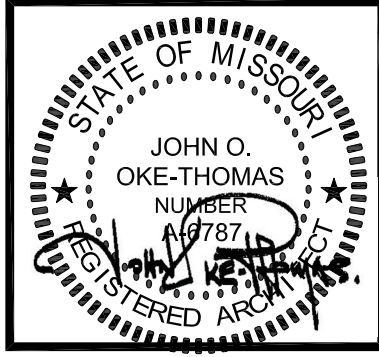
1/4"=1'-0"

DEMOLITION PLAN KEY NOTES

- D01 REMOVE EXISTING WALL SYSTEM IN ITS ENTIRETY.
- D02 REMOVE THE EXISTING DOOR AND FRAME IN ITS ENTIRETY.
- D03 REMOVE THE EXISTING WINDOW TREATMENT AND RETURN TO OWNER
- D04 EXISTING WALL SYSTEM TO REMAIN
- D05 REMOVE THE EXISTING FLOORING SYSTEM DOWN TO THE CONCRETE AND PREP FOR NEW FLOORING
- D06 REMOVE THE EXISTING CEILING TILE AND GRID SYSTEM
- D07 REMOVE THE EXISTING WHITE BOARD.
- D08 REMOVE THE EXISTING OVERHEAD PROJECTION SCREEN SYSTEM.
- D09 EXISTING COLUMN TO REMAIN
- D10 EXISTING WINDOW SYSTEM TO REMAIN
- D11 OWNER TO REMOVE THE EXISTING CEILING MOUNTED PROJECTOR SYSTEM
- D12 REMOVE THE EXISTING WALL CLOCK SYSTEM. RETURN TO OWNER
- D13 THE EXISTING DONOR WALL AND LETTERING SHALL REMAIN. (PROTECT). OWNER WILL REALIGN THE EXISTING LETTERING AT A FUTURE TIME. OWNER WILL REPAINT THE OUTSIDE PORTION OF THE DONOR WALL PRIOR TO THE LETTERING RELOCATION

GENERAL NOTES

- THE CONTRACTOR SHALL CONDUCT A COMPLETE ON-SITE INSPECTION TO FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING THE PROJECT.
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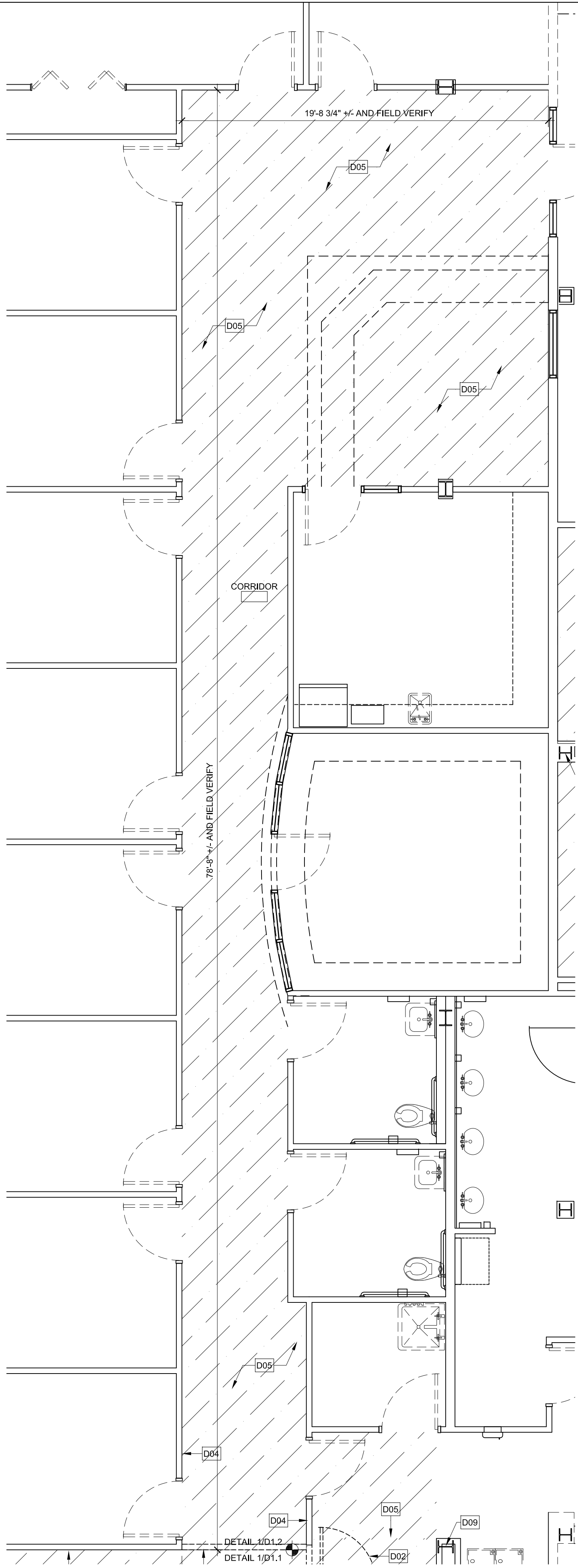
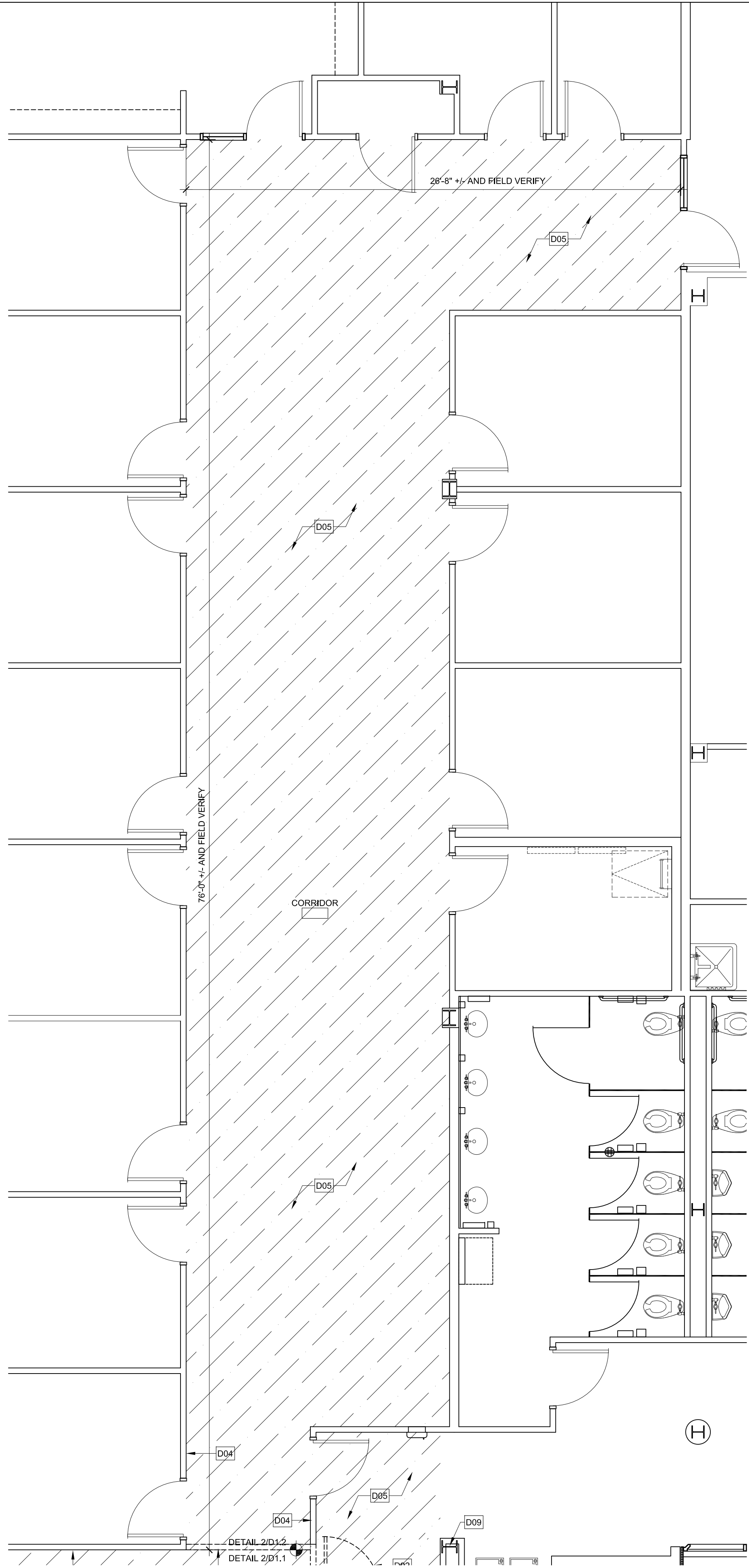
OFFICE RENOVATIONS
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DATE
AUGUST 24, 2021

COMM. NO.
21-115

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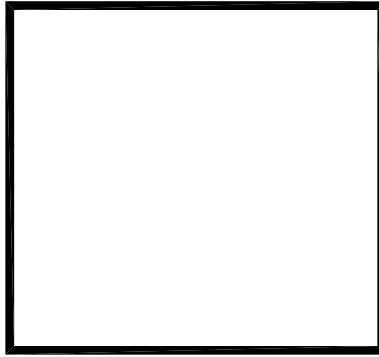


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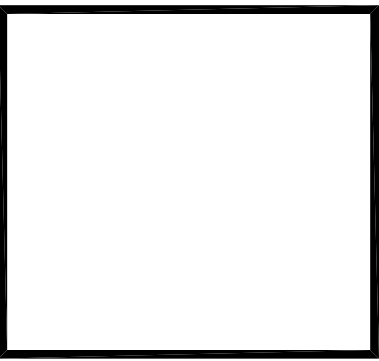
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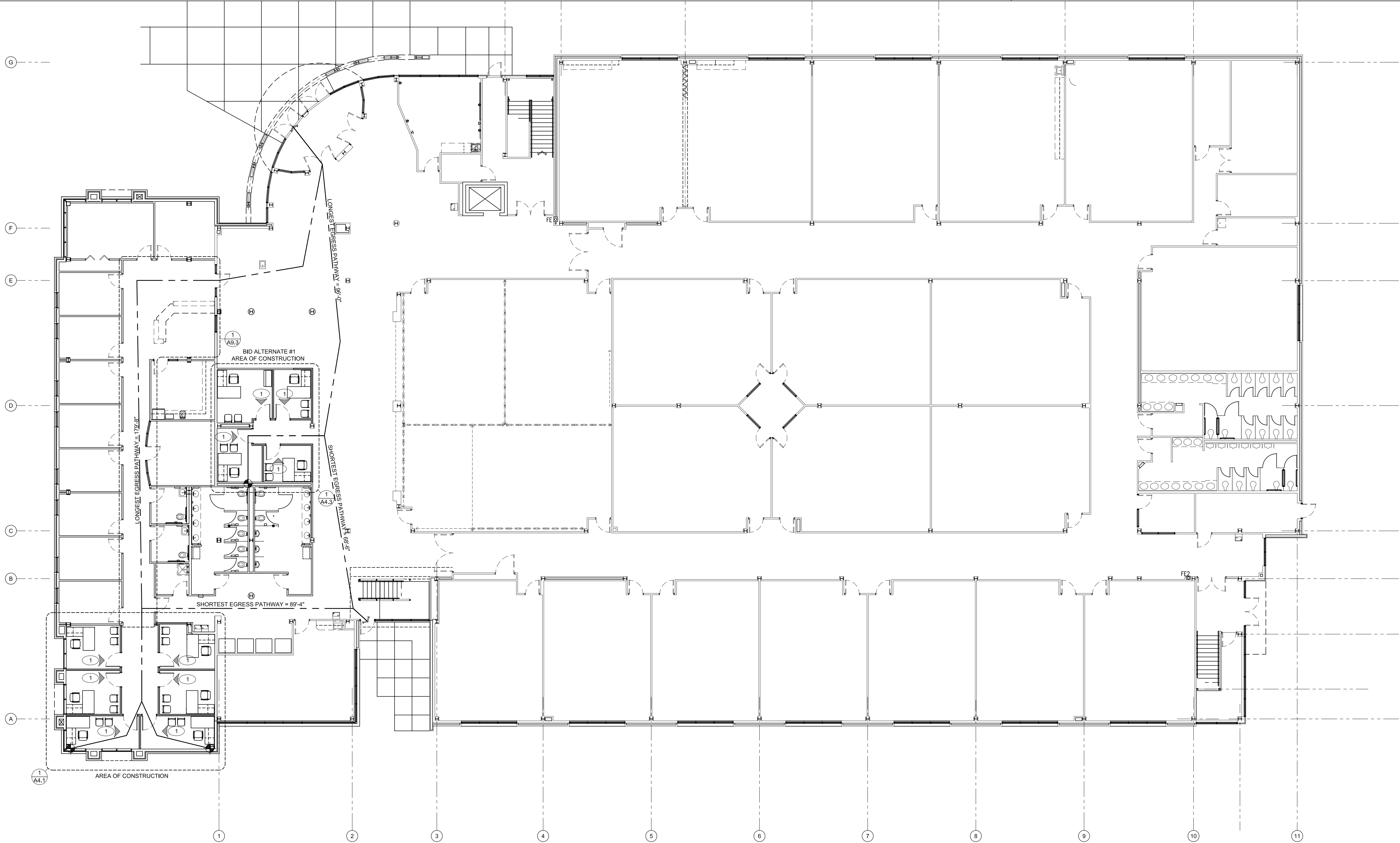
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OVERALL FIRST FLOOR PLAN
3/32"=1'-0"



GENERAL NOTES

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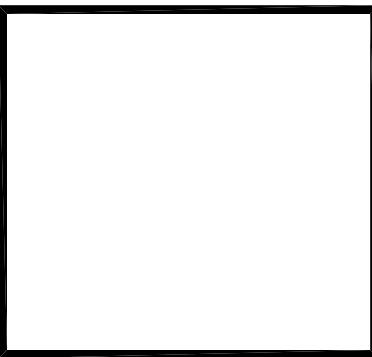
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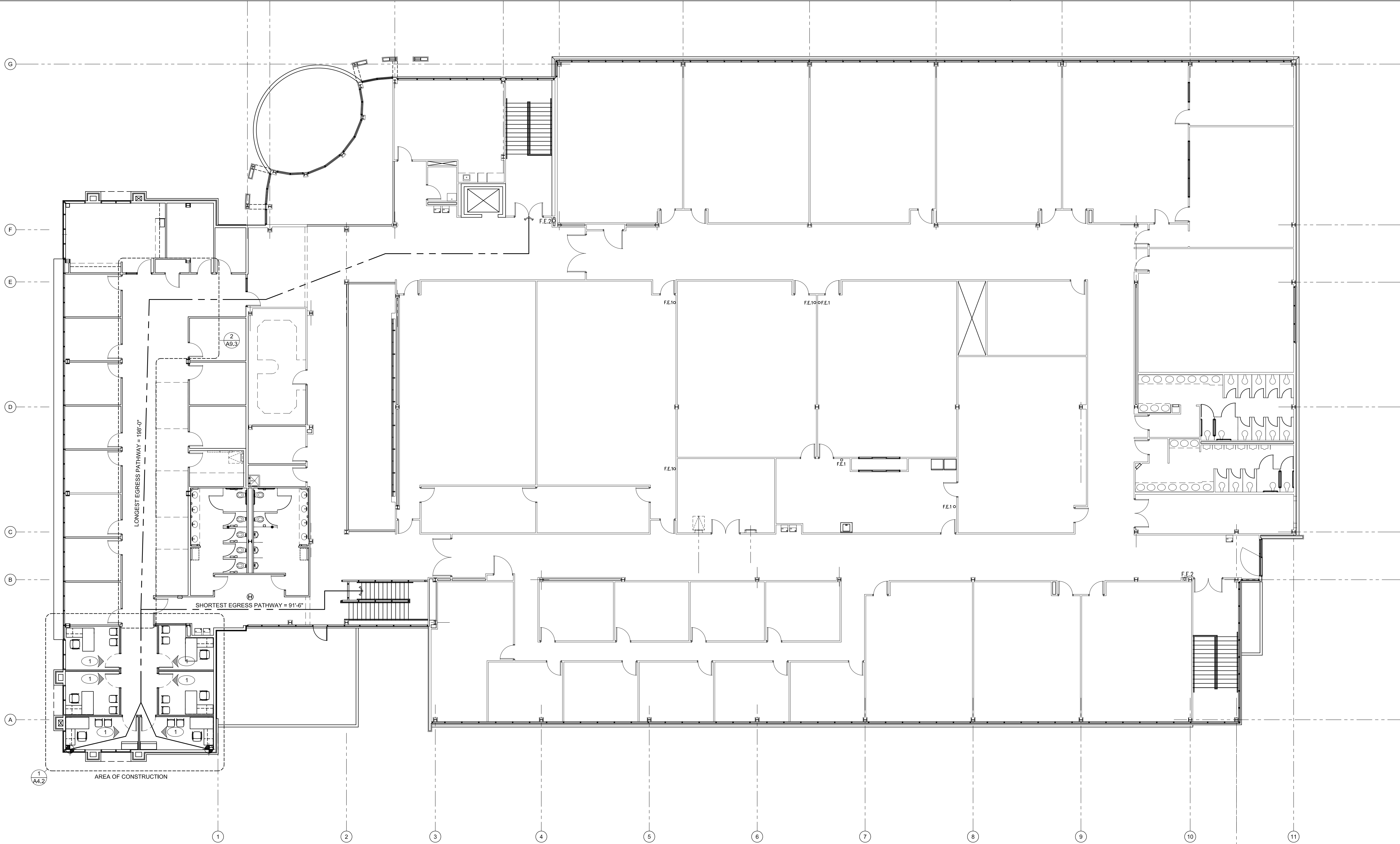
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OFFICE RENOVATIONS

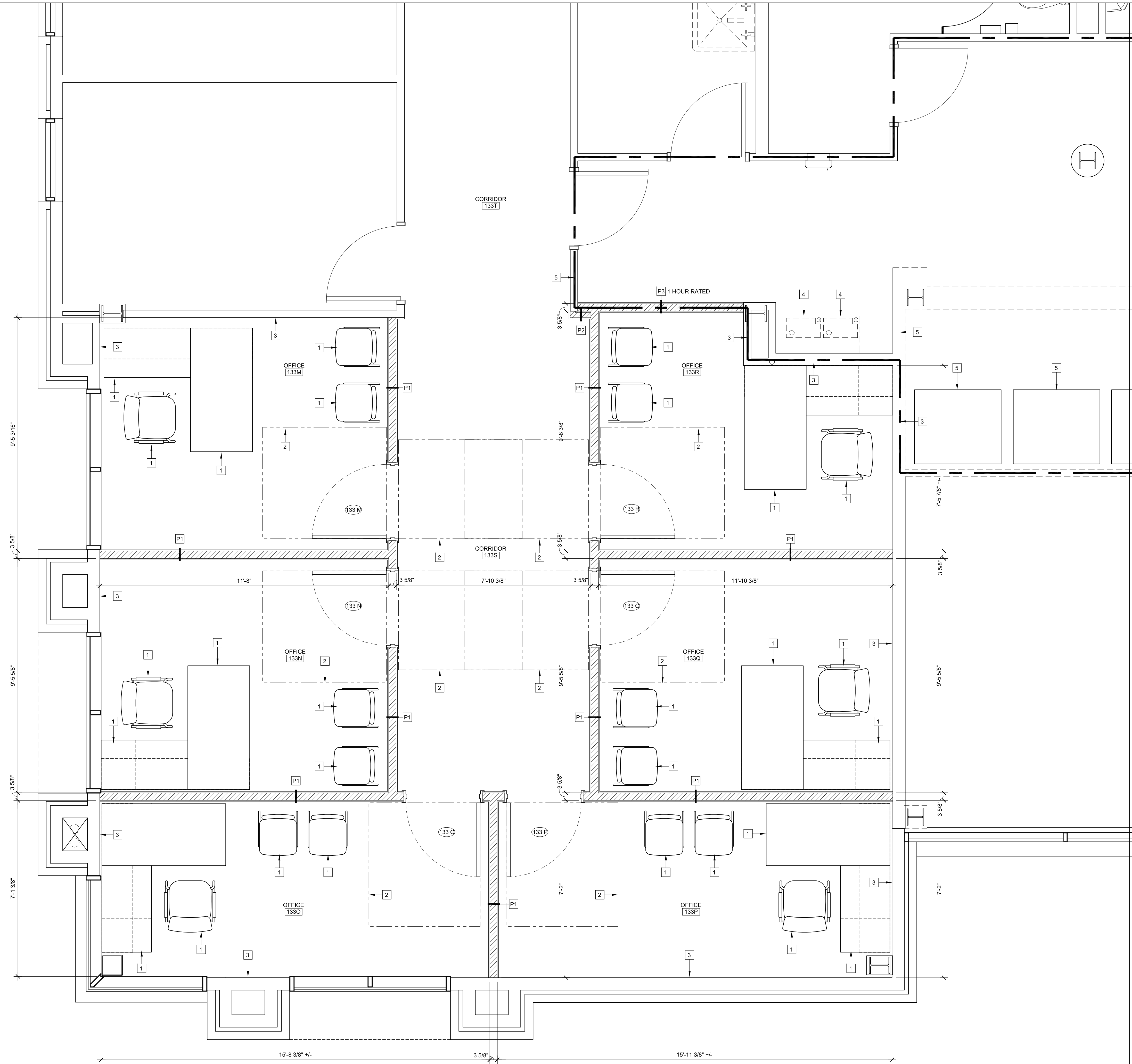
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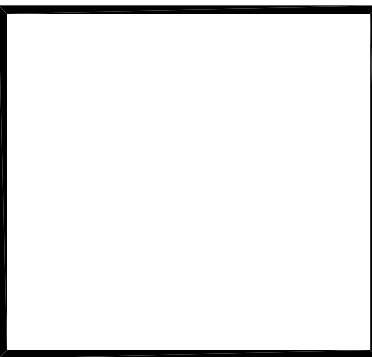
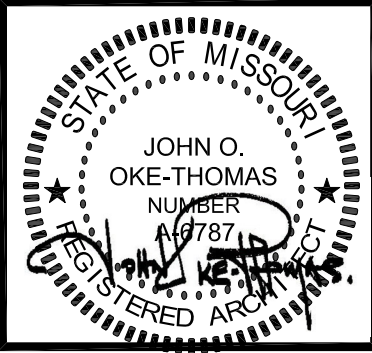


OVERALL SECOND FLOOR PLAN
3/32"=1'-0"



