



**CHATHAM AREA TRANSIT AUTHORITY  
REQUEST FOR PROPOSALS**

**PROJECT NO. 2026-07**

**CAT ITC INTERIOR RENOVATION**

**April 3, 2026**

**PUBLIC NOTICE  
CHATHAM AREA TRANSIT AUTHORITY**

Request for Proposals No. 2026-07  
**CAT ITC INTERIOR RENOVATION**

Notice is hereby given that the CHATHAM AREA TRANSIT AUTHORITY (CAT) is seeking responses for the following:

- Description:** Chatham Area Transit Authority (CAT) is soliciting responses from qualified vendors to complete interior renovations on CAT ITC.
- Proposals:** Proposal Packages are available at 900 E. Gwinnett Street, Savannah, Georgia, 31401, online at <https://www.catchacat.org/about-cat/doing-business/procurement/procurement-opportunities/>, or by email at [victor.colon@catchacat.org](mailto:victor.colon@catchacat.org).
- Questions:** All questions must be submitted in writing by: **Friday, June 19, 2026** to Victor Colon, Procurement Manager, Chatham Area Transit Authority, 900 East Gwinnett Street, Savannah, GA 31401, or by email at [victor.colon@catchacat.org](mailto:victor.colon@catchacat.org)
- Submittal Deadline:** **Friday, July 17, 2026 at 2 p.m. EST**, CAT Central, 900 E. Gwinnett Street, Savannah, Georgia, 31401

**Disadvantaged Business Enterprise (DBE) Requirements:**

CAT, in accordance with 49 Code of Federal Regulations (CFR) Part 26, has an obligation to ensure nondiscrimination of DBE's in all aspects of competition, award and administration of federally funded contracts. Notice to all proposers is hereby provided, that in accordance with State and Federal laws, CAT will ensure that disadvantaged business enterprises are afforded full opportunity to submit offers and responses to this solicitation, and to participate in any contract consummated pursuant to this advertisement. Compliance with Federal and State laws on Equal Opportunity will also be asserted in consideration for the award of this contract. No proposer will be discriminated against because of age, sex, race, color, religion, national origin, or handicapping conditions.

CAT reserves the right to accept or reject any and all responses submitted. CAT also reserves the right to award a contract based on the submissions alone.

## 2026-07 Schedule of Events

| <b><u>EVENT</u></b>                                            | <b><u>DATE</u></b>           |
|----------------------------------------------------------------|------------------------------|
| RFPIssued and Advertised                                       | April 3, 2026                |
| PRE Bid Meeting                                                | May 8, 2026                  |
| Vendor Inquiry Deadline                                        | June 19, 2026                |
| RFP Submission Deadline                                        | July 17, 2026, 2:00 p.m. EST |
| Evaluation Committee's Recommendation<br>To Board of Directors | August 25, 2026              |
| Notification of Award to Proposer                              | August 26, 2026              |

**Chatham Area Transit Authority  
RFP 2026-07 CAT ITC INTERIOR RENOVATION**

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# CHATHAM AREA TRANSIT AUTHORITY REQUEST FOR PROPOSALS

## 1.1 INTRODUCTION

Chatham Area Transit Authority (CAT) is soliciting proposals from qualified professionals to provide interior renovation. CAT anticipates awarding a eighteen (18) months contract to the selected vendor(s).

## 1.2 RESPONSE SUBMISSION

CAT will receive responses until **2 pm EST, Friday, July 17, 2026**. Any response delivered to CAT after the time specified will not be considered.

One (1) unbound original, three (3) copies, and an electronic copy of the response must be mailed or hand delivered to:

Victor Colon, Procurement Manager  
Chatham Area Transit Authority  
900 E. Gwinnett St.  
Savannah, GA 31401  
(912) 651-0453

If there are inconsistencies in the copies provided, the controlling document will be the original response submitted by proposer.

## 1.3 RESPONSE FORM REQUIREMENTS

All responses must state the full and correct name, address, and capacity of the proposer. If the proposer is an individual doing business under another name, the response shall so state. Partnerships, joint ventures, and corporations shall sign as is appropriate for their type of business. Any erasures, corrections, or other changes appearing on the response forms must be initialed by the persons signing the response.

**Except as otherwise provided herein, CAT cannot accept any material marked confidential, trade secret or proprietary.** Proposer understands that any material pertaining to this procurement is likely subject to disclosure through the Georgia Open Records Act, O.C.G.A. § 50-18-70.

## 1.4 INQUIRIES

Should a proposer have questions, please contact in writing:

Victor Colon, Procurement Manager  
Chatham Area Transit Authority  
900 E. Gwinnett St.  
Savannah, GA 31401  
(912) 651-0453  
[victor.colon@catchacat.org](mailto:victor.colon@catchacat.org)

Questions should be submitted to CAT by **Friday, June 19, 2026**. Communication via email will be considered a written inquiry. ANY VERBAL COMMUNICATION WILL NOT BE CONSIDERED BY CAT AS AN INQUIRY. All received inquiries will be responded to in writing after the question submission deadline and will be presented as an addendum to the solicitation and distributed to respondents.

### **1.5 ETHICS AND LOBBYING STATEMENT**

CAT maintains a written code of ethics that governs the conduct of its employees and subcontractors. Any debarment and suspension pertaining to the proposer must be disclosed by attaching a copy of each to the response. Additionally, the successful proposer must complete the appropriate certifications relating to lobbying activities.

### **1.6 INDEMNIFICATION**

(1) Contractor shall indemnify, defend, and hold harmless CAT and its officers, directors, and employees from and against all allegations, claims, actions, suits, demands, damages, liabilities, obligations, losses, settlements, judgments, costs and expenses (including without limitation attorneys' fees and costs) which arise out of, relate to, or result from any act or omission of Contractor.