FLOOR PLAN KEY NOTES

- 1 FURNITURE BY OWNER, SHOWN FOR CLEARANCES.
- 2 ADA CLEARANCE ZONE
- 3 EXISTING WALL SYSTEM TO REMAIN (PROTECT)
- 4 EXISTING WATER FOUNTAIN TO REMAIN (PROTECT)
- 5 EXISTING VENDING MACHINE TO REMAIN (PROTECT)



REVISIONS	
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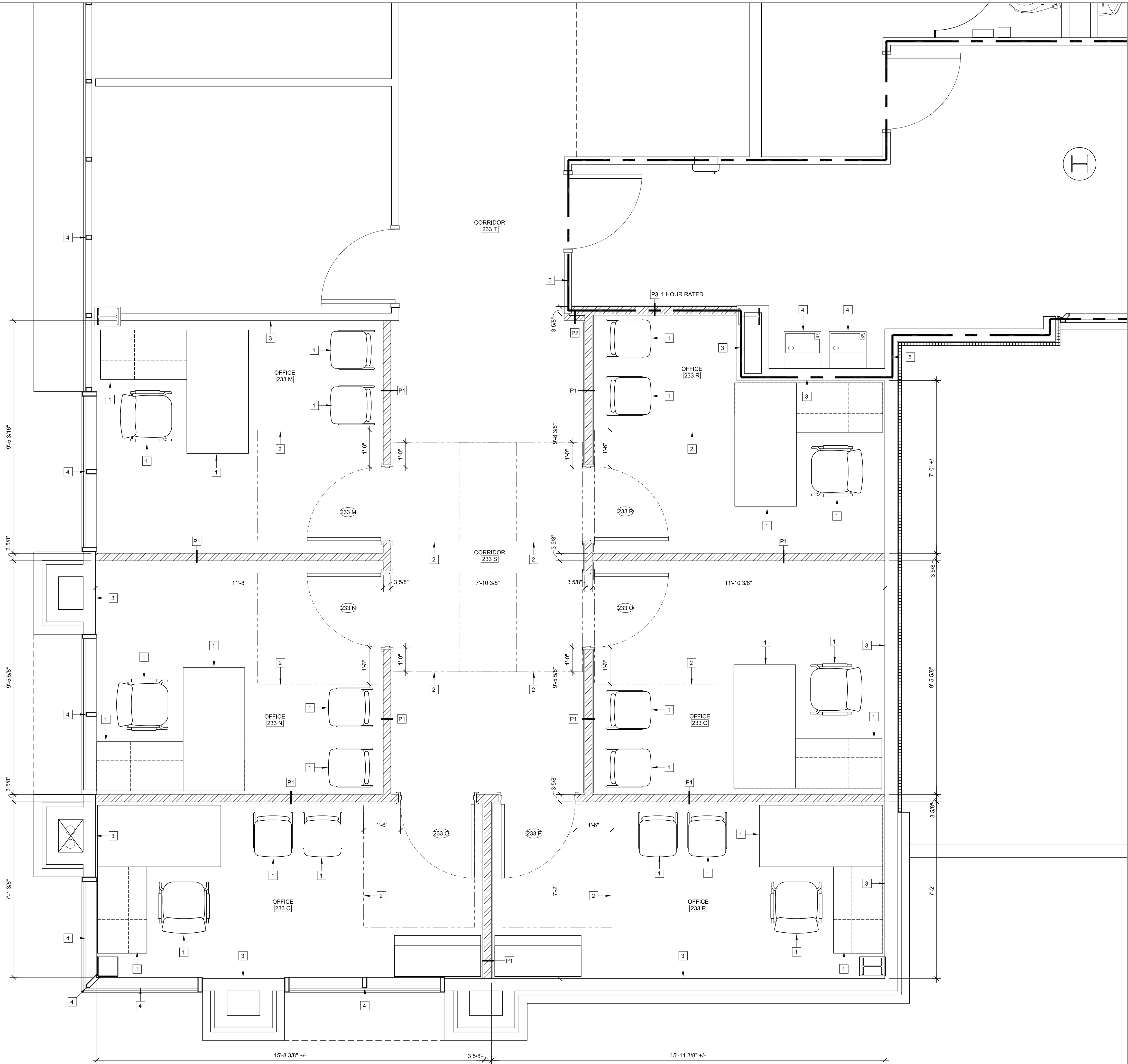
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AUGUST 24, 2021

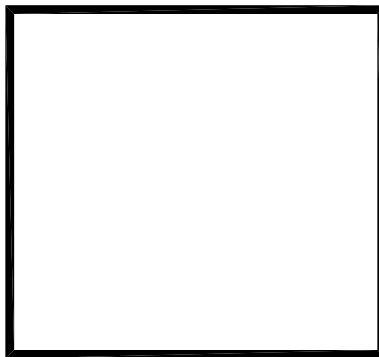
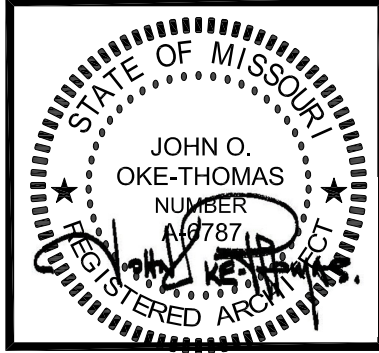
COMM. NO.
21-115

SHEET NO.
A4.1



FLOOR PLAN KEY NOTES

- 1 FURNITURE BY OWNER. SHOWN FOR CLEARANCES.
- 2 ADA CLEARANCE ZONE
- 3 EXISTING WALL SYSTEM TO REMAIN (PROTECT)
- 4 EXISTING WATER FOUNTAIN TO REMAIN (PROTECT)
- 5 EXISTING VENDING MACHINE TO REMAIN (PROTECT)



REVISIONS	
DD PACKAGE	7/14/2021
90% CD PACKAGE	8/13/2021
FINAL SET	8/24/2021

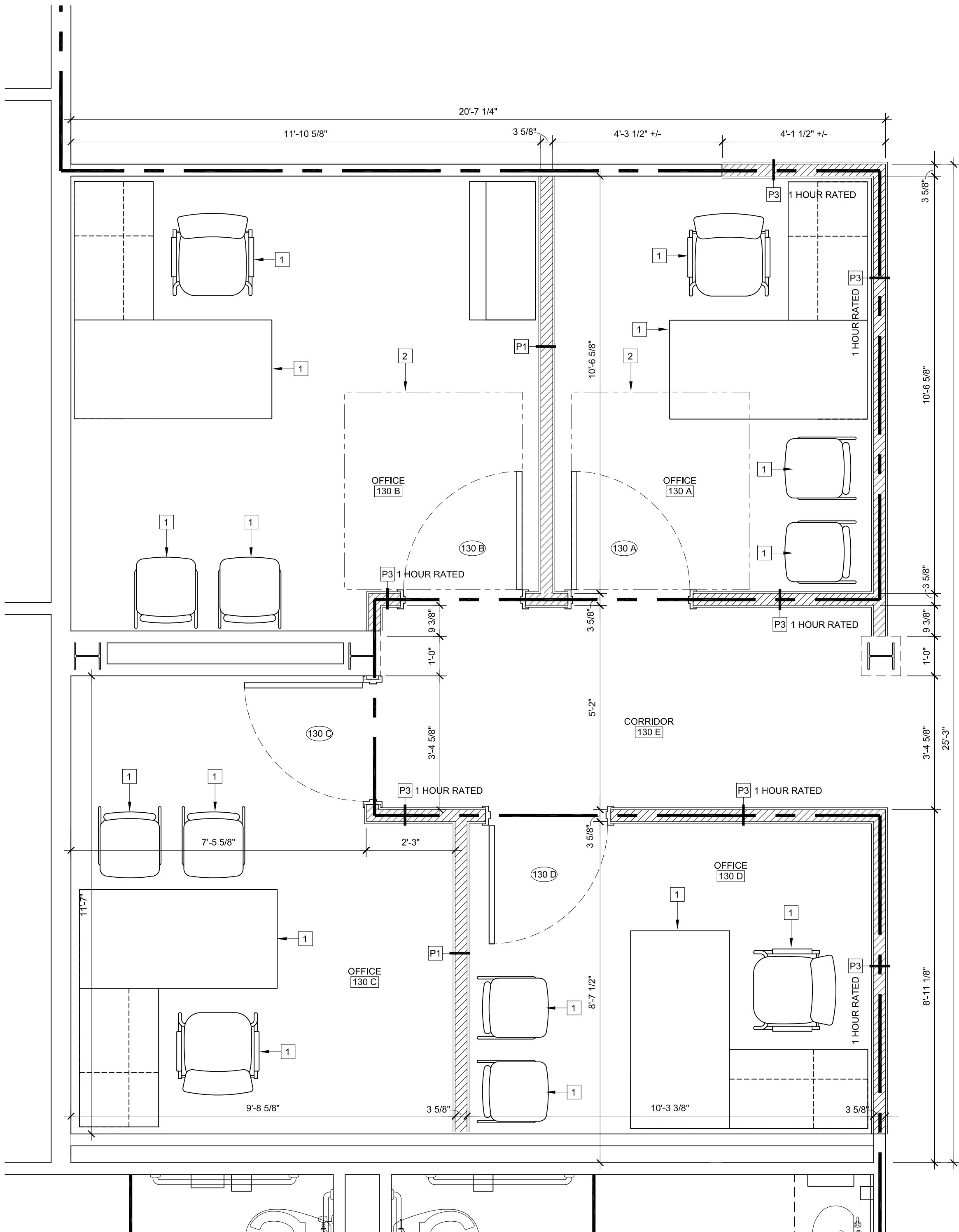
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IN THE
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DATE
AUGUST 24, 2021

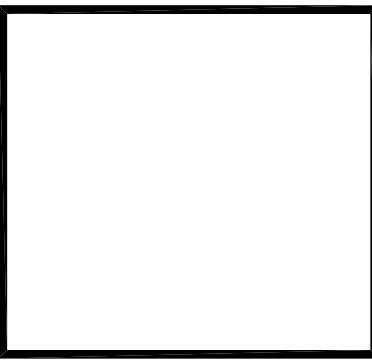
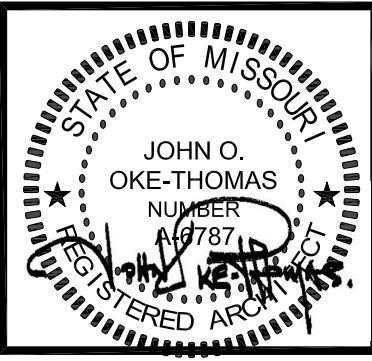
COMM. NO.
21-115

SHEET NO.
A4.2



FLOOR PLAN KEY NOTES

- 1 FURNITURE BY OWNER, SHOWN FOR CLEARANCES.
- 2 ADA CLEARANCE ZONE
- 3 EXISTING WALL SYSTEM TO REMAIN (PROTECT)
- 4 EXISTING WATER FOUNTAIN TO REMAIN (PROTECT)
- 5 EXISTING VENDING MACHINE TO REMAIN (PROTECT)



REVISIONS	
DD PACKAGE	7/14/2021
90% CD PACKAGE	8/13/2021
FINAL SET	8/24/2021

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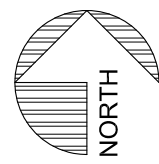
COMM. NO.
21-115

SHEET NO.
A4.3

1
A4.3

ENLARGED FLOOR PLAN - SUITE 130 - BID ALTERNATE #1

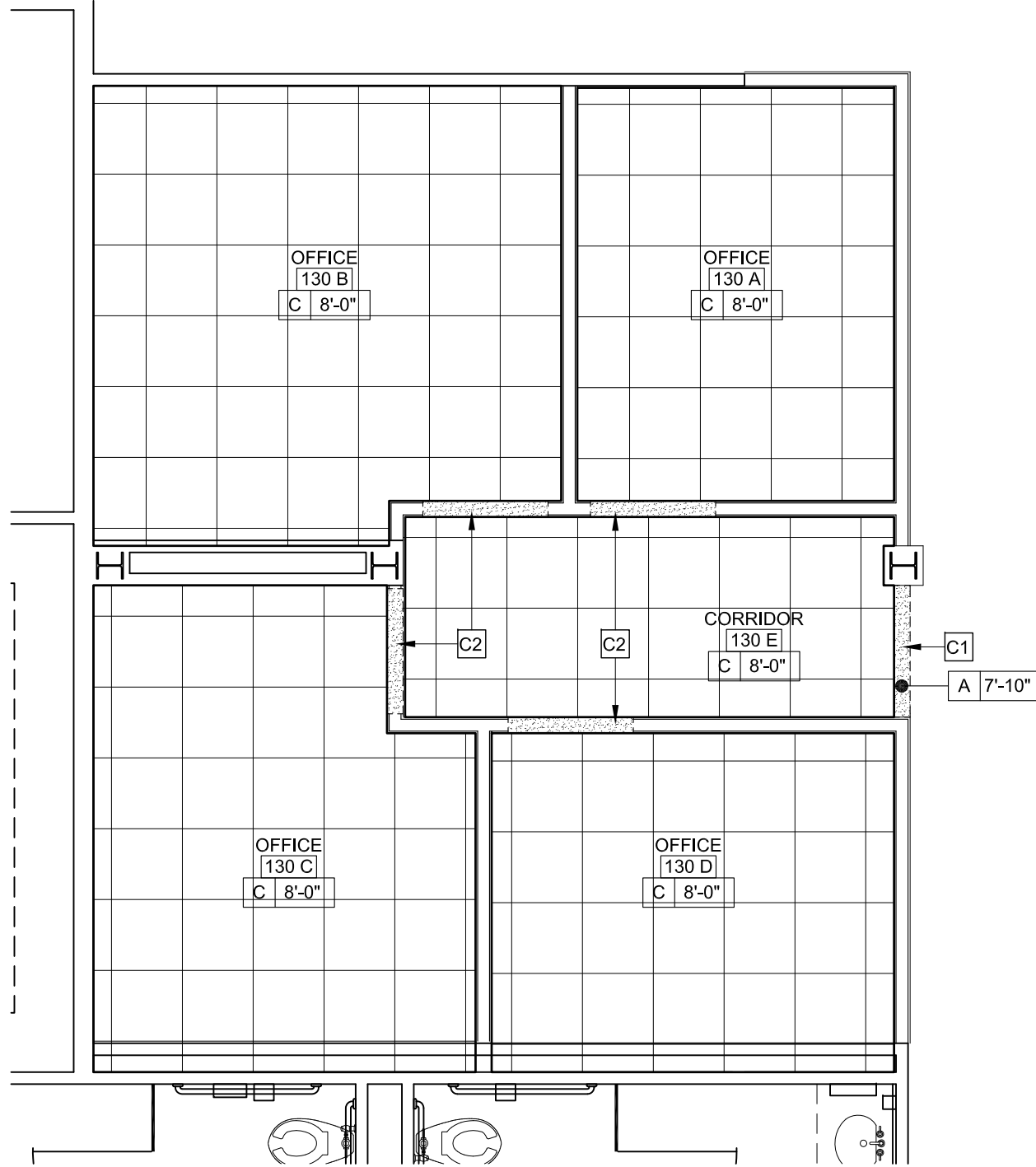
1/2"=1'-0"



3
A6.1

REFLECTED CEILING PLAN - SUITE 130 - BID ALTERNATE #1

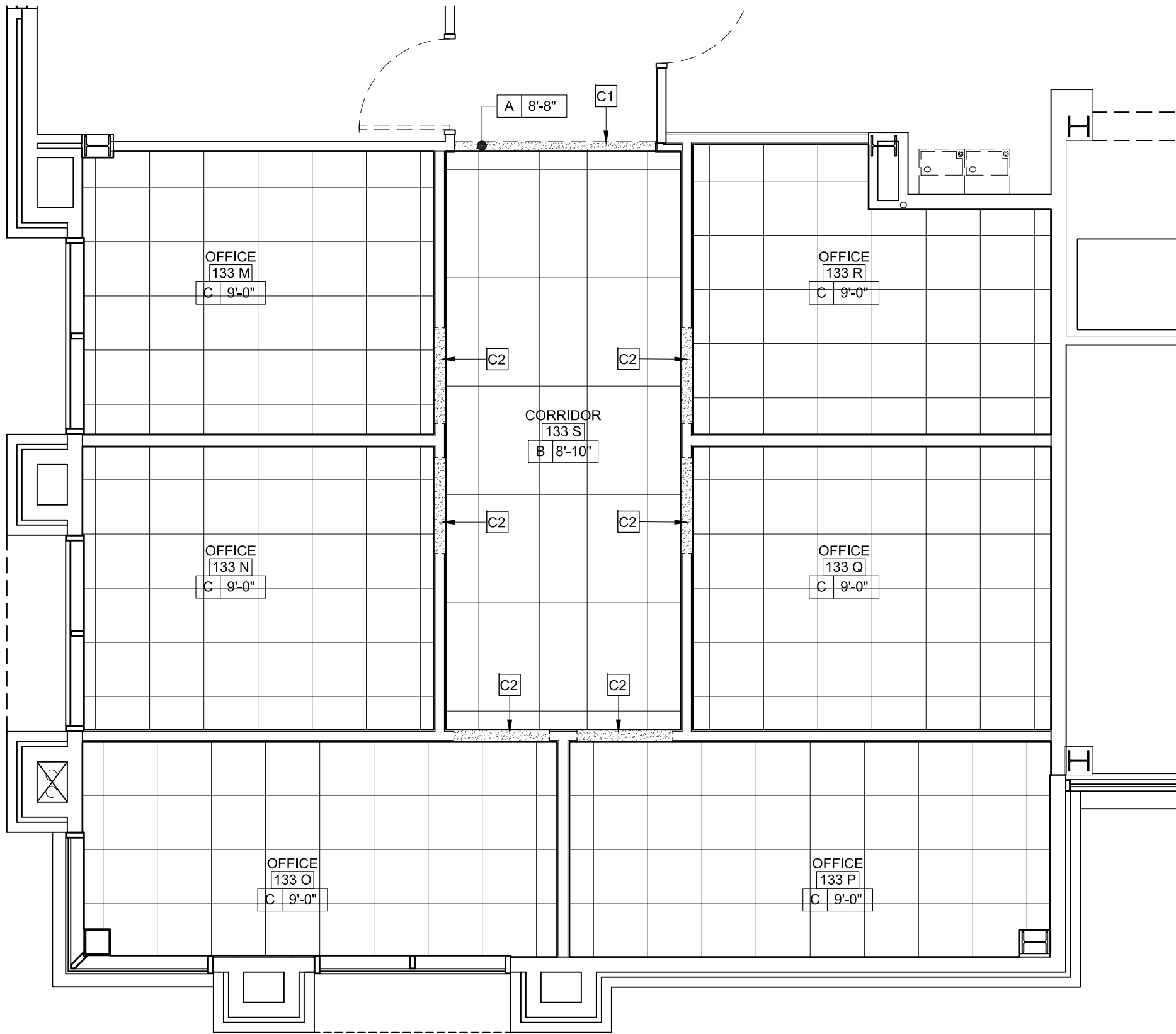
1/4"=1'-0"



1
A6.1

REFLECTED CEILING PLAN - SUITE 133

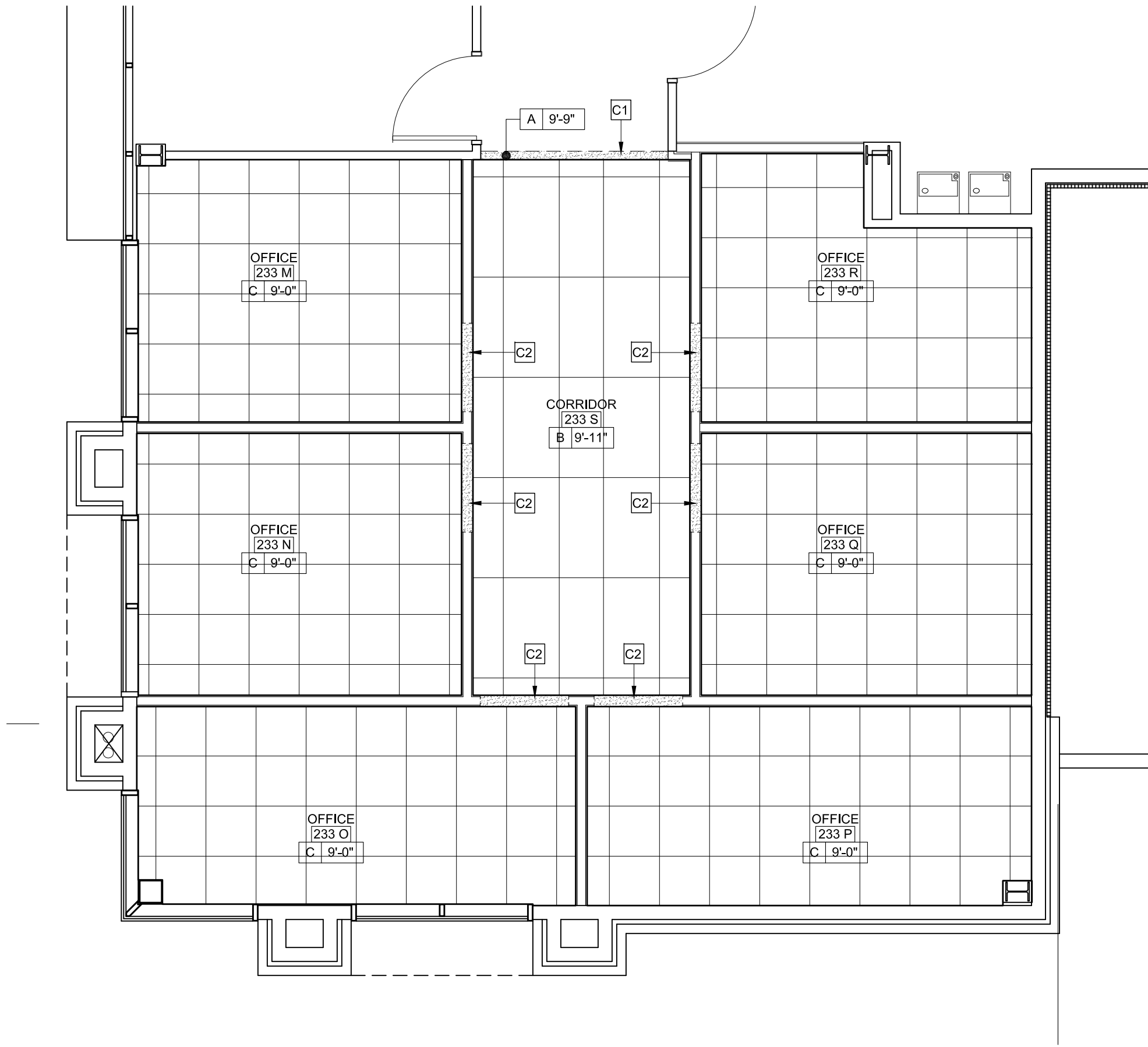
1/4"=1'-0"



2
A6.1

REFLECTED CEILING PLAN - SUITE 233

1/4"=1'-0"



KEYNOTES

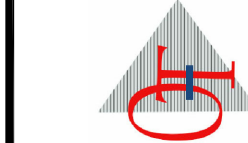
- C1 PAINTED GYP BOARD HEADER
C2 DOOR HEADER

GENERAL NOTES

1. ALL HEIGHTS ARE ARE FROM FINISH FLOOR
2. ALL DIMENSIONS FOR INTERIOR SOFFIT'S ARE TO STUD.
3. REFER TO INTERIOR FINISH SCHEDULE FOR FINISHES.
4. INFORMATION ON THIS SHEET GOVERNS THE LAYOUT OF THE CEILING GRID. SEE ELECTRICAL AND MECHANICAL SHEETS FOR FIXTURE TYPES, QUANTITIES, CIRCUITING, DUCTING AND SCHEDULING.

CEILING TYPES

- A 9'-0" 5/8" TYPE "C" GYP BOARD (PAINT)
B 9'-0" 2X4' TEGULAR EDGE - SUSPENDED ACOUSTICAL TILE CEILING
C 9'-0" 2X2' TEGULAR EDGE - SUSPENDED ACOUSTICAL TILE CEILING



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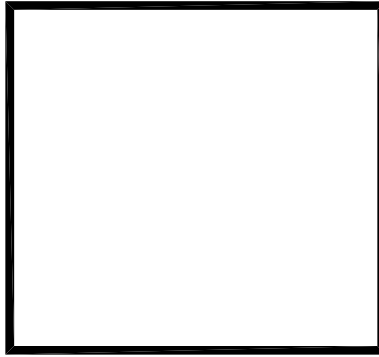
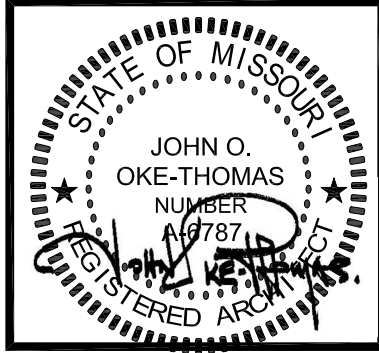
COMM. NO.
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SHEET NO.

A6.1

REVISIONS

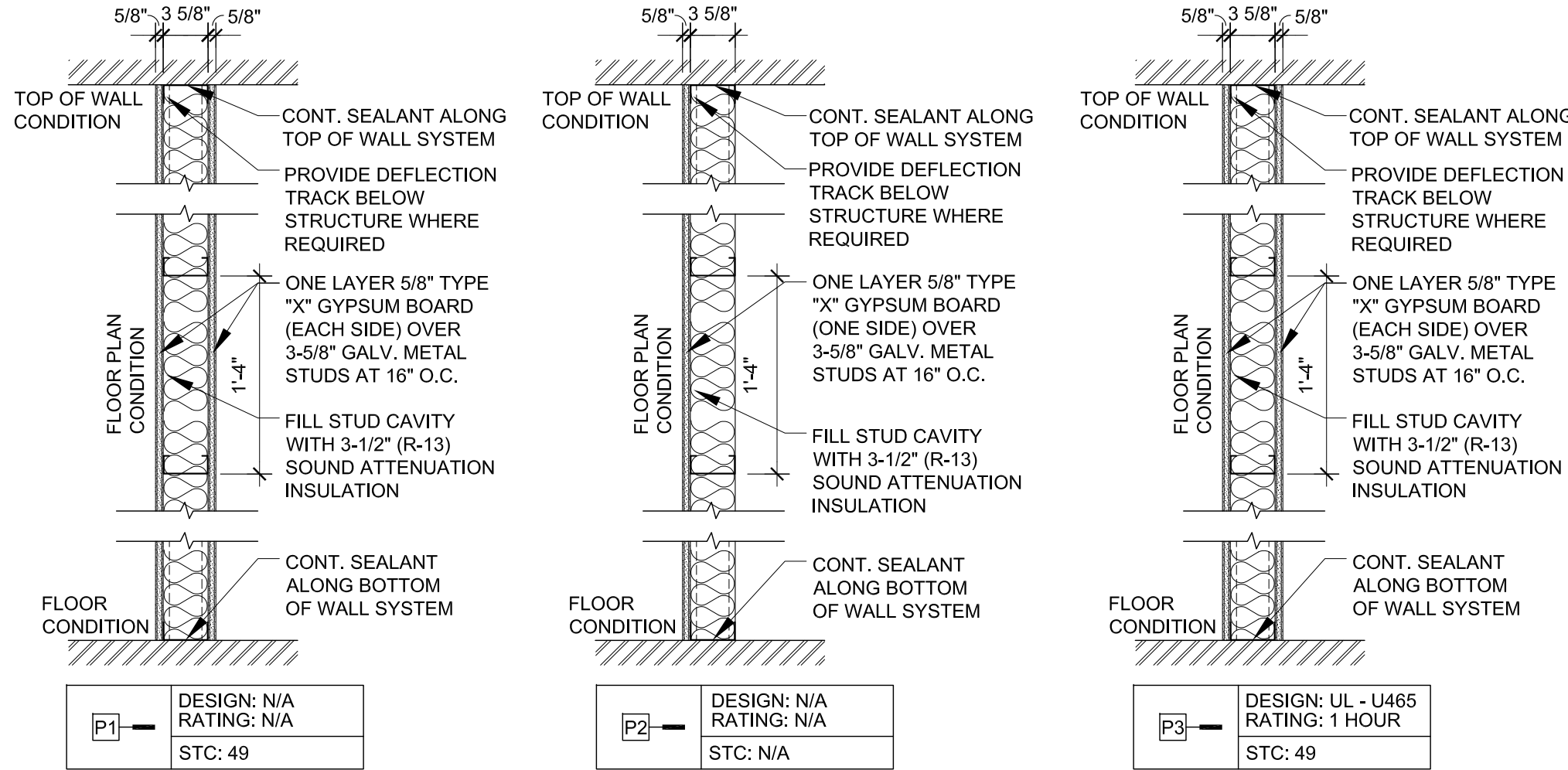
DD PACKAGE	7/14/2021
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FINAL SET	8/24/2021



WALL TYPES

GENERAL NOTES

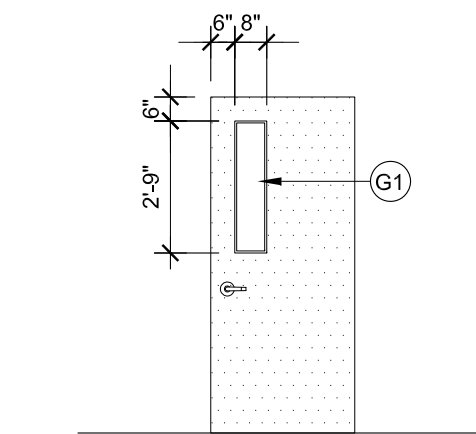
1. RUN ALL FIRE RATED WALLS TO UNDERSIDE OF ROOF OR FLOOR DECK ABOVE. PROVIDE FIRE SAFING INSULATION AT ALL DECK FLUTES. TAPE, CAULK OR GROUT FIRE WALLS TIGHTLY AROUND ANY PENETRATION.
2. CONTRACTOR SHALL COORDINATE OPENINGS THRU FULL HEIGHT WALLS FOR HVAC, ELECTRICAL, PLUMBING AND OTHER EQUIPMENT AS REQUIRED TO AVOID CUTTING THROUGH WALLS AFTER CONSTRUCTION OF WALLS.
3. IF ANY QUESTION ON WALL TYPES SHALL ARISE, CONTACT THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.



DOOR SCHEDULE

MARK	DOOR OPENING		OPENING DIMENSION		DOOR TYPE	THICKNESS	FRAME TYPE	GLAZING	RATED ASSEMBLY	THRESHOLD	HARDWARE GROUP	REMARKS
	WIDTH	HEIGHT	WIDTH	HEIGHT								
130 A	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	1 HOUR	---	2	(1) HOUR FIRE RATED WALL ASSEMBLY - BID ALTERNATE #1
130 B	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	1 HOUR	---	2	(1) HOUR FIRE RATED WALL ASSEMBLY - BID ALTERNATE #1
130 C	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	1 HOUR	---	2	(1) HOUR FIRE RATED WALL ASSEMBLY - BID ALTERNATE #1
130 D	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	1 HOUR	---	2	(1) HOUR FIRE RATED WALL ASSEMBLY - BID ALTERNATE #1
133 M	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
133 N	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
133 O	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
133 P	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
133 Q	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
133 R	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
233 M	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
233 N	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
233 O	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
233 P	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
233 Q	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	
233 R	3'-0"	7'-0"	3'-2"	7'-2"	A	1 3/4"	1	1/4" TEMPERED	---	---	1	

DOOR TYPE

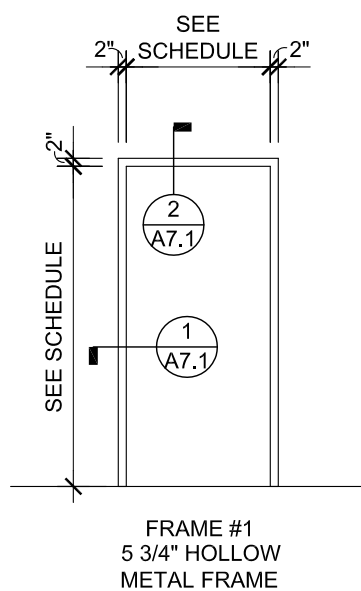


DOOR "A"
SOLID CORE DOOR
(LAMINATE) TO MATCH EXISTING ADJACENT DOOR SYSTEMS OF THE MAINMAN COMPANY
WOOD DOOR LAMINATE IS NEVAMAR WHITE ESSENCE ES7001T

HARDWARE

HARDWARE SET # 1 : (3) EACH HINGES (1) LOCK (1) WALL STOP	TA2714; 4-1/2 x 4-1/2" 626 28-10G05 LL 626; CORE BY OWNER 409 630	MCKINNEY SARGENT ROCKWOOD
HARDWARE SET # 2 : (3) EACH HINGES (1) LOCK (1) CLOSER (1) KICK PLATE (1) WALL STOP	TA2714; 4-1/2 x 4-1/2" 626 28-10G05 LL 626; CORE BY OWNER 281 O 689 8 x 34 630 409 630	MCKINNEY SARGENT SARGENT ROCKWOOD ROCKWOOD

FRAME TYPE



GLASS LEGEND

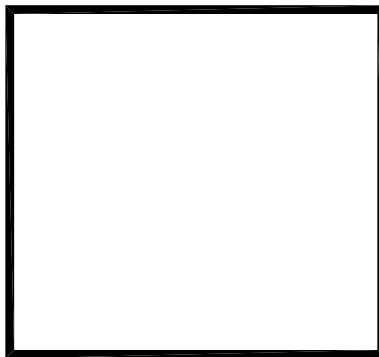
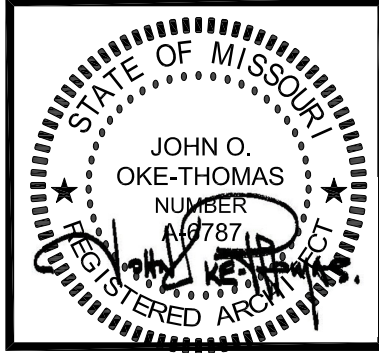
G1 1/4" TEMPERED GLASS, CLEAR

2
A7.1

3-5/8" H.M. DOOR HEAD DETAIL
3"=1'-0"

1
A7.1

3-5/8" H.M. DOOR JAMB DETAIL
3"=1'-0"



REVISIONS	
DD PACKAGE	7/14/2021
90% CD PACKAGE	8/13/2021
FINAL SET	8/24/2021

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ROOM FINISH SCHEDULE

RM NO	ROOM TITLE	FLOOR	BASE	WALLS				CEILING	CEILING HEIGHT	REMARKS
				NORTH	SOUTH	EAST	WEST			
130 A	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	8'-0"	BID ALTERNATE #1
130 B	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	8'-0"	BID ALTERNATE #1
130 C	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	8'-0"	BID ALTERNATE #1
130 D	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	8'-0"	BID ALTERNATE #1
130 E	CORRIDOR	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	8'-0"	BID ALTERNATE #1
133 M	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 N	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 O	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 P	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 Q	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 R	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 S	CORRIDOR	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
133 T	CORRIDOR	F2 CARPET TILE	B2 4" RUBBER	-	-	-	-	-	-	
233 M	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
233 N	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
233 O	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
233 P	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
233 Q	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
233 R	OFFICE	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	9'-0"	
233 S	CORRIDOR	F2 CARPET TILE	B2 4" RUBBER	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	PAINTED GYP. BOARD	ACT	8'-10"	
233 T	CORRIDOR	F2 CARPET TILE	B2 4" RUBBER	-	-	-	-	-	-	

INTERIOR FINISH NOTES

- 1

VINYL BASE SHALL BE 4" EQUAL TO "JOHNSONITE", COLOR SHALL BE AS SELECTED BY ARCHITECT.
- 2

APPLY (1) ONE COAT OF PRIMER AND (2) TWO COATS OF EGG SHELL/SATIN FINISH ON GYP. BOARD, COLOR SHALL BE AS SELECTED BY OWNER.
- 3

PAINT ALL INTERIOR METAL DOORS AND/OR FRAMES WITH (1) ONE COAT OF PRIMER AND (2) TWO COATS FOR METAL SURFACES, COLOR SHALL BE AS SELECTED BY OWNER.
- 4

ACOUSTICAL CEILING TILE SHALL MATCH EXISTING CEILING TILE SYSTEM.
- 5

EXISTING ROOMS SHALL BE PATCHED AND REPAIRED AS NEEDED.
- 6

REMOVE THE EXISTING 1" VERTICAL BLINDS AND RETURN TO OWNER (TYP.)

FLOOR COVERING:

- F1

EXISTING TO REMAIN
- F2

CARPET TILE
J & J FLOORING, IMPROMPTU MODULAR
CARPET TILE:
COLOR : 2384 "AT FIRST GLANCE"
- F3

CERAMIC TILE ACCENT

WALL BASE:

- B1

EXISTING TO REMAIN
- B2

4" RUBBER BASE

ACCENT / ACCESSORIES:

- A1

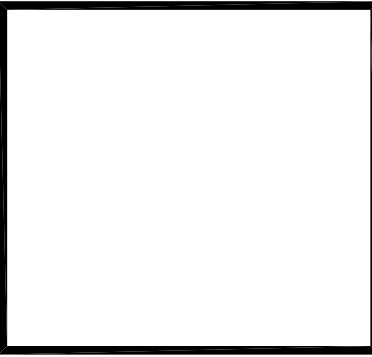
ACCENT PAINT 1
- A2

ANODIZED (ADA) TRANSITION STRIP
- A3

VINYL TRANSITION STRIP

GENERAL NOTES:

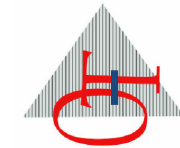
1. PROVIDE VINYL TRANSITION STRIP BETWEEN CARPET EDGE AND ADJACENT FLOOR FINISHES, TYP. COLOR AS SELECTED BY ARCHITECT.
2. PREPARE EXISTING WALLS TO RECEIVE NEW FINISHES. (I.E. FILL EXISTING HOLES AND GOUGES PRIOR TO WALL FINISH.) SMOOTH FINISH
3. PAINT GYPSUM BOARD SOFFITS, TYPICAL.
4. FLOOR PATCHING:
• FOR AREAS THAT RECEIVE CARPET OR CERAMIC TILE - PATCH HOLES, GOUGES, CRACKS, AND IMPERFECTIONS IN CONCRETE FLUSH WITH ADJACENT CONCRETE TO ACHIEVE SMOOTH SUBSTRATE FOR NEW FINISHES, UNLESS NOTED OTHERWISE.
5. IT IS THE INTENT THAT COLOR CHANGES BE MADE AT INSIDE CORNERS THROUGHOUT, UNLESS NOTED OTHERWISE, WHERE THIS CHANGE IS MADE, EDGES AT COLOR CHANGE ARE TO BE CLEAN OUT.
6. N.I.C. MEANS NOT IN CONTRACT.
7. TRANSITION STRIP REQUIRED AT DOORS FOR CHANGES IN FLOORING MATERIALS.
8. TILE GROUT COLORS TO BE SELECTED BY OWNER.
9. PAINT FINISH SHALL BE EGG SHELL / SATIN FINISH.



REVISIONS

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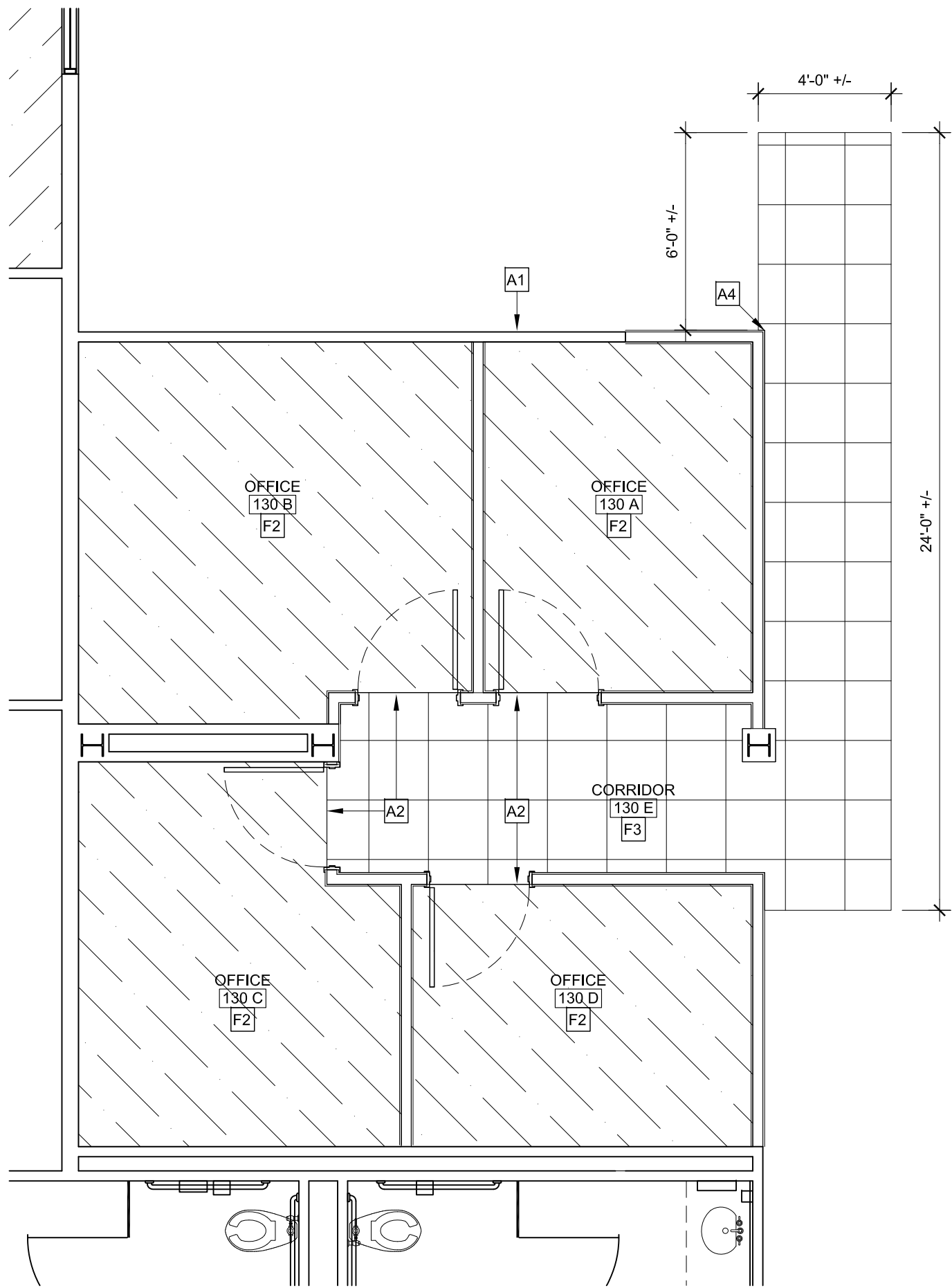
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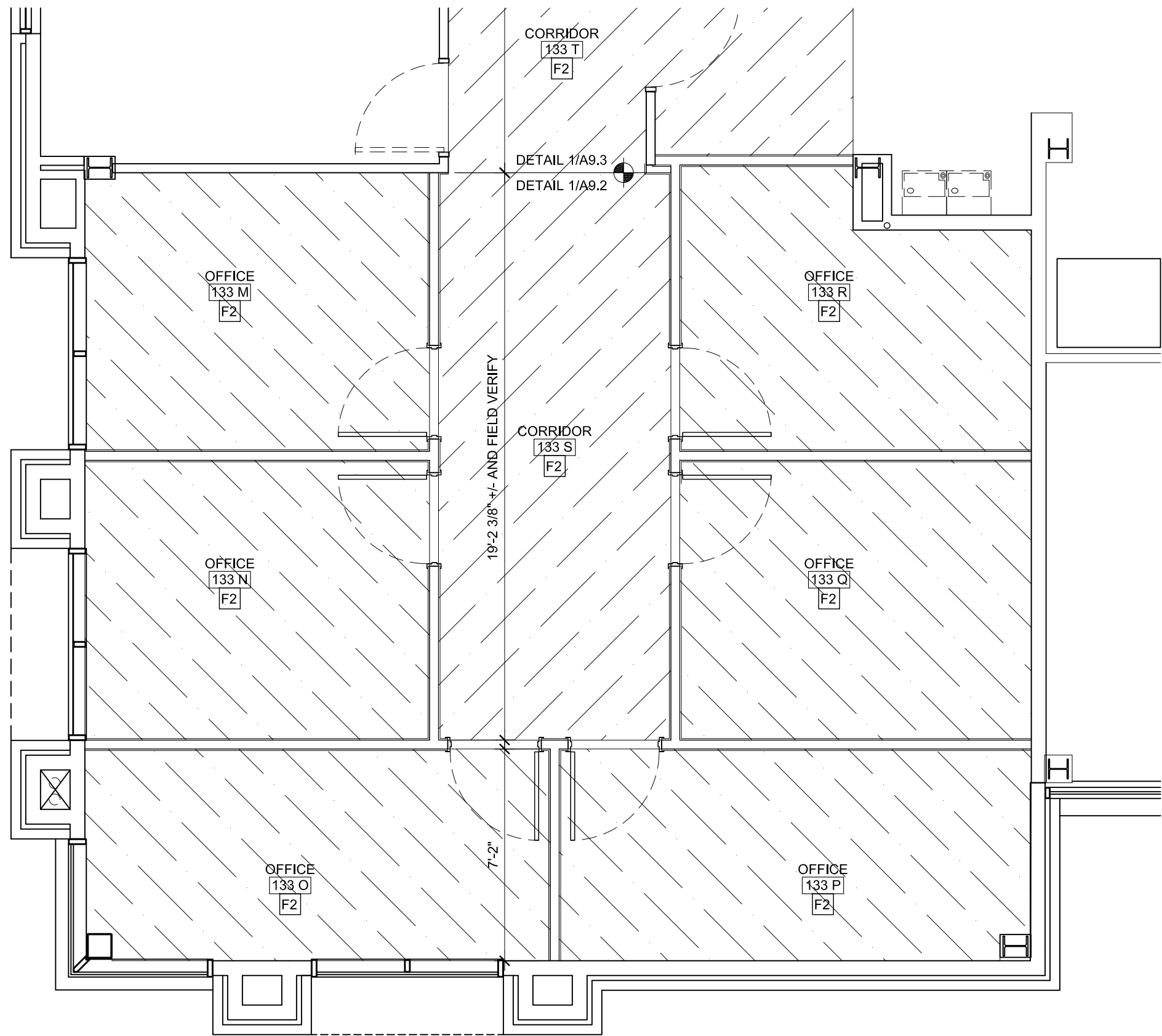
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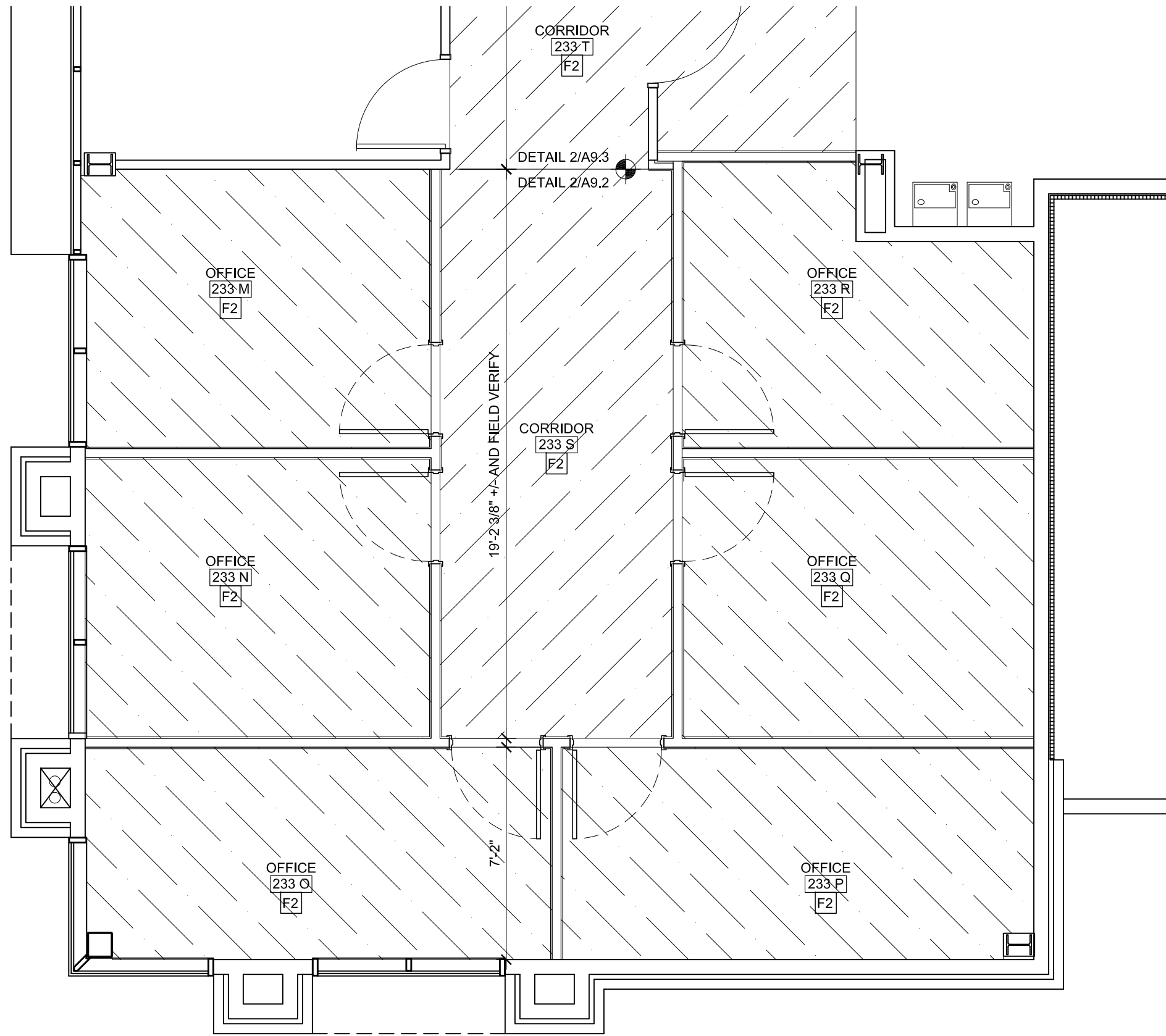
A9.1



3
A9.2 FLOOR FINISH PLAN - SUITE 130 - BID ALTERNATE #1
1/4"=1'-0"



1
A9.2 FLOOR FINISH PLAN - SUITE 133
1/4"=1'-0"



2
A9.2 FLOOR FINISH PLAN - SUITE 233
1/4"=1'-0"

FINISHED LEGEND:

ROOM FINISH KEY - F1|B1|W1|A1

TYPICAL FINISHES FOR ROOM WHERE LOCATED.
EXCEPTIONS - WHERE SPECIFIC KEY SHOWS
OTHERWISE, SUCH AS ACCENT WALLS, TRIM,
STAIRS, ETC.

FLOOR COVERING:

- F1 EXISTING TO REMAIN
F2 CARPET TILE
J & J FLOORING, IMPROMPTU MODULAR
CARPET TILE:
COLOR : 2384 "AT FIRST GLANCE"
F3 CERAMIC TILE ACCENT

WALL BASE:

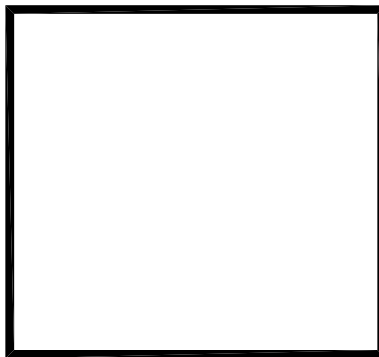
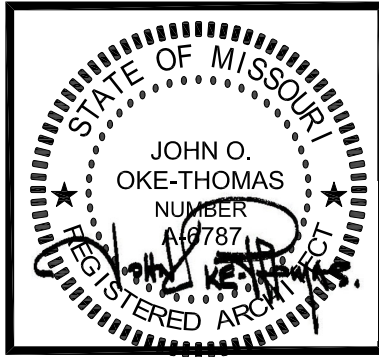
- B1 EXISTING TO REMAIN
B2 4" RUBBER BASE

WALL FINISH:

- W1 EXISTING TO REMAIN
W2 PAINT - SMOOTH FINISHED GYP

ACCENT / ACCESSORIES:

- A1 ACCENT PAINT BY OWNER
A2 ANODIZED (ADA) TRANSITION STRIP
A3 VINYL TRANSITION STRIP
A4 ALUMINUM CORNER GUARD BY OWNER



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DD PACKAGE	7/14/2021
90% CD PACKAGE	8/13/2021
FINAL SET	8/24/2021

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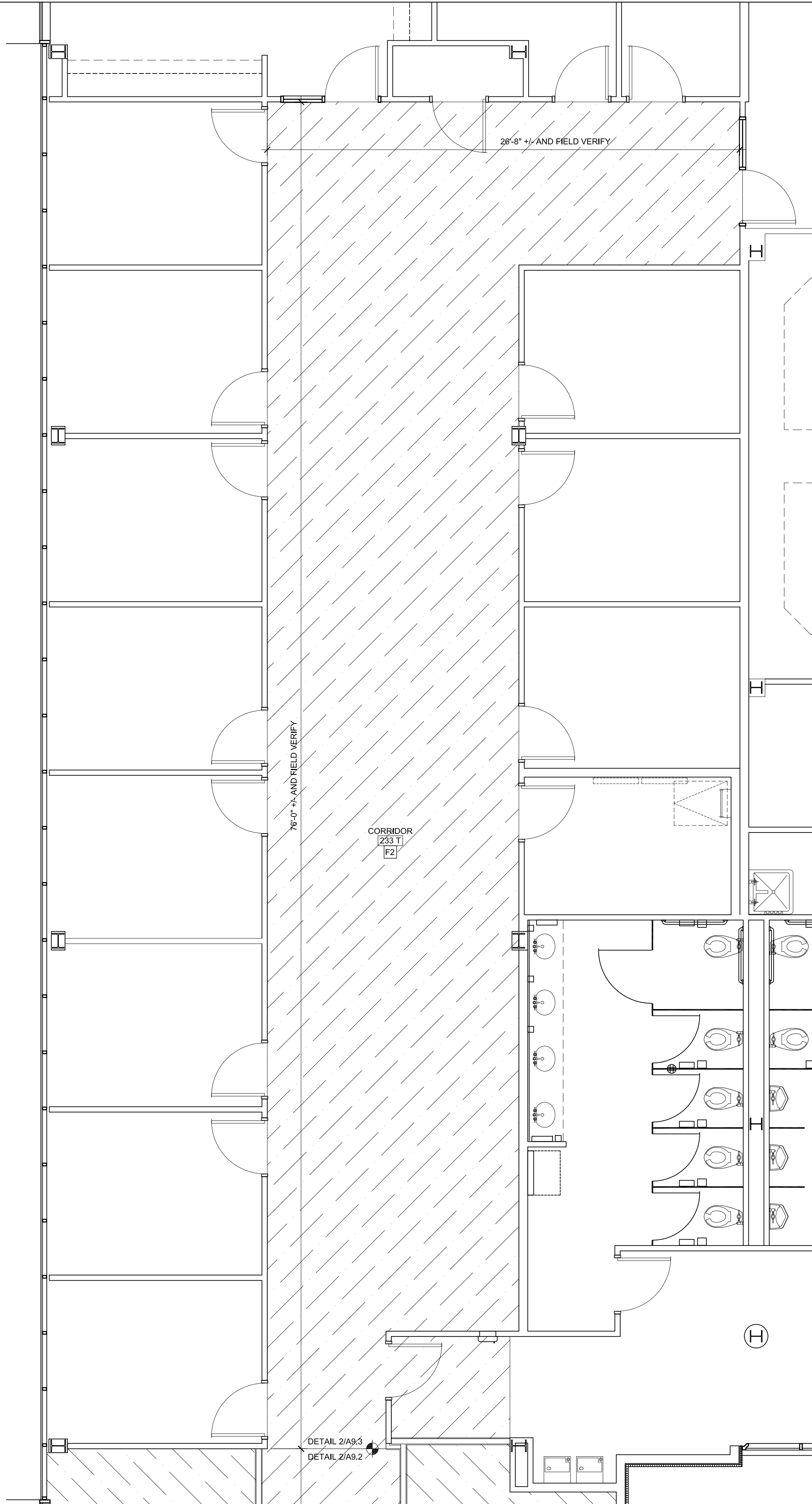
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IN THE
NORMAN K. MYERS TECHNICAL EDUCATION BUILDING
OZARKS TECHNICAL COMMUNITY COLLEGE
1001 EAST CHESTNUT EXPRESSWAY SPRINGFIELD, MO 65802

DATE
AUGUST 24, 2021

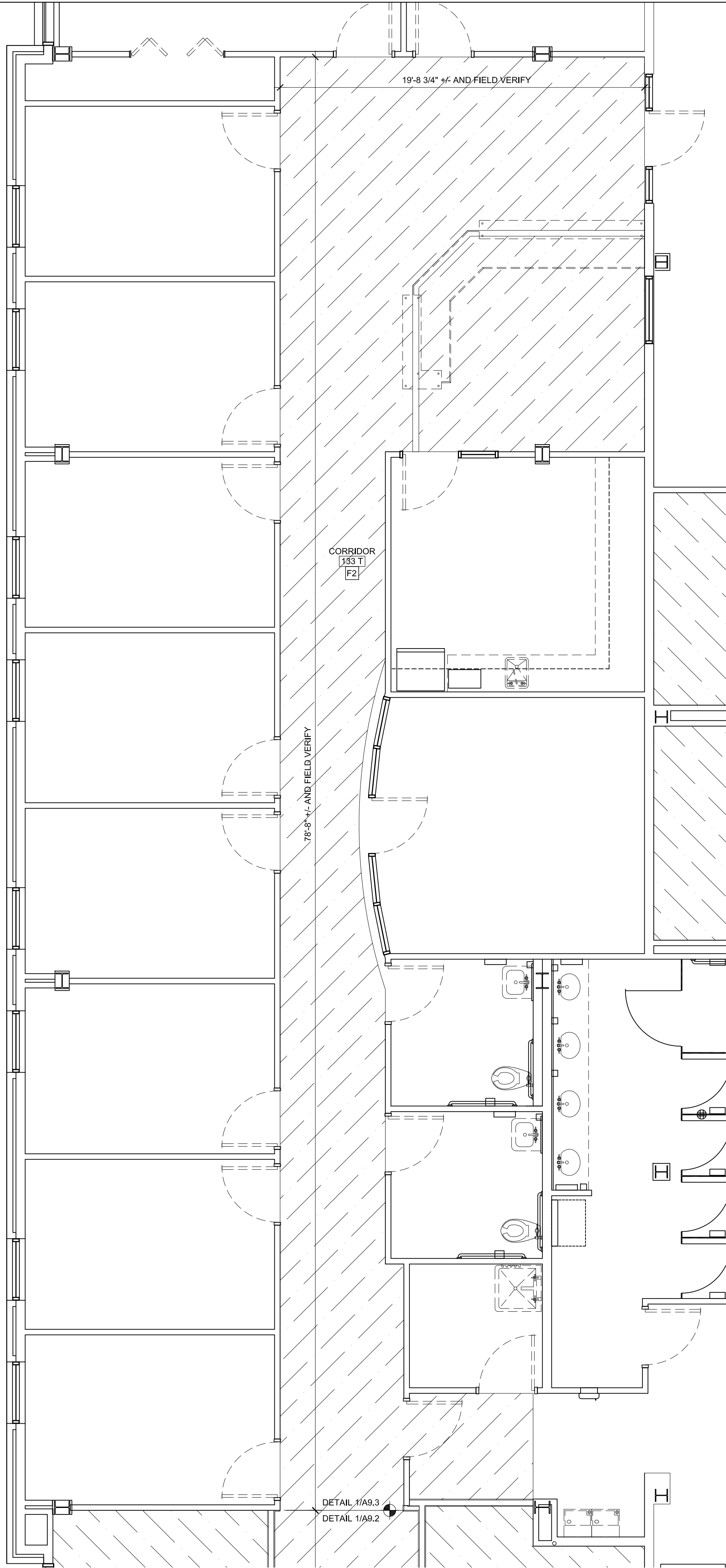
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21-115

SHEET NO.
A9.2

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2
A9.3 | FLOOR FINISH PLAN - CORRIDOR
1/4"=1'-0"



1
A9.3 | FLOOR FINISH PLAN - CORRIDOR
1/4"=1'-0"

FINISHED LEGEND:

ROOM FINISH KEY - [F1][B1][W][A]

TYPICAL FINISHES FOR ROOM WHERE LOCATED.
EXCEPTIONS - WHERE SPECIFIC KEY SHOWS
OTHERWISE, SUCH AS ACCENT WALLS, TRIM,
STAIRS, ETC.

FLOOR COVERING:

- [F1] EXISTING TO REMAIN
[F2] CARPET TILE
J & J FLOORING, IMPROMPTU MODULAR
CARPET TILE:
COLOR : 2384 "AT FIRST GLANCE"
[F3] CERAMIC TILE ACCENT

WALL BASE:

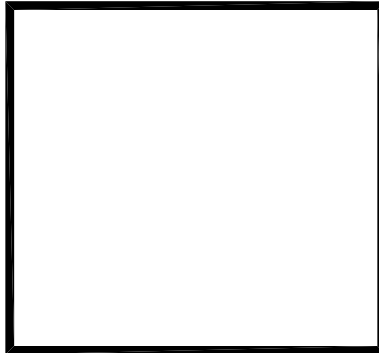
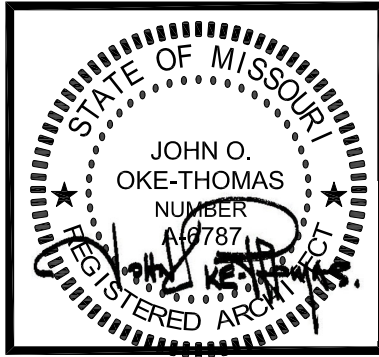
- [B1] EXISTING TO REMAIN
[B2] 4" RUBBER BASE

WALL FINISH:

- [W1] EXISTING TO REMAIN
[W2] PAINT - SMOOTH FINISHED GYP

ACCENT / ACCESSORIES:

- [A1] ACCENT PAINT BY OWNER
[A2] ANODIZED (ADA) TRANSITION STRIP
[A3] VINYL TRANSITION STRIP
[A4] ALUMINUM CORNER GUARD BY OWNER



REVISIONS	
DD PACKAGE	7/14/2021
90% CD PACKAGE	8/13/2021
FINAL SET	8/24/2021

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MECHANICAL SYMBOLS

— · —	DOMESTIC COLD WATER
— · · —	DOMESTIC HOT WATER
— · · · —	DOMESTIC HOT WATER RETURN
— T —	TEMPERED WATER
— DW —	CHILLED DRINKING WATER
— + — + —	WASTE PIPING – ABOVE FLOOR
— - - - -	WASTE PIPING – BELOW FLOOR
— + RD — + —	ROOF DRAIN – ABOVE FLOOR
— - RD — - -	ROOF DRAIN – BELOW FLOOR
— + AW — + —	ACID WASTE – ABOVE FLOOR
— - AW — - -	ACID WASTE – BELOW FLOOR
— + GW — + —	GREASE WASTE – ABOVE FLOOR
— - GW — - -	GREASE WASTE – BELOW FLOOR
— AV —	ACID VENT
— - - - -	VENT PIPING
— D —	DRAIN
— A —	COMPRESSED AIR
— G —	NATURAL GAS
— V —	VACUUM
— O —	OXYGEN
— LPG —	LIQUEFIED PETROLEUM GAS
— N —	NITROUS OXIDE
— W —	WATER SERVICE
— F —	FIRE SERVICE
— SP —	STANDPIPE
— · / —	FIRE SPRINKLER
— / — / —	HIGH PRESSURE STEAM SUPPLY
— - - - - / - - - - -	HIGH PRESSURE STEAM RETURN
— / — / —	MEDIUM PRESSURE STEAM SUPPLY
— - - - - / - - - - -	MEDIUM PRESSURE STEAM RETURN
— LP —	LOW PRESSURE STEAM SUPPLY
— - LP — - -	LOW PRESSURE STEAM RETURN
— · — · —	CONDENSATE PUMP DISCHARGE
— · — · —	FEEDWATER PUMP DISCHARGE
— HWS —	HOT WATER HEATING SUPPLY
— - HWR — - -	HOT WATER HEATING RETURN
— FOR —	FUEL OIL RETURN
— FOG —	FUEL OIL GAGE LINE
— FOS —	FUEL OIL SUPPLY
— FOV —	FUEL OIL VENT
— HTWS —	HIGH TEMPERATURE WATER SUPPLY
— - HTWR — - -	HIGH TEMPERATURE WATER RETURN
— CWS —	CHILLED WATER SUPPLY
— - CWR — - -	CHILLED WATER RETURN
— CHS —	CHILLED / HOT WATER SUPPLY
— - CHR — - -	CHILLED / HOT WATER RETURN
— C —	CONDENSER WATER SUPPLY
— - CR — - -	CONDENSER WATER RETURN
— HPS —	HEAT PUMP SUPPLY
— - HPR — - -	HEAT PUMP RETURN
— RL —	REFRIGERANT LIQUID
— RD —	REFRIGERANT DISCHARGE (HOT GAS)
— RS —	REFRIGERANT SUCTION
— RDB —	REFRIGERANT DISCHARGE BYPASS
— IN —	INTAKE PIPING
— EX —	EXHAUST PIPING
— + — + —	SHUT-OFF VALVE
— + — + —	CHECK VALVE
— + — + —	BALANCING VALVE W/ PRESSURE PORTS
— + — + —	TRIPLE DUTY VALVE W/ PRESSURE PORTS
— S —	STRAINER
— + — + —	RELIEF VALVE
— + — + —	AUTOMATIC FLOW CONTROL VALVE
— + — + —	MOTORIZED VALVES
— + — + —	TEMPERATURE REGULATING VALVE
— + — + —	SOLENOID VALVE
— + — + —	PRESSURE REDUCING VALVE
— + — + —	PIPE ANCHOR
— + — + —	SLIDING EXPANSION JOINT
— + — + —	BELLOWS EXPANSION JOINT
— + — + —	SPRINKLER HEAD
— + — + —	REDUCER
— + — + —	PIPE GUIDE
— + — + —	ROOF PIPING SUPPORT
— + — + —	F & T TRAP
— + — + —	BUCKET TRAP
— + — + —	IMPULSE TRAP
— + — + —	THERMOSTATIC TRAP
— + — + —	FLOAT TRAP
— + — + —	PRESSURE GAUGE
— + — + —	THERMOMETER
— + — + —	UNION
— + — + —	BACKFLOW PREVENTER
— + — + —	DOMESTIC WATER MIXING VALVE
— + — + —	METER

MECHANICAL SYMBOLS

— + HB —	HOSE BIBB
— + WH —	WALL HYDRANT
— + FFCO —	FLUSH FLOOR CLEANOUT
— + FGOO —	FLUSH GRADE CLEANOUT
— + CO —	CLEANOUT
— + — + —	ELBOW UP WITH SHUT-OFF VALVE
— + — + —	ELBOW DOWN WITH SHUT-OFF VALVE
— + — + —	TEE UP WITH SHUT-OFF VALVE
— + — + —	TEE DOWN WITH SHUT-OFF VALVE
— + — + —	CAP
— + — + —	SHOCK ABSORBER
— + — + —	TEMPERATURE SENSOR
— + — + —	FLOW SWITCH
— + — + —	FLOOR SINK, TYPE & SIZE
— + — + —	FLOOR DRAIN, TYPE & SIZE
— + — + —	FLOOR TROUGH, TYPE & SIZE
— + — + —	ROOF DRAIN, TYPE & SIZE

1 2	WATER CLOSET & TYPE
1 2	WATER CLOSET & TYPE
1 2	WATER CLOSET & TYPE
1 2	URINAL & TYPE
1 2	WALL MOUNTED LAVATORY & TYPE
1 2	COUNTER TOP LAVATORY & TYPE
1 2	SINK & TYPE
1 2	BATHTUB & TYPE
1 2	SHOWER & TYPE
1 2	DRINKING FOUNTAIN & TYPE
1 2	JANITORS BASIN & TYPE
1 2	SHOWER HEADS & TYPE
1 2	LINEAR SLOT DIFFUSER
1 2	INSULATED FLEXIBLE DUCT
1 2	VOLUME DAMPER WITH LOCKING QUADRANT
1 2	BRANCH DUCT WITH 45° BOOT FITTING
1 2	ELBOW WITH TURNING VANES
1 2	BRANCH DUCT WITH BELLMOUTH SPIN-IN FITTING WITH MANUAL VOLUME DAMPER
1 2	EQUIP. WITH FLEXIBLE DUCT CONNECTION
1 2	RETURN, EXHAUST OR FRESH AIR DUCT UP
1 2	RETURN, EXHAUST OR FRESH AIR DUCT DOWN
1 2	SUPPLY AIR DUCT UP
1 2	SUPPLY AIR DUCT DOWN

1 2 3	REGISTER, SIZE, TYPE & CFM
1 2 3	REGISTER, SIZE, TYPE & CFM
1 2 3	REGISTER, SIZE, TYPE & CFM
1 2	FIRE DAMPER
1 2	SMOKE DAMPER
1 2	FIRE/SMOKE DAMPER
1 2	MOTORIZED DAMPER
1 2	CONTROL DAMPER
1 2	RELIEF DAMPER
1 2	BALANCE DAMPER
1 2	TEMPERATURE SENSOR—MOUNT AT 4'-0" A.F.F.
1 2	TEMPERATURE SENSOR WITH ADJUSTABLE SETPOINT AND OVER RIDE BUTTON – MOUNT AT 4'-0" A.F.F.
1 2	HUMIDITY SENSOR—MOUNT AT 4'-0" A.F.F.
1 2	PNEUMATIC THERMOSTAT – MOUNT AT 4'-0" A.F.F. UNLESS NOTED OTHERWISE
1 2	PNEUMATIC NIGHT THERMOSTAT—MOUNT AT 4'-0" A.F.F.
1 2	CARBON DIOXIDE SENSOR—MOUNT AT 4'-0" A.F.F.
1 2	AVERAGING TEMPERATURE SENSOR—MOUNT AT 4'-0" A.F.F.
1 2	CARBON DIOXIDE SENSOR—PLENUM MOUNTED

ELECTRICAL SYMBOLS

— A* —	LIGHT FIXTURE & TYPE
— A* —	LIGHT FIXTURE WITH INNER & OUTER BALLASTS SWITCHED SEPARATELY
— A* —	EMERGENCY LIGHT FIXTURE
— A* —	NIGHT LIGHT – UNSWITCHED
— A* —	LIGHT FIXTURE & TYPE (CEILING OR WALL MOUNTED)
— A* —	EXIT LIGHT & TYPE (CEILING OR WALL MOUNTED)
— A* —	COMBINATION EXIT/EMERGENCY LIGHT & TYPE (CEILING OR WALL MOUNTED)
— A* —	ARROW INDICATES CHEVRON DIRECTION(S) FILLED SEGMENT SHOWS FACE DIRECTION(S)
— A* —	LIGHT TRACK WITH LIGHT TYPES AS INDICATED
— A* —	EMERGENCY LIGHT & TYPE
— A* —	JUNCTION BOX 4" SQUARE UNLESS NOTED OTHERWISE
— A* —	JUNCTION BOX – CEILING MOUNTED
— A* —	JUNCTION BOX ON STUBBED UP CONDUIT
— A* —	ELECTRIC THERMOSTAT UP 4'-0" UNLESS NOTED OTHERWISE
— A* —	ELECTRIC NIGHT THERMOSTAT UP 4'-0" UNLESS NOTED OTHERWISE
— A* —	ELECTRIC HUMIDISTAT
— A* —	MOTOR – USE INDICATED

S	15AMP, SINGLE POLE 120/277V SWITCH
S ₃	15AMP, THREE-WAY 120/277V SWITCH
S ₄	15AMP, FOUR-WAY 120/277V SWITCH
S _p	15AMP, SINGLE POLE 120/277V SWITCH WITH PILOT LAMP
S	20AMP, SINGLE POLE 120/277V SWITCH
S ₃	20AMP, THREE-WAY 120/277V SWITCH
S ₄	20AMP, FOUR-WAY 120/277V SWITCH
S _p	20AMP, SINGLE POLE 120/277V SWITCH WITH PILOT LAMP
S _u	20AMP, MOMENTARY CONTACT 120/277V SWITCH
S _x	20AMP, SINGLE POLE 120/277V SWITCH – KEY OPERATED
S ₂	20AMP, DOUBLE POLE 120/277V SWITCH
S ₃	30AMP, DOUBLE POLE 120/277V SWITCH
S _{hok}	"HAND-OFF-AUTO" SELECTOR SWITCH
S _{ro}	MANUAL STARTER WITH THERMAL OVERLOADS
S _{ot}	120V SPRING WOUND TIMER
S _{et}	120V ELECTRONIC TIMER
S _{lv}	LOW VOLTAGE SWITCH
S _n	NARROW SWITCH

S _{oc}	WALL SWITCH OCCUPANCY SENSOR AND TYPE PER SCHEDULE
S _{va}	WALL SWITCH VACANCY SENSOR AND TYPE PER SCHEDULE
S _o	WALL MOUNT OCCUPANCY SENSOR AND TYPE PER SCHEDULE
S _o	CEILING MOUNT OCCUPANCY SENSOR AND TYPE PER SCHEDULE
S _o	WALL MOUNT VACANCY SENSOR AND TYPE PER SCHEDULE
S _o	CEILING MOUNT VACANCY SENSOR AND TYPE PER SCHEDULE
S _o	DIMMING SYSTEM CONTROL STATION – SECOND LETTER DENOTES STATION DESIGNATION IN SCHEDULE
S _o	DIMMING SYSTEM REMOTE STATION – SECOND LETTER DENOTES STATION DESIGNATION IN SCHEDULE

—	EXPOSED METAL RACEWAY – WIREMOLD
—	CONDUIT CONCEALED IN ROOF INSULATION
—	CONDUIT CONCEALED IN CEILING OR WALL
—	CONDUIT CONCEALED IN FLOOR SLAB
—	EXPOSED CONDUIT
—	HOME RUN – DIAGONAL LINES INDICATE NUMBER OF WIRES, ARROWS INDICATE NUMBER OF CIRCUITS
—	#18 WIRE
—	#16 WIRE
—	#14 WIRE
—	#12 WIRE
—	SHEATHED CABLE
—	BRANCH CIRCUIT OR FEEDER – SEE SCHEDULE FOR CONDUCTOR & CONDUIT QUANTITY & SIZE
—	FLEXIBLE CONDUIT
—	GROUND WIRE

ELECTRICAL SYMBOLS

—	SWITCHED RECEPTACLE WITH APPROPRIATE RECEPTACLE(S)
—	DUPLEX 15AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	DUPLEX 20AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	4-PLEX 20AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	DUPLEX 15AMP, 250V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	DUPLEX 20AMP, 250V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	DUPLEX 20AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE MOUNTED ABOVE CEILING
—	RECESS MOUNTED FLOOR BOX WITH APPROPRIATE RECEPTACLE(S)
—	TWO RECESS MOUNTED FLOOR BOXES WITH APPROPRIATE RECEPTACLE(S) INSTALLED TOGETHER
—	STUBBED UP CONDUIT WITH APPROPRIATE RECEPTACLE(S) OUTLET BOX TO BE FS BOX
—	SINGLE 15AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 20AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 15AMP, 250V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 20AMP, 250V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 50AMP, 250V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 20AMP, 125/250V, 3P, 4W GROUNDING TYPE RECEPTACLE
—	SINGLE 30AMP, 125V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 30AMP, 250V, 2P, 3W GROUNDING TYPE RECEPTACLE
—	SINGLE 30AMP, 125/250V, 3P, 4W GROUNDING TYPE RECEPTACLE
—	SINGLE 20AMP, 250V, 3 PHASE, 3P, 4W GROUNDING TYPE RECEPTACLE
—	SINGLE 20AMP, 120/208V, 3 PHASE, 4P, 4W GROUNDING TYPE RECEPTACLE
—	SINGLE 60AMP, 120/208V, 3 PHASE, 4P, 4W GROUNDING TYPE RECEPTACLE
—	PLUGMOLD – OUTLETS AT 12" O.C. UNLESS NOTED OTHERWISE
—	CLOCK OUTLET (RECEPTACLE)
—	** TELEPHONE OUTLET
—	RECESS MOUNTED FLOOR TELEPHONE OUTLET
—	SURFACE MOUNTED FLOOR TELEPHONE OUTLET
—	** COMPUTER DATA OUTLET
—	FLOOR MOUNTED COMPUTER DATA OUTLET
—	** TELEVISION OUTLET – WALL
—	** TELEVISION OUTLET – TABLE/CABINET MOUNT
—	** UNLESS NOTED OTHERWISE ELSEWHERE ON THE DRAWINGS OR IN THE SPECIFICATIONS, THESE OUTLETS REQUIRE 4"x4"x2.5"D JUNCTION BOX WITH SINGLE GANG PLASTER RING AND CONDUIT WITH 90° SWEEP AND DE-BURRED ENDS (MIN.) TO ABOVE THE NEAREST ACCESSIBLE LAY-IN CEILING

—	CEILING FAN
—	LIGHTING & APPLIANCE PANEL
—	DISTRIBUTION, FEEDER OR POWER PANEL
—	TELEPHONE TERMINAL CABINET ("TTC")
—	PULL BOX
—	MAGNETIC MOTOR CONTROLLER
—	COMBINATION MAGNETIC MOTOR CONTROLLER
—	DISCONNECT SWITCH
—	MANUAL MOTOR CONTROLLER
—	TIME SWITCH
—	LIGHTING CONTACTOR
—	PHOTOCELL
—	TELE – POWER POLE
—	POWER POLE
—	UNDERGROUND ELECTRIC
—	OVERHEAD ELECTRIC
—	UNDERGROUND TELEPHONE
—	OVERHEAD TELEPHONE
—	*** SMOKE DAMPER
—	*** FIRE/SMOKE DAMPER
—	UNLESS NOTED OR SHOWN OTHERWISE ELSEWHERE ON THE DRAWINGS OR IN THE SPECIFICATIONS, THESE DEVICES REQUIRE A FIRE ALARM DUCT SMOKE DETECTOR AND A 120V POWER SOURCE FROM THE NEAREST RECEPTACLE CIRCUIT.

ELECTRICAL SYMBOLS

—	END OF LINE RELAY
—	WATER FLOW SWITCH
—	VALVE TAMPER SWITCH
—	FAN SHUTDOWN RELAY
—	MANUAL FIRE ALARM STATION – MOUNTING HEIGHT SHALL BE AS REQUIRED BY THE INTERNATIONAL BUILDING CODE. COORDINATE WITH EQUIPMENT MANUFACTURER BASED ON ACTUALLY PROVIDED EQUIPMENT.
—	FIRE ALARM RELAY
—	END OF LINE RESISTOR
—	FIRE ALARM STROBE – MOUNTING HEIGHT SHALL BE AS REQUIRED BY THE LATEST EDITION OF NFPA 72. COORDINATE WITH EQUIPMENT MANUFACTURER BASED ON ACTUALLY PROVIDED EQUIPMENT.
—	FIRE ALARM BELL
—	BELL
—	FIRE AUDIBLE AND VISUAL ALARM – MOUNTING HEIGHT SHALL BE AS REQUIRED BY THE LATEST EDITION OF NFPA 72. COORDINATE WITH EQUIPMENT MANUFACTURER BASED ON ACTUALLY PROVIDED EQUIPMENT.
—	HORN
—	FIRE ALARM CONTROL CABINET
—	FIRE ALARM ANNUNCIATOR PANEL
—	CARBON MONOXIDE SENSOR
—	DUCT THERMOSTAT
—	DUCT SMOKE DETECTOR
—	CEILING SMOKE DETECTOR CENTRAL SYSTEM
—	THERMAL DETECTOR (HEAT)
—	CEILING SMOKE DETECTOR – STAND ALONE 120V, BATTERY BACKUP. UNLESS NOTED OR SHOWN DIFFERENTLY ON THE PLANS OR SPECIFICATIONS, PROVIDE 120V POWER FROM THE NEAREST RECEPTACLE CIRCUIT WHETHER SPECIFICALLY INDICATED OR NOT.
—	ELECTRIC DOOR HOLDER
—	FIREMAN'S TELEPHONE OUTLET
—	NURSE CALL MASTER STATION
—	NURSE CALL ANNUNCIATION PANEL
—	NURSE CALL SYSTEM POWER SUPPLY
—	NURSE CALL STATUS LIGHT ANNUNCIATION PANEL
—	NURSE CALL SWITCH PANEL
—	NURSE CALL ROOM STATUS CORRIDOR LIGHT – WALL MOUNT
—	NURSE CALL ROOM STATUS CORRIDOR LIGHT – CEILING MOUNT
—	NURSE CALL CORRIDOR LIGHT – WALL MOUNT
—	NURSE CALL CORRIDOR LIGHT – CEILING MOUNT
—	NURSE CALL PATIENT STATION – SINGLE CALL CORD
—	NURSE CALL PATIENT STATION – DOUBLE CALL CORD
—	NURSE CALL DUTY STATION
—	NURSE CALL EMERGENCY STATION – PULL CORD
—	NURSE CALL EMERGENCY STATION – PUSH BUTTON
—	NURSE CALL CODE BLUE STATION
—	DOOR ALARM CONTACT
—	DOOR ALARM ANNUNCIATOR
—	MONITOR JUNCTION BOX
—	CLOSED CIRCUIT TELEVISION MONITOR
—	CLOSED CIRCUIT TELEVISION CAMERA
—	MASTER CLOCK
—	SECONDARY CLOCK
—	INTERCOM ADMINISTRATIVE CONTROL UNIT
—	MUSIC SYSTEM AMP
—	PAGING SYSTEM AMP
—	WALL SPEAKER
—	COMBINATION CLOCK SPEAKER
—	CEILING SPEAKER
—	COLUMN SPEAKER
—	HORN TYPE SPEAKER
—	MICROPHONE OUTLET – WALL
—	MICROPHONE OUTLET – FLOOR
—	LOCAL AMPLIFIER
—	REMOTE VOLUME CONTROL
—	CALL-IN STATION
—	MOTION DETECTOR
—	CLOSED CIRCUIT TELEVISION OUTLET
—	PUSHBUTTON STATION
—	PILOT LIGHT BANK
—	RELAY CABINET
—	AMPLIFIER
—	LOW VOLTAGE CONTROL TRANSFORMER
—	SOLENOID VALVE
—	FREEZE STAT

PLAN NOTATIONS

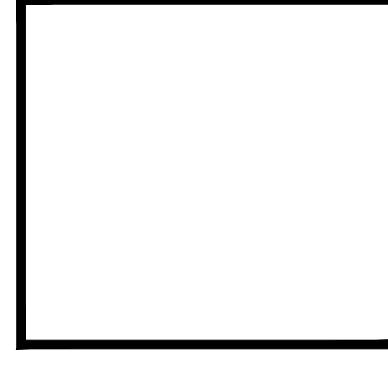
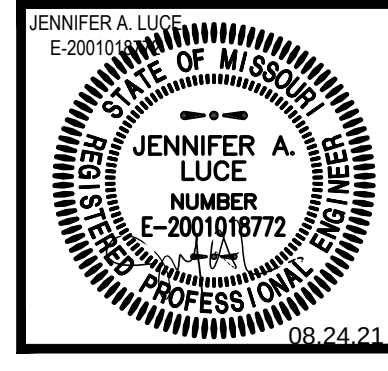
—	INDICATES DIRECTION OF NORTH
—	DETAIL REFERENCE – UPPER NUMBER INDICATES DETAIL NUMBER, LOWER NUMBER INDICATES SHEET NUMBER.
—	PLAN NOTE REFERENCE
—	ROOM NUMBER REFERENCE
—	INDICATES CONNECTION TO EXISTING SYSTEM

ABBREVIATIONS

AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CW	DOMESTIC COLD WATER
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DF	DRINKING FOUNTAIN
DN	DOWN
EF	EXHAUST FAN
EW	ELECTRIC WATER COOLER
E/M	EQUIPMENT MANUFACTURER
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FFCO	FINISHED FLOOR CLEANOUT
FGCO	FINISHED GRADE CLEANOUT
FTR	FINNED TUBE RADIATION
FWCO	FINISHED WALL CLEANOUT
HH	HYDRONIC HEAT PUMP
HW	DOMESTIC HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
UH	UNIT HEATER
UV	UNIT VENTILATOR
V	VENT
VTR	VENT THRU ROOF
W	WASTE

ELECTRICAL NOTATIONS

"AC" or "A"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES DEVICE BOTTOM TO BE MOUNTED 4" ABOVE COUNTERTOP BACKSPLASH
"GF"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES GROUND FAULT INTERRUPTER
"IG"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES ISOLATED GROUND DEVICE
"SS"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES SURGE SUPPRESSION DEVICE
"TL"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES LOCKING OR TWIST-LOCK TYPE DEVICE
"WP"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES WEATHER-PROOF ENCLOSURE
"WPI"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES WEATHER-PROOF IN-USE ENCLOSURE
"XP"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES EXPLOSION-PROOF ENCLOSURE
"TR"	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES TAMPER RESISTANT DEVICE
60"	DIMENSIONS ADJACENT TO ANY SYMBOL INDICATES MOUNTING HEIGHT TO CENTERLINE OF DEVICE
(TIE)	INDICATES HOMERUNS WITH SAME CIRCUIT NUMBER TO BE WIRED TOGETHER ON SAME CIRCUIT.



REVISIONS	
SD SET	7/21/2021
DD SET	8/13/2021
FINAL SET	8/24/2021

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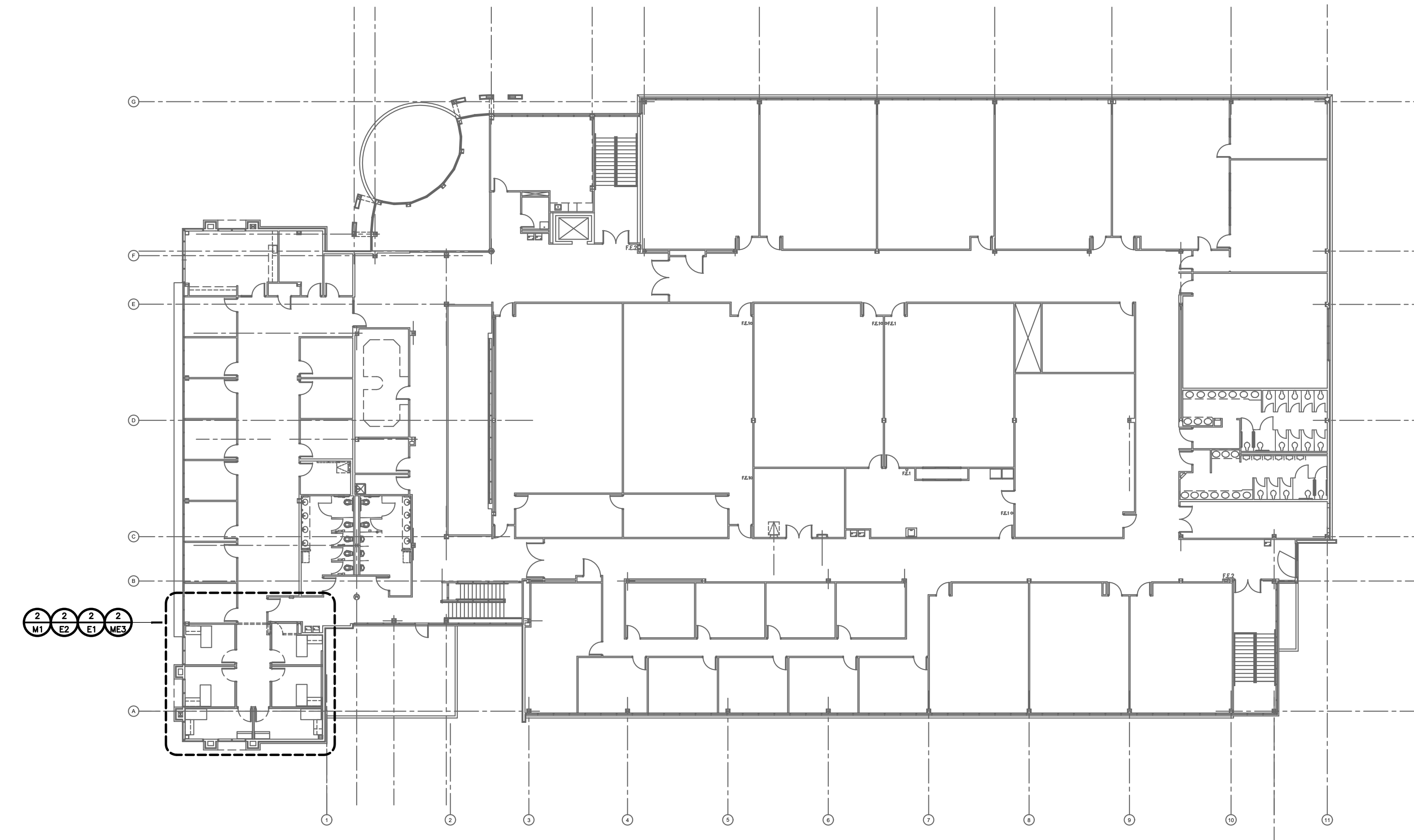
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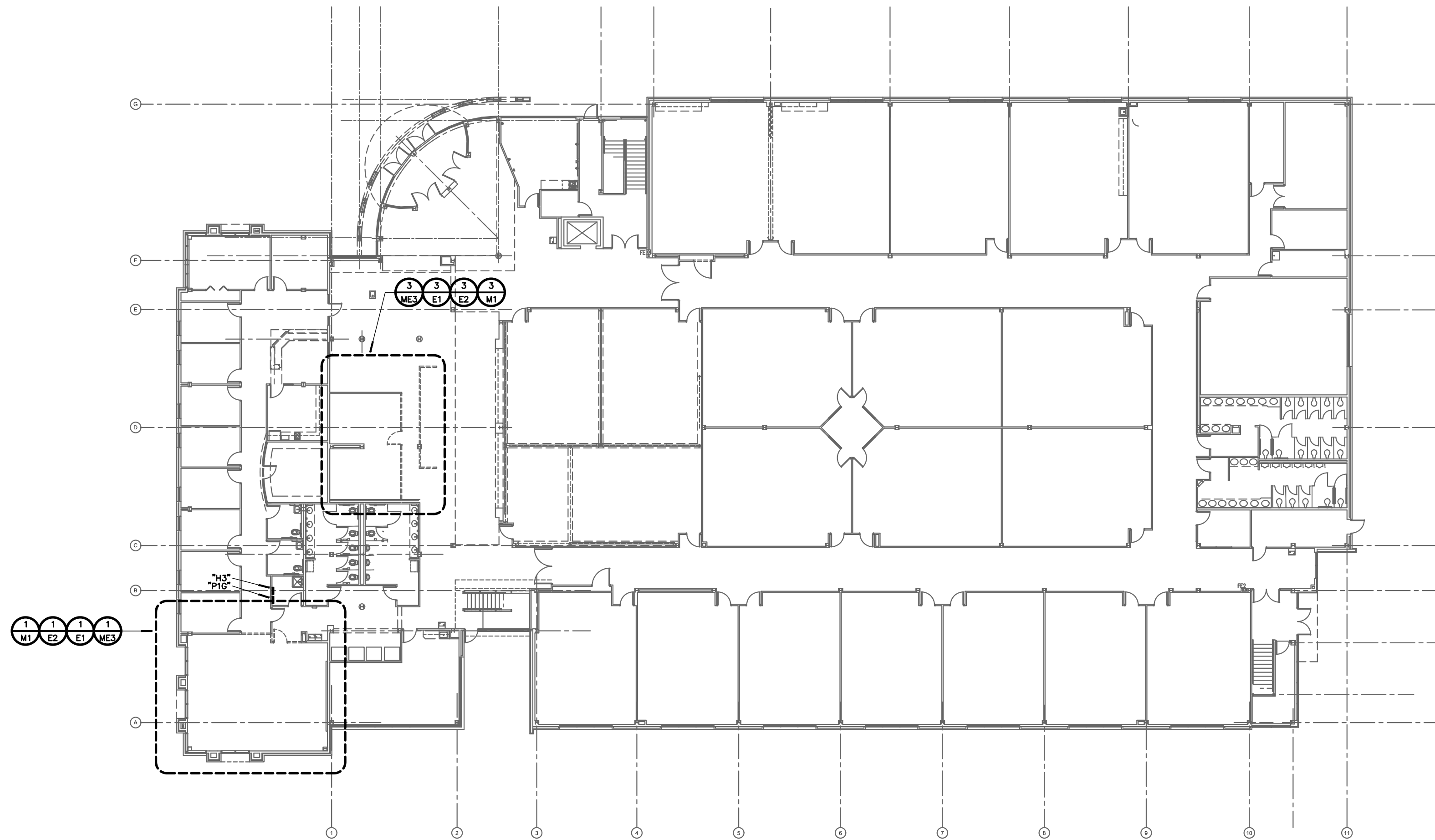
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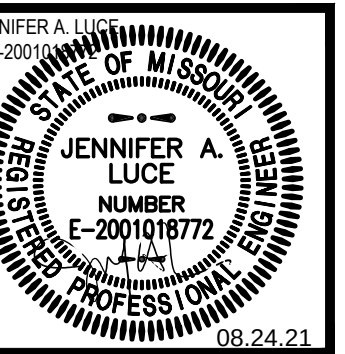


2
ME2 **OVERALL SECOND FLOOR PLAN**
SCALE: 1"=20' NORTH



1
ME2 **OVERALL FIRST FLOOR PLAN**
SCALE: 1"=20' NORTH

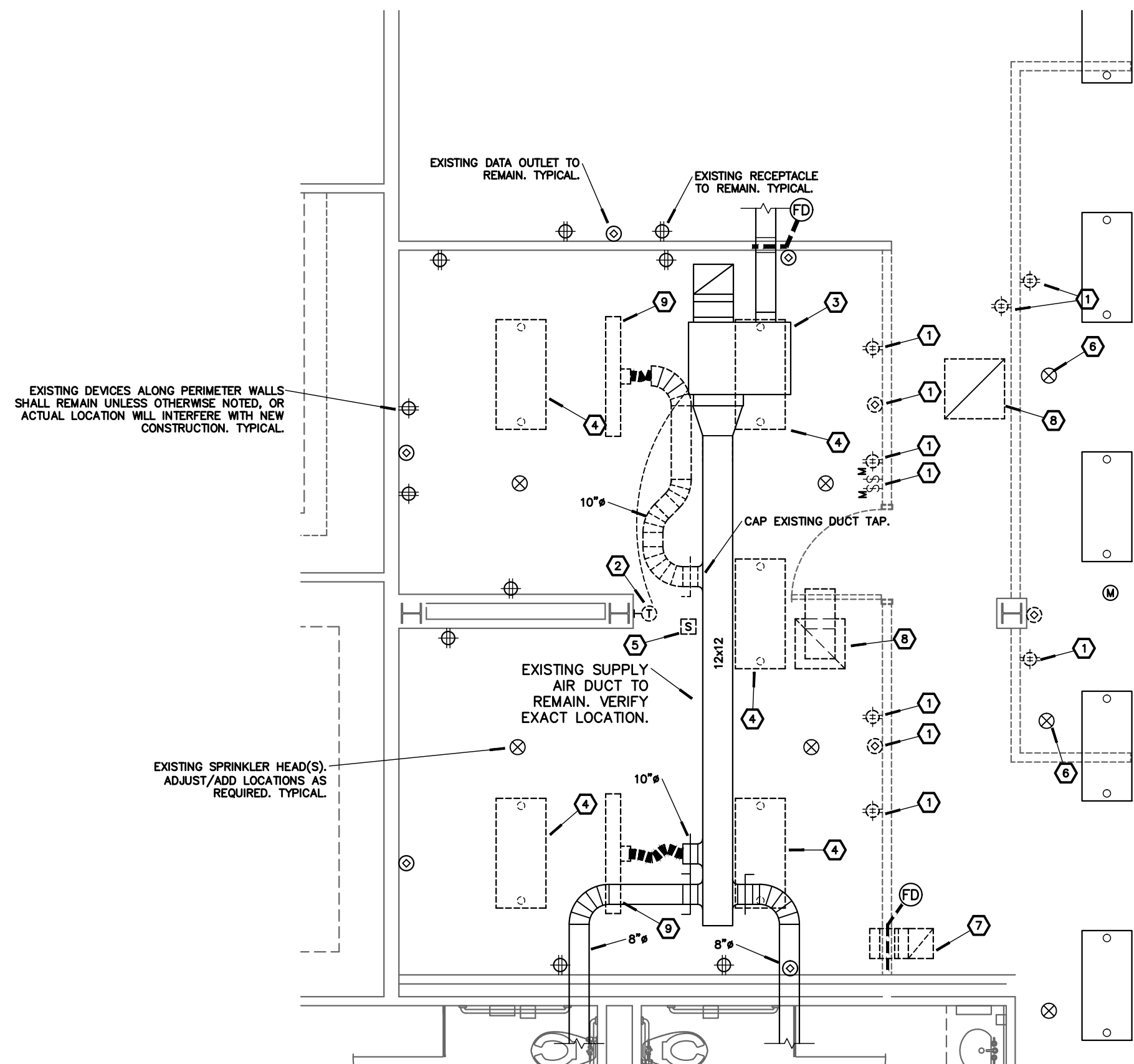
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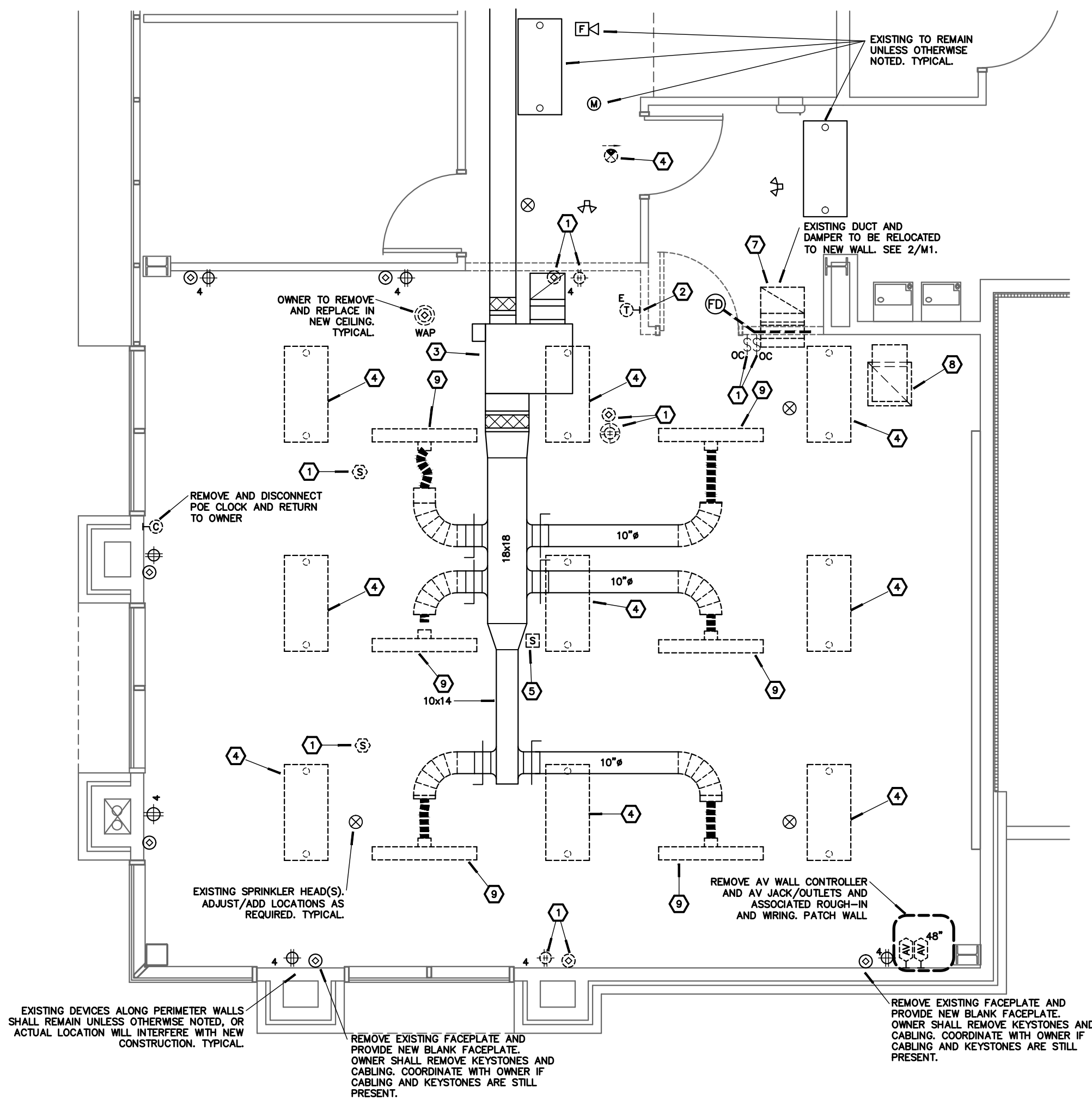
REVISIONS	
SD SET	7/21/2021
DD SET	8/13/2021
FINAL SET	8/24/2021

OKE-THOMAS + ASSOCIATES, INC.
• ARCHITECTS • PLANNERS • MANAGERS • CONTRACTORS
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TELEPHONE: (417) 865-6262 FAX: (417) 865-9222

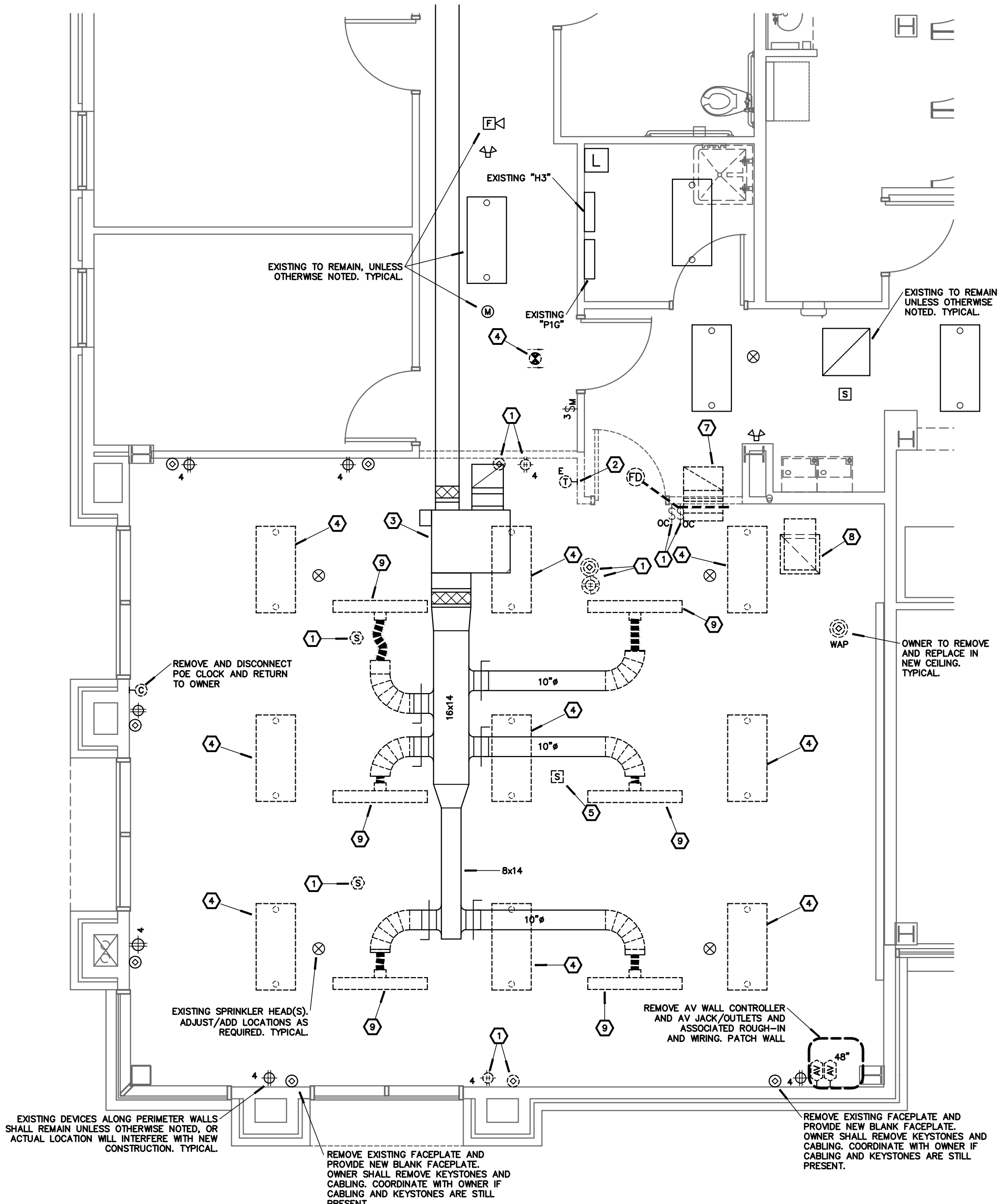
OFFICE RENOVATIONS
IN THE
NORMAN K. MYERS TECHNICAL EDUCATION BUILDING
OZARKS TECHNICAL COMMUNITY COLLEGE
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3 FIRST FLOOR ENLARGED DEMO PLAN
ME3 SCALE: 1/4"=1'-0" NORTH



2 SECOND FLOOR ENLARGED DEMO PLAN
ME3 SCALE: 1/4"=1'-0" NORTH



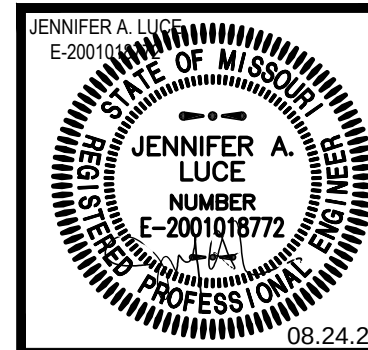
1 FIRST FLOOR ENLARGED DEMO PLAN
ME3 SCALE: 1/4"=1'-0" NORTH

NOTES:

- REMOVE DEVICE, WIRING AND CONDUIT FROM WALL BEING DEMOLISHED. ALL WIRING AND CONDUIT ASSOCIATED WITH DEVICE SHALL BE REMOVED BACK TO POINT OF ORIGIN OR NEAREST JUNCTION BOX. OWNER SHALL HANDLE ALL WORK ASSOCIATED WITH DATA CABLES AND JACKS. PATCH AND REPAIR WALL AS NECESSARY, AND PREPARE FOR NEW FINISH, IF WALL IS NOT DEMOLISHED.
- THERMOSTAT SHALL BE REMOVED AND RELOCATED. SEE IMPROVEMENT PLANS FOR NEW LOCATION OF EXISTING THERMOSTAT. ELECTRICAL CONTRACTOR SHALL REMOVE BACK BOX AND CONDUIT. MECHANICAL CONTRACTOR SHALL REMOVE DEVICE AND DISCONNECT FROM EXISTING EQUIPMENT.
- EXISTING FAN TERMINAL UNIT AND ASSOCIATED POWER, CONDUIT, AND DUCTWORK TO REMAIN.
- EXISTING LIGHT FIXTURE SHALL BE REMOVED, ASSOCIATED WIRING, AND CONDUIT SHALL REMAIN FOR NEW LED LIGHT FIXTURE. SEE IMPROVEMENT PLANS.
- FIRE ALARM DEVICE SHALL BE REMOVED AND RELOCATED. SEE IMPROVEMENT PLANS FOR NEW LOCATION OF EXISTING FIRE ALARM DEVICE.
- EXISTING SPRINKLER HEAD TO BE RELOCATED IF REQUIRED BY NFPA (MIN OF 4" CLEARANCE).
- EXISTING DUCT AND DAMPER TO BE RELOCATED. SEE IMPROVEMENT FOR NEW LOCATION.
- EXISTING RETURN AIR GRILLE TO BE RELOCATED. SEE IMPROVEMENT PLAN FOR NEW LOCATION.
- DEMOLISH EXISTING LINEAR DIFFUSER AND FLEX DUCT. EXISTING BRANCH TAP AND DAMPER TO BE REUSED.

GENERAL NOTES:

- INFORMATION ON THESE DRAWINGS REPRESENT INFORMATION FROM OLD DRAWINGS AND LIMITED SITE INSPECTIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID. NO EXTRAS SHALL BE PAID DUE TO UNANTICIPATED CONDITIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING, PATCH, AND REPAIR OF ALL WALL AND FLOOR SYSTEM AS REQUIRED DUE TO NEW CONSTRUCTION. MAINTAIN ALL FIRE RATINGS.
- FOR ALL EXISTING FIXTURES, RECEPTACLES, WIRING, EQUIPMENT, ETC. SHOWN TO BE REMOVED, THE OWNER SHALL HAVE THE FIRST RIGHT OF REFUSAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL ELECTRICAL DEVICES AND WIRING IN ALL DEMOLISHED WALLS WHETHER SPECIFICALLY INDICATED OR NOT.
- WHERE DEMOLISHED DEVICES ARE PART OF A CIRCUIT THAT IS THRU-WIRED, OR HAS ADDITIONAL DEVICES ON THE CIRCUIT THAT ARE TO REMAIN UNCHANGED, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE EXISTING CIRCUIT. ANY ADDITIONAL CONDUIT, CONDUCTOR, BOXES, ETC NEEDED TO MODIFY THE EXISTING CIRCUIT TO MAINTAIN THE INTEGRITY ARE THE RESPONSIBILITY OF THIS CONTRACTOR AND SHALL BE INCLUDED IN BID.
- REMOVE CONDUIT IN ALL DEMOLISHED WALLS.
- REMOVE ANY UNUSED CONDUCTORS, CONDUIT, AND WIRING IN DEMOLISHED WALLS LOCATED WITHIN THE AREA OF CONSTRUCTION. REMOVE ALL UNUSED WIRING. CONDUIT CAN BE ABANDONED IN PLACE WHERE IT WILL REMAIN CONCEALED.
- REMOVE AND REPLACE DEVICES AS REQUIRED DUE TO NEW WALL OR CEILING FINISHES.



REVISIONS

SD SET	7/21/2021
DD SET	8/13/2021
FINAL SET	8/24/2021

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IN THE
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DATE
AUGUST 24, 2021

COMM. NO.
21-115

SHEET NO.

ME3

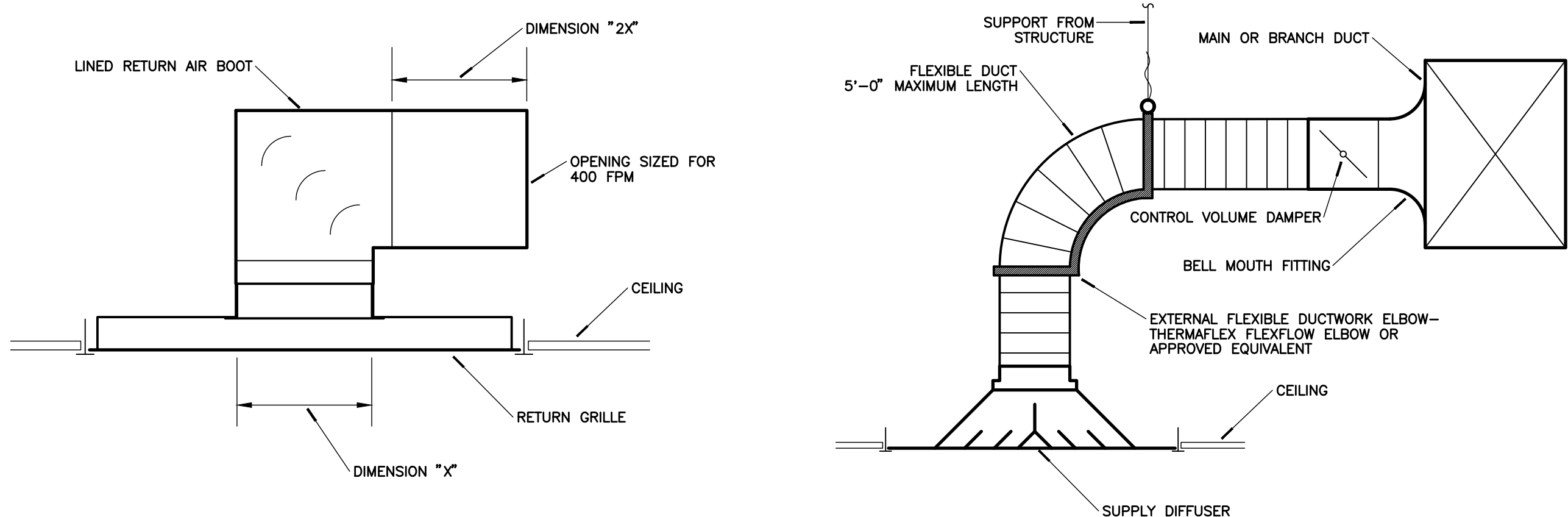
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GRILLES, REGISTERS & DIFFUSER SCHEDULE

MARK	MANUFACTURER	CATALOG #	APP	FINISH	FRAME TYPE	VOLUME DAMPER	MAX NC (DB)	MIN THROW (FT)	MAX THROW (FT)	MAX PRESS DROP
A	TITUS	TDCA-24x24	SUP	WHITE	T-BAR	YES	30	8	16	0.1"
B	TITUS	PAR-24x24	RET/EXH	WHITE	T-BAR	NO	30	-	-	0.08"

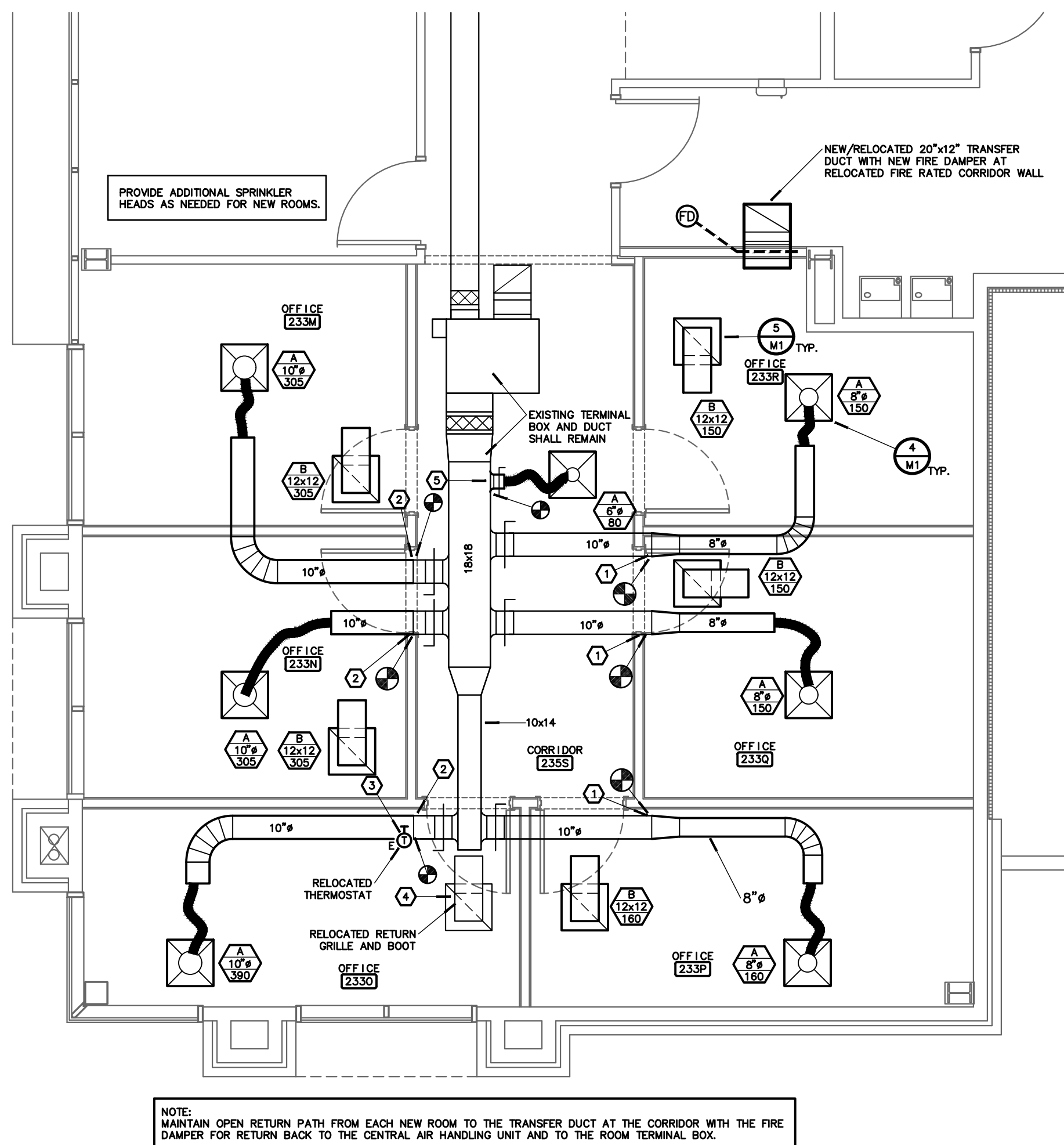
ABBREVIATIONS:
EXH - EXHAUST
RET - RETURN
SUP - SUPPLY

NOTES:
1. THROWS ARE BASED ON 50 FEET PER MINUTE VELOCITY.
2. OPPOSED BLADE DAMPERS SHALL BE PROVIDED ON ALL DIFFUSERS REQUIRING VOLUME DAMPERS.

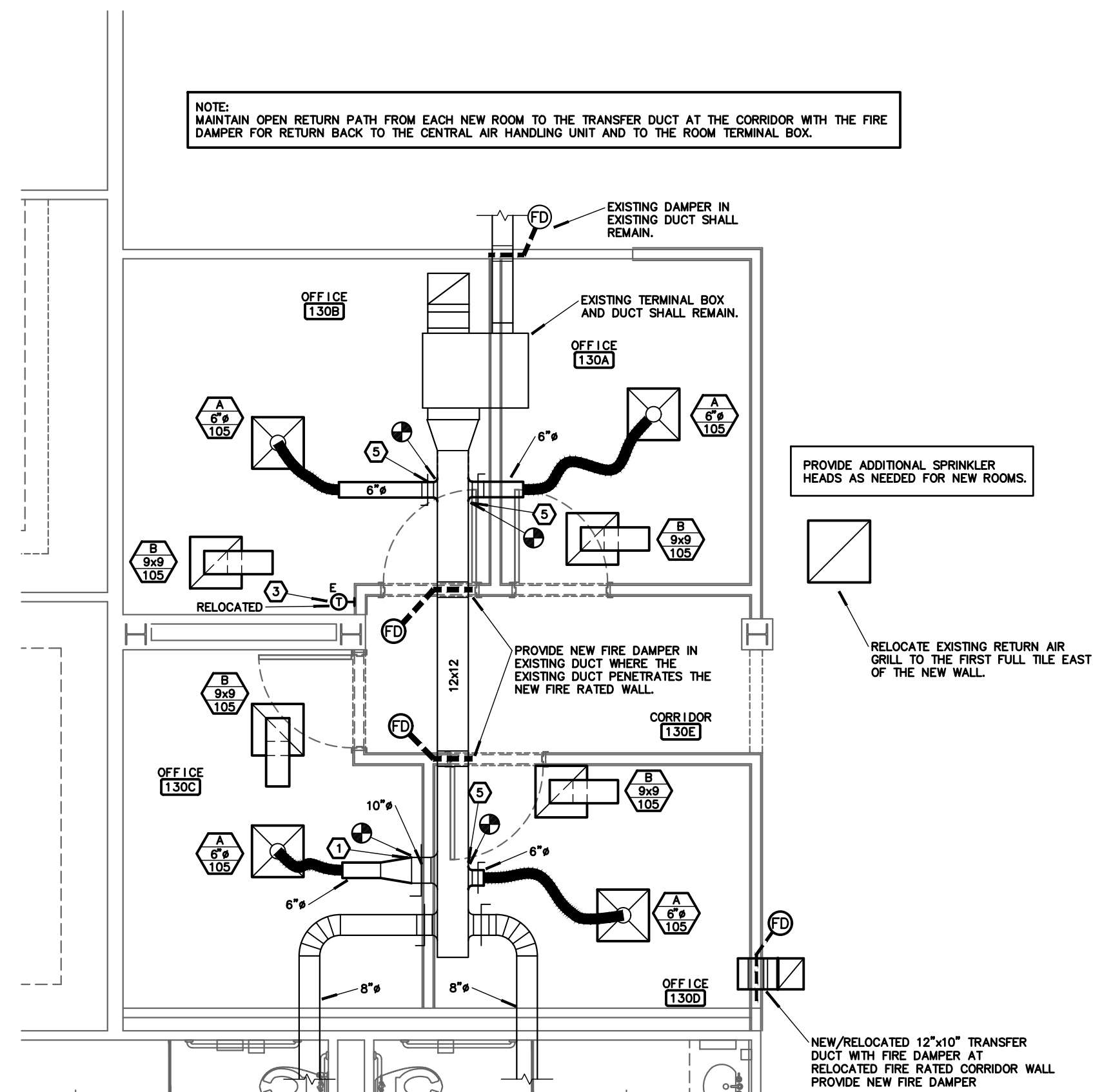


5 RETURN AIR BOOT DETAIL
M1 NO SCALE

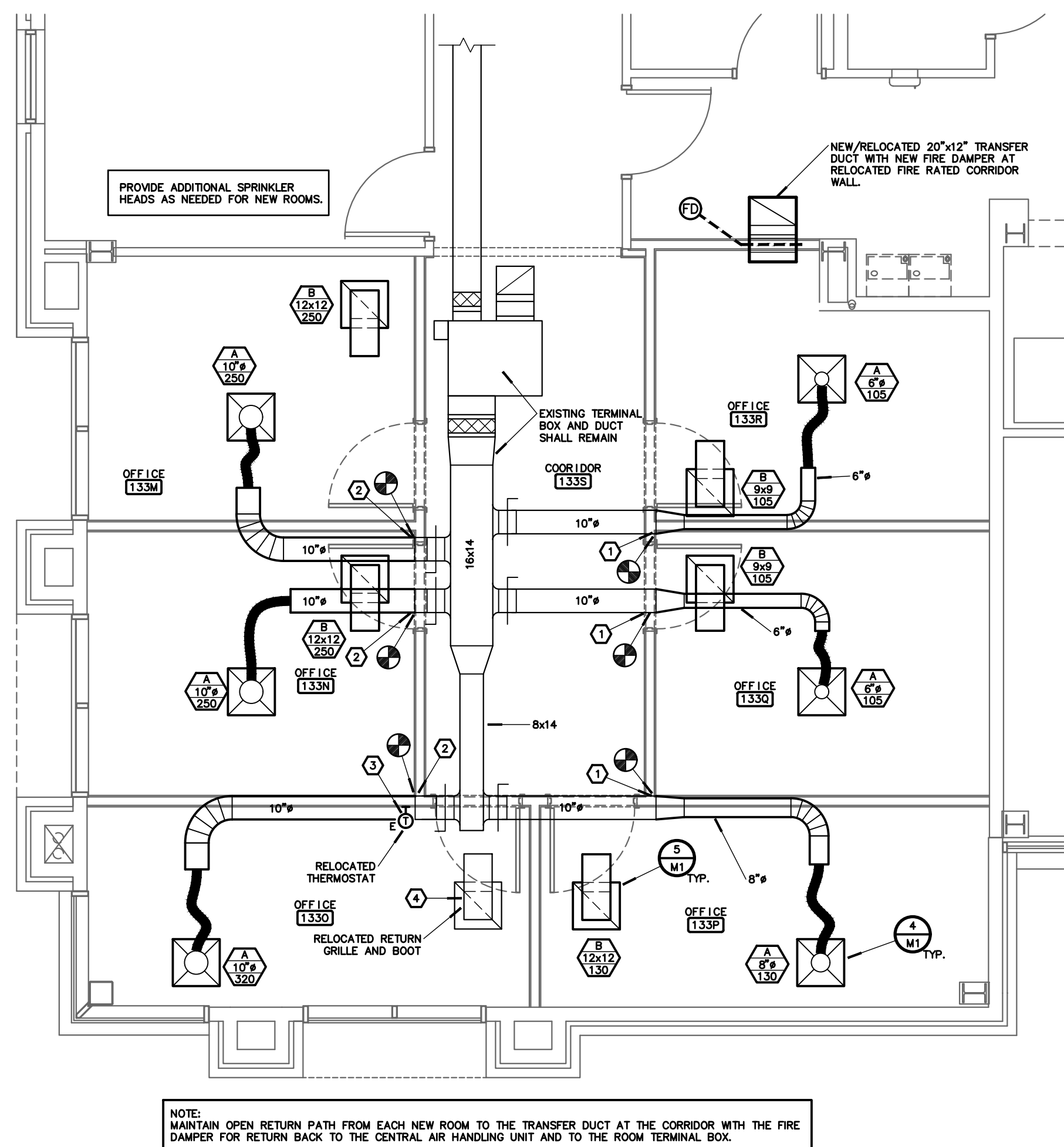
4 CEILING DIFFUSER DETAIL
M1 NO SCALE



2 SECOND FLOOR PARTIAL HVAC PLAN
M1 SCALE: 1/4"=1'-0" NORTH



3 BID ALTERNATE #01
M1 FIRST FLOOR PARTIAL HVAC PLAN
SCALE: 1/4"=1'-0" NORTH



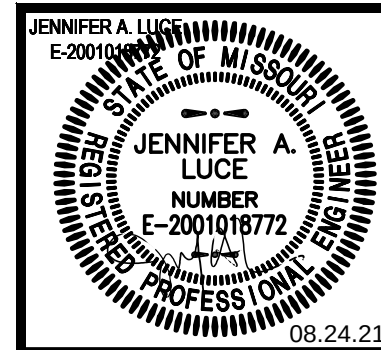
1 FIRST FLOOR PARTIAL HVAC PLAN
M1 SCALE: 1/4"=1'-0" NORTH

NOTES:

- CONNECT TO EXISTING DUCT AND TRANSITION TO SIZE AS INDICATED. EXTEND DUCT FOR NEW DIFFUSER. FIELD VERIFY EXISTING LOCATION AND SIZE.
- CONNECT AND EXTEND DUCT FOR NEW DIFFUSER. EXTEND RIGID DUCT TO LIMIT FLEX DUCT TO 5' IN LENGTH.
- RELOCATE EXISTING THERMOSTAT TO NEW OFFICE WALL. EXTEND WIRING AS NECESSARY.
- CLEAN AND RELOCATE EXISTING RETURN AIR GRILLE TO NEW OFFICE SPACE.
- TAP EXISTING MAIN FOR NEW BRANCH DUCT. PATCH AND REPAIR MAIN INCLUDING INSULATION AS REQUIRED.

GENERAL NOTES:

- REBALANCE AIRFLOW AND TERMINAL BOX FOR NEW AIRFLOWS AS INDICATED ON DIFFUSER TAGS. PROVIDE DOCUMENTATION FOR EACH NEW DIFFUSER TO OWNER AS PART OF CLOSE OUT DOCUMENTS.
- NEW WALLS ARE NOT EXTENDED TO DECK. MAINTAIN RETURN AIRFLOW PATH ABOVE OPEN CEILING AREA OF AREA OF CONSTRUCTION. EXISTING TRANSFER AND FIRE DAMPERS SHALL REMAIN FOR RETURN BACK TO MAIN BUILDING.
- FOR ALL QUESTIONS ON THIS PROJECT, CONTACT RTM ENGINEERING CONSULTANTS AT (417) 881-0020. CONTACT: JAMES COUCH.
- ALL WORK SHALL BE IN ACCORDANCE WITH 2018 EDITION OF THE INTERNATIONAL PLUMBING AND MECHANICAL CODES AS ADOPTED BY THE CITY OF SPRINGFIELD, MISSOURI.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION PRIOR TO SUBMITTING THE B.I.D.
- PLANS ARE DIAGNOSTIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
- CONTRACTOR SHALL SECURE AND PAY FOR NECESSARY MEP PERMITS AND CERTIFICATES OF INSPECTION REQUIRED BY GOVERNMENTAL ORDINANCES, LAWS, RULES, OR REGULATIONS.
- FINAL ACCEPTANCE OF WORK SHALL BE SUBJECT TO THE CONDITION THAT ALL SYSTEMS, EQUIPMENT, APPARATUS, AND APPLIANCES OPERATE SATISFACTORILY AS DESIGNED AND INTENDED; PROVIDE FOR ALL WORK INDICATED ON DRAWINGS OR AS REASONABLY IMPLIED.
- PROVIDE NECESSARY MATERIALS AND ACCESSORIES FOR INSTALLATION OF FIXTURES, EQUIPMENT, ETC. AS REQUIRED FOR COMPLETE AND FUNCTIONAL OPERATION AS NOTED ON DRAWINGS OR IN NOTES AND IN A MEET AND PROFESSIONAL MANNER AND PER MANUFACTURER RECOMMENDATIONS.
- ACCESS PANELS SHALL BE PROVIDED WHEREVER NECESSARY TO PROVIDE ACCESS TO VALVES, JUNCTION BOXES, DAMPERS, ETC., LOCATED IN CONCEALED SPACES.
- THE CONTRACTOR SHALL CONTACT THE OWNER AND COORDINATE ALL OUTAGES 5 DAYS PRIOR TO ANY SHUT-OFF OF SERVICES.
- THE CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNER'S USE OF THE BUILDING.
- REFER TO ARCHITECTURAL DRAWINGS FOR TYPICAL ROOM INTERIOR ELEVATIONS. COORDINATE EXACT DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO ROUGH-IN.
- SEAL ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES AS NECESSARY TO RESTORE FIRE-RESISTANCE RATING OF ASSEMBLY. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR RATED ASSEMBLIES, FIRE STOPPING MATERIALS, AND REQUIREMENTS.
- 13EACH CONTRACTOR AND SUB-CONTRACTOR OR TRADE SHALL REVIEW THE BID DOCUMENTS AS A WHOLE, INCLUDING ALL OTHER TRADES' DRAWINGS AND PROVIDE ANY MISC. ITEMS, MATERIALS, WORK, ETC. REQUIRED TO COMPLETE THE WORK AS SHOWN ON ALL BID DOCUMENTS. THIS REQUIREMENT APPLIES TO ALL TRADES: STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, EQUIPMENT VENDORS, ETC. REQUIREMENTS AND RELATED WORK ARE INDICATED THROUGHOUT THE BID DOCUMENTS AND SHALL BE REVIEWED WITH THE SPECIFIC MEP, STRUCTURAL, ARCHITECTURAL, AND EQUIPMENT DRAWINGS FOR OVERALL SCOPE OF WORK.
- PATCH AND REPAIR DUCTWORK AND EXISTING PIPING ALONG WITH ASSOCIATED INSULATION AS NEEDED DUE TO SCOPE OF WORK AND ANY NEW TIE-INS. MATCH EXISTING TYPE AND ALL SHALL COMPLY WITH 25/50 FLAME/SMOKE DEVELOPED RATINGS.
- ALL EQUIPMENT/DAMPERS SHALL BE INSTALLED TO ALLOW FULL MAINTENANCE ACCESS PER MANUFACTURER'S RECOMMENDATIONS.
- DUCT MATERIALS SHALL BE AS FOLLOWS:
ROUND SUPPLY AIR DUCT - 1" PRESSURE CLASS OR LESS: GALVANIZED SHAPLOCK PIPE WITH TRANSVERSE JOINTS WAPED. WRAP WITH 1.5", 1.0 LB DENSITY FIBERGLASS DUCT WRAP WITH FOIL-SCRIM-KRAFT FACING.
ROUND FLEXIBLE DUCT: UL LISTED CLASS 1 PRE-INSULATED FLEX DUCT. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5 LINEAR FEET. FLEXIBLE DUCT SHALL NOT BE USED ON SYSTEMS WITH PRESSURE CLASS GREATER THAN 1".
- ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS, MANUAL 15C. ALL SUPPLY AIR DUCT PRESSURE CLASSES SHALL BE THE SAME AS THE EXTERNAL STATIC PRESSURE (ESP) OF THE EQUIPMENT SUPPLYING THE DUCT. THE EQUIPMENT ESP SHALL BE THE PRESSURE CLASS FOR THE ENTIRE SUPPLY DUCT SYSTEM.
- ROUND TAKE-OFF FITTINGS FROM RECTANGULAR DUCTWORK SHALL BE MADE WITH BUDGET BELLMOUTH FITTINGS, OR APPROVED EQUAL.
- THE ENTIRE BUILDING CONTAINS AN EXISTING AUTOMATIC FIRE SPRINKLER SYSTEM. THIS WORK INCLUDES MODIFYING THE EXISTING SYSTEM AS REQUIRED TO MAINTAIN A FULLY OPERATIONAL AUTOMATIC FIRE SPRINKLER SYSTEM FOR ALL AREAS OF THE BUILDING. ALL FIRE SPRINKLER MATERIALS AND INSTALLATION SHALL COMPLY WITH NFPA 13, STATE AND LOCAL CODES AND FACTORY MUTUAL ENGINEERING REQUIREMENTS. FIRE SPRINKLER SYSTEM CONTRACTOR SHALL ENGINEER AND INSTALL THE FIRE SPRINKLER SYSTEM AS REQUIRED TO MAINTAIN PROPER COVERAGE FOR THE REMODELED AREAS OF THE BUILDING.
- BEFORE ANY SPRINKLER WORK BEGINS, SUBMIT SCALED DRAWINGS INDICATING THE LOCATIONS OF SPRINKLER HEADS AND HOW THEY INTERFACE WITH CEILING TILES, LIGHTING FIXTURES, HVAC GRILLES AND DIFFUSERS, ETC. ALL SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILES. LAYOUT DRAWINGS SHALL ALSO INCLUDE, BUT NOT LIMITED TO PIPE SIZES AND LOCATIONS, ELEVATIONS AND SLOPES OF HORIZONTAL PIPING RUNS, COORDINATION OF PIPING WITH DUCTWORK, PIPING ETC., AND HANGER LOCATIONS.
- MODIFY EXISTING SPRINKLER HEADS WHERE LOCATION WILL BE TOO CLOSE TO WALL AS ALLOWED BY NFPA. REPLACE EXISTING HEADS FOR NEW OFFICE SPACES WITH CONCEALED HEAD TYPE. CORRIDORS CAN REUSE EXISTING HEADS/TYP. PROVIDE NEW HEADS AS NEEDED FOR NEW ROOM LAYOUT.
- EQUIVALENT MANUFACTURERS OF GRILLES, REGISTERS AND DIFFUSERS SHALL BE TITUS, KROEGER, OR ANEMOSTAT.
- CONTRACTOR SHALL PROVIDE TEMPORARY FILTERS IN ALL EQUIPMENT OPERATED DURING RENOVATION LOCATED WITHIN THE AREA OF CONSTRUCTION. ALL FILTERS SHALL BE REPLACED AT SUBSTANTIAL COMPLETION FOR ALL TERMINAL BOXES LOCATED WITHIN THE AREA OF CONSTRUCTION.



REVISIONS

SD SET	7/21/2021
DD SET	8/13/2021
FINAL SET	8/24/2021

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OFFICE RENOVATIONS
IN THE
NORMAN K MYERS TECHNICAL EDUCATION BUILDING
OZARKS TECHNICAL COMMUNITY COLLEGE
1001 EAST CHESTNUT EXPRESSWAY • SPRINGFIELD, MO 65802

DATE
AUGUST 24, 2021

COMM. NO.
21-115

SHEET NO.
M1

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Springfield, MO 65804
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state of missouri certificate of authority
#2014033826 for engineering

LIGHTING FIXTURE SCHEDULE									
MARK	MFG.	CATALOG #	MTG.	FINISH	LAMP		EQUIVALENT		
					TYPE	CODE			
A	WILLIAMS	PT-24-L49/840-R40-DM-UVN	REC	WHITE	LED	38W, 4900 LUMEN, 4000K			
B	KEYSTONE	KT-BPLE040-24-8CSA-YOM	REC	WHITE	LED	40W, 4700 LUMEN, 4000K			
EM	SURE-LITES	APEL	UNVN	WHITE	LED	WITH FIXTURE	-		
X	WILLIAMS	EXIT/EL-DF-R-MP-AN-EM-D	UNVN	RED/MIRROR	LED	5W, WITH FIXTURE	-		

ABBREVIATIONS:									
Ab	- ABULITE	Ge	- GENERAL ELEC	Lc	- L1 CENTROLIGHT	Pg	- PROGRESS	Mtg	- MOUNTING
Al	- ALCO	Gh	- GUTH	Le	- LEVITON	Pg	- PRESCOTTE	Rtc	- RECESSED
Ap	- APRILON	Hc	- HANSON	Lf	- LUMINEX	Pg	- PASS-A-SEMIOR	Suf	- SURFACE
Ar	- ARCH AREA LIGHTING	Ho	- HOLOPHONE	Ll	- LONG LIGHTS	Rg	- ROBERTS	Gr	- GROUND
Ca	- CALORITE	Hu	- HUBBELL	Ll	- LINEAR LIGHTING	St	- STAFF	Trk	- TRACK
Cf	- COAST LIGHTING	Hy	- HYDREL	Lt	- LIGHTER	Sp	- SPALDING	Cbl	- CABLE
Cm	- COLUMBIA	Ice	- ICE	Lm	- LUMARK	Spl	- SPI	Mfg	- MANUFACTURER
Cr	- CROUSE-HINES	Id	- IDOLUX	Mw	- MORGAN EDISON	St	- STERNER	Qty	- QUANTITY
De	- DEVINE	Ke	- KENALL	Mt	- METALUX	Sr	- SURE-LITES	Flr	- FLUORESCENT
Dl	- DUAL-LITE	Ki	- KIM	Mt	- MORGAN EDISON	Sw	- SWAN	Inc	- INCANDESCENT
Ed	- EDISON PRICE	Kv	- KURT VERNER	Mu	- MU-LITE	Ti	- TIVOLI	Hid	- HIGH INTENSITY
El	- EMER-LITE	L	- LAM	Pd	- PERELESS	Wt	- WILLIAMS	Disch	- DISCHARGE
Fs	- FAIL-SAFE	Lg	- LIGITALRAMS	Pd	- PRUDENTIAL			Unv	- UNIVERSAL



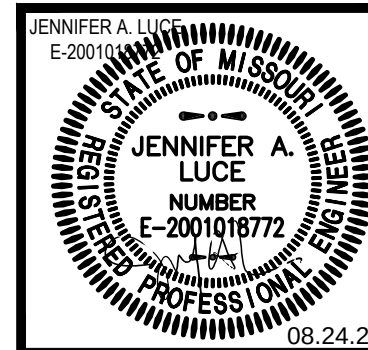
2 SECOND FLOOR PARTIAL LIGHTING PLAN
E1 SCALE: 1/4"=1'-0" NORTH



- ① PROVIDE NEW CEILING OCCUPANCY SENSOR AND WALL DIMMER (TOGGLE WITH SLIDE EQUAL TO LUTRON DIVA) FOR ROOM DIMMING AND OVERRIDE. PROVIDE ALL WIRING AS REQUIRED TO NEW ROOM LIGHTING CONTROLS AND CONNECT TO EXISTING POWER FEED FROM DEMOLISHED LIGHTS IN ROOM/AREA. PROVIDE ROOM CONTROLLER, DUAL TIE CEILING SENSOR, AND MAIN SWITCH. PROVIDE NEW OPERATION. MODIFY FUSIBLE WIRING AND INCLUDE ALL LOW VOLTAGE WIRING FOR COMPLETE AND OPERATIONAL SYSTEM. EQUIP BY LUTRON, WATTSOPPER OR LEVITON. REFERENCE 4/E/1.
- ② CONNECT EXIT SIGN TO UNSWITCHED LIGHTING CIRCUIT FOR HEAVY LIGHTING. CONNECT TO EXISTING WHERE EXIT SIGN WAS REPLACED.
- ③ WIRE TO EXISTING LIGHTING CIRCUIT FROM PREVIOUS LIGHTING IN ROOM.

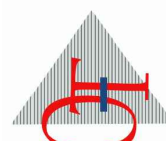
1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE 2017 NATIONAL ELECTRIC CODE AS ADOPTED BY THE CITY OF SPRINGFIELD, MISSOURI.
2. FOR ALL ELECTRICAL QUESTIONS ON THIS PROJECT, CONTACT RTM ENGINEERING CONSULTANTS AT (417) 881-0020, CONTACT: JAMES COUCH.
3. CONTRACTOR SHALL SECURE AND PAY FOR NECESSARY MEP PERMITS AND CERTIFICATES OF INSPECTION REQUIRED BY APPLICABLE ORDINANCES AND REGULATIONS OF THE CITY OF SPRINGFIELD, MISSOURI.
4. FINAL ACCEPTANCE OF WORK SHALL BE SUBJECT TO THE CONDITION THAT ALL SYSTEMS, EQUIPMENT, APPARATUS, AND APPLIANCES OPERATE SATISFACTORILY AS DESIGNED AND AS NOTED ON DRAWINGS AND AS REASONABLY IMPLIED. ADJUSTMENT OF SYSTEMS AND CONTROL EQUIPMENT AND ALL REQUIRED PROGRAMMING INSTALLED. PROVIDE FOR ALL WORKMANSHIP MATERIALS AND ACCESSORIES FOR INSTALLATION OF EQUIPMENT AND APPARATUS. PROVIDE FOR ALL MATERIALS, FUNCTIONAL OPERATION AS NOTED ON DRAWINGS OR IN NOTES.

5. ACCESS PANELS SHALL BE PROVIDED WHEREVER NECESSARY TO PROVIDE ACCESS TO ELECTRICAL DEVICES LOCATED IN CONCEALED SPACES. PROVIDE COVER FOR ANY OPEN JUNCTION BOXES.
6. THE CONTRACTOR SHALL CONTACT THE OWNER AND COORDINATE ALL ELECTRICAL DUES PRIOR TO ANY SHUT-OFF OF SERVICE.
7. PROVIDE ALL FIRE RATED MATERIALS, PATCH PANO AND REPAIR FOR ALL FIRE RATED ASSEMBLIES. ALL OPENINGS SHALL BE SEALED WITH GLOTTED GROUT. PROVIDE SLEEVE WHERE NECESSARY DUE TO SCOPE OF WORK.
8. THE CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNER'S USE OF THE BUILDING.
9. PLANS ARE DIAGRAMATIC AND SHALL NOT BE SCALED. REFER TO THE ELECTRICAL DUES FOR DIMENSIONS.
10. PROVIDE PULL BOXES AS REQUIRED TO PROPERLY INSTALL THE RACEWAYS AND CIRCUITS INDICATED.
11. ALL EMPTY CONDUIT SHALL BE PROVIDED WITH ROT-PROOF PULL-TAPE, LABELED AT EACH END. ALL CONDUITS SHALL BE PROVIDED WITH PLASTIC BUSHINGS WHERE TERMINATED OPEN ENDED.
12. THERMOSTATS AND ALL ASSOCIATED LOW VOLTAGE CONTROL DEVICES SHALL BE PROVIDED BY THE OWNER. THE CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL THE NECESSARY CONDUIT, BOXES, ETC. FOR THE INSTALLATION OF THE THERMOSTATS AND LOW VOLTAGE CONTROL DEVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND CONNECTION OF THE THERMOSTATS AND LOW VOLTAGE CONTROL DEVICES TO THE MECHANICAL PLANS FOR THERMOSTAT LOCATIONS.
13. PROVIDE ALL RACEWAYS, SLEEVES, BOXES, TO CABLE TRAY AS INDICATED FOR THE OWNER PROVIDED DATA, PHONE, TV, DATA SYSTEM, COINTEGRATE EXACT REQUIREMENTS. THE OWNER AND OWNER CABLEING CONTRACTOR. EXISTING CABLE AND CABLE CONDUITS ARE TO BE REMOVED.
14. REMOVE ALL UNUSED CONDUIT, CONDUCTORS, PULL BOXES, ETC. FOR DEMOLISHED ITEMS. TURN OFF BREAKERS AND LABEL AS "SPARE" IN THE PANELBOARD DIRECTORY.
15. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL DEMOLISHED MATERIAL AND EQUIPMENT TO BE STORED ITEMS ON SITE AS DIRECTED BY OWNER SPECIFICALLY FOR POE CLOCKS NOT TO BE REMOVED.
16. WHERE DEMOLISHED ELECTRICAL DEVICES ARE PART OF A CIRCUIT THAT IS THRU-WIRED OR HAS ADDITIONAL DEVICES ON THAT CIRCUIT THAT ARE NOT TO BE REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE EXISTING CIRCUIT. ANY ADDITIONAL CONDUIT, CONDUCTORS, ETC. SHALL BE PROVIDED BY THE CONTRACTOR. CIRCUIT TO MAINTAIN THE INTEGRITY ARE THE REMOVED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BASE BID.
17. EXISTING CONDITIONS ON THIS SET OF BID DOCUMENTS WERE TAKEN FROM EXISTING DRAWINGS, LIMITED SITE VISITS, AND VISUAL OBSERVATION. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CHANGE ORDERS WILL NOT BE ISSUED FOR UNANTICIPATED CONDITIONS TO MEET INTENT OF WORK.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING, PATCHING, AND FINISHES OF ALL DEVICES AND DEVICES TO BE REMOVED DUE TO CONSTRUCTION WORK. MAINTAIN ALL FIRE RATINGS.
19. REMOVE ALL UNUSED CONDUIT AND WIRING LOCATED WITHIN WALLS TO BE DEMOLISHED.
20. ALL FIRE ALARM WORK SHALL BE DONE FROM CURRENT SYSTEM VENDOR. THE GROUNDING SHALL BE THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WALL ROUGH-IN REQUIRED.
21. LIGHTING CONTROLS BY WATTSOPPER, LUTRON, AND LEVITON.
22. PROVIDE CONDUCTORS FOR LISTED APPLICATIONS AS FOLLOWS:
LIGHTING AND RECEPTACLE CIRCUITS: TYPE THHN, 400 VOLT, 75 DEGREE C (194 DEGREES F) THERMOPLASTIC INSULATED BUILDING CONDUCTOR
23. ALL WIRING SHALL BE CONDUCTED IN ALL FINISHED SPACES. ALL WIRING SHALL BE IN CONCORDANCE WITH THE OWNER NOTED. FLEXIBLE CONDUIT SHALL BE ACCEPTABLE FOR CONNECTIONS TO LIGHT FIXTURES AND WHERE NEW DEVICES ARE INSTALLED IN EXISTING WALLS.
24. ALL RECEPTACLES SHALL BE 18" AFF UNLESS NOTED OTHERWISE.
25. DUPLEX RECEPTACLES SHALL BE HUBBELL MODEL 5552 20A, 125 DEGREE C CONFIGURATION 15 AMP 250 VOLT RECEPTACLE WITH STAINLESS STEEL OVERPLATE TO MATCH EXISTING.
26. CONTRACTOR SHALL PROVIDE MODIFIED CIRCUIT DIRECTORY FOR ANY CHANGES WITH REVISIONS AS NOTED ON PLANS.
27. CONTRACTOR RESPONSIBLE FOR ALL PATCH AND REPAIR OF EXISTING SURFACES. PROVIDE ALL PATCH AND REPAIR OF NEW DEVICES. REMOVE AND REPLACE DEVICES ON EXISTING WALLS FOR NEW FINISHES. PROVIDE EXTENSION RINGS WHERE REQUIRED.
28. WHERE A RECEPTACLE AND DATA AND/OR PHONE DEVICES ARE INSTALLED IN THE SAME LOCATION, THE CONTRACTOR SHALL PROVIDE SUCH THAT DISTANCE BETWEEN DOES NOT EXCEED 6".
29. CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT, ACCESSORIES, AND MATERIAL FURNISHED UNDER THIS CONTRACT FOR A PERIOD OF 12 MONTHS FROM THE DATE OF COMPLETION.
30. OWNER SHALL REMOVE ANY DATA CABLES AND JACKS NOTED TO BE DEMOLISHED AND REINSTALL IN NEW LOCATIONS AS REQUIRED. COORDINATE WITH OWNER AND DO NOT DISTURB OR REMOVE ANY COILED CABLES.



SD SET	7/21/2021
DD SET	8/13/2021
FINAL SET	8/24/2021

ROKE-THOMAS + ASSOCIATES, INC.
ARCHITECTS • PLANNERS • MANAGERS • CONTRACTORS
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OFFICE RENOVATIONS
IN THE
NORMAN K. MYERS TECHNICAL EDUCATION BUILDING
OZARK'S TECHNICAL COMMUNITY COLLEGE

1001 EAST CHESTNUT EXPRESSWAY
SPRINGFIELD, MO 65802

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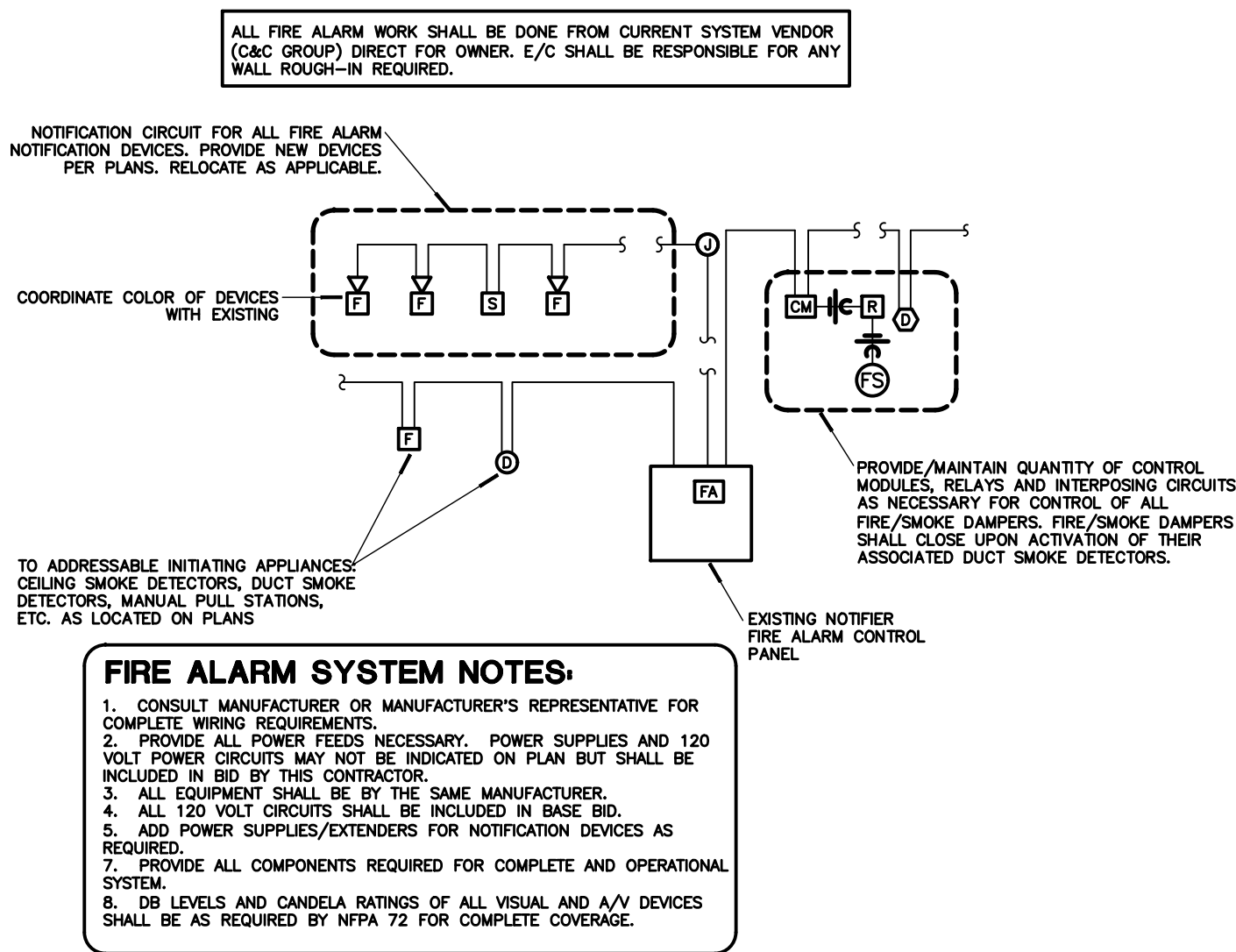
DATE
AUGUST 24, 2021

COMM. NO.
21-115

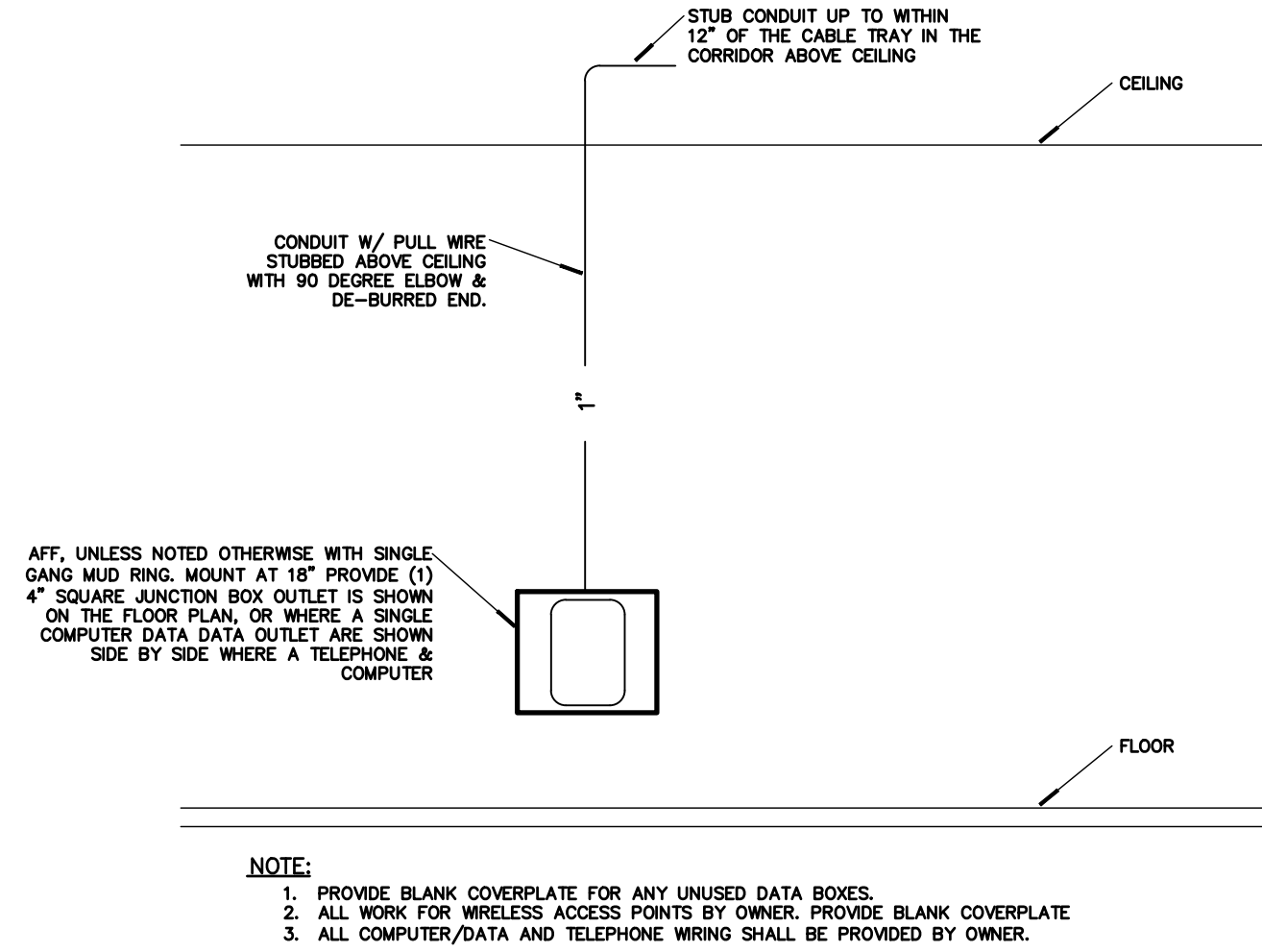
SHEET NO.

E1





5
E2 **FIRE ALARM SYSTEM SCHEMATIC RISER**
NO SCALE



4
E2 **TELE/DATA ROUGH-IN DIAGRAM**
NO SCALE