(2) Contractor acknowledges that it is prohibited under the Laws of Georgia for a governmental entity to indemnify Contractor for any loss arising out of the provisions of this Contract. Accordingly, CAT does not make any indemnification to Contractor whatsoever under this Contract.

### **1.7 INTEREST OF MEMBERS OF, OR DELEGATES TO, CONGRESS**

In accordance with 18 U.S.C. Subsection 431, no member of, or delegates to, the Congress of the United States shall be permitted to a share or part of this contract or to any benefit arising there from.

### **1.8 ETHICS**

It is CAT's policy that all contractors shall be expected to have complied, and in the future to comply, with all ethics laws of the State of Georgia and to be free of conflicts of interest (as described in the following section) if awarded a CAT contract. Each proposer shall be deemed have acknowledged said policy. Any indication that a proposer has violated or given the appearance of violating an ethics law or is not free of actual or potential conflicts of interest will cause rejection of that bid. Any indication that, once awarded a contract, a contractor has violated or has given the appearance of violating an ethics law or is not free of actual or potential conflicts of interest may, in the sole discretion of CAT, constitutes grounds for termination of the contract.

### **1.9 CONFLICT OF INTEREST**

No Board Member, employee, officer or agent, or employee of such agent of CAT shall participate in the selection, the award of, or the administration of a contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

- a. A Board Member, employee, officer or agent, or employee of such agent;

- b. Any immediate family member of those listed in (a) above;
  - c. A partner; or an organization which employs, or is about to employ any of the above,
- has a direct or indirect, present or future financial or other interest in the firm selected for award.

CAT Board Members, officer, employees or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential subcontractors or parties of sub-agreements.

#### **1.10 PRIVACY ACT REQUIREMENTS**

The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

- a. The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understand that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.
- b. The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

#### **1.11 EXCLUSIONARY OR DISCRIMINATORY SPECIFICATIONS**

Apart from inconsistent requirements imposed by federal statute or regulations, CAT will comply with the requirements of 49 U.S.C. § 5323(h) (2) by refraining from using any Federal assistance awarded by FTA to support procurements using exclusionary or discriminatory specifications.

#### **1.12 GEOGRAPHIC RESTRICTIONS**

Except as expressly mandated, encouraged, or permitted by FTA or Federal Statute, CAT will refrain from using state or local geographic preferences.

#### **1.13 CONTRACTOR ASSURANCE**

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to: (1) Withholding monthly progress payments; (2) Assessing sanctions; (3) Liquidated damages; and/or (4) Disqualifying the contractor from future bidding as non-responsible

#### **1.14 CONFIDENTIALITY**

Contractor agrees that any and all information, in oral or written form, whether obtained from CAT, its agents or assigns, or other sources, or generated by Contractor pursuant to this contract shall not be used for any purpose other than fulfilling the requirements of this contract.

Contractor further agrees to keep in absolute confidence all data relative to the business of CAT, its agents or assigns. No news release, including but not limited to photographs and film, public announcement, denial or confirmation of any part of the subject matter of any phase of any program hereunder shall be made by Contractor without written approval of CAT.

#### **1.15 GOVERNMENT WIDE DEBARMENT AND SUSPENSION**

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the contractor is required to verify that none of the contractors, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945. If this contract is less than \$25,000 this clause does not apply.

The contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into. By signing and submitting its bid or response, the bidder or proposer certifies as follows:

The certification clause contained in Attachment B is a material representation of fact relied upon by Chatham Area Transit Authority. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to Chatham Area Transit Authority, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

#### **1.16 SUBCONTRACTS**

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the FTA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the clauses contained in 29 CFR 5.5.

#### **1.17 CONTRACT TERMINATION: DEBARMENT**

A breach of the contract clauses in 29 CFR Section 5.5 may be grounds for termination on contract, and for Debarment as a contractor and a subcontractor as provided in 29 CFR Section 5.12.

#### **1.18 STATE AND LOCAL LAW DISCLAIMER**

The use of many of the Clauses herein are not governed by federal law, many of the clauses contained herein contain FTA suggested language in certain instances these clauses may be affected by State Law.

- a. If contractor is to physically perform services on CAT's premises, contractor will be required to affirmatively represent it's use of the federal work authorization program commonly known as E-Verify as required by O.C.G.A. §13-10-91(b)(1).

## **1.19 SUBMITTAL OF PROTESTS**

### **a. Pre-Award Protests**

Protests concerning these instructions, contract requirements, or the RFP procedures must be submitted in writing to the Procurement Manager not less than five (5) days before the scheduled receipt of responses. The protest must:

- 1) The name and address of the protestor.
- 2) The name and number of the procurement solicitation.
- 3) A detailed statement of the grounds for the protest, including all relevant facts and a citation to the Federal or State law, the provision of CAT procurement procedures, or specific term of the solicitation alleged to have been violated.
- 4) Any relevant supporting documentation the protesting party desires CAT to consider in making its decision.
- 5) The desired relief, action, or ruling sought by the protestor.

### **b. Post-Award Protests**

Protests concerning the award of this response must be submitted in writing to the Procurement Manager within no later than 72 hours after the protestor's receipt of CAT's written notice of its decision or intended decision to award a contract. CAT will have ten (10) working days after receipt of the formal protest package to evaluate, and issue a response, except in cases where the original response has been awarded by the Board of Directors. In such cases, the resolution of protest will be handled at the next regularly scheduled Board meeting, following completion of the staff review of the protest. The protest must:

- 1) The name and address of the protestor.
- 2) The name and number of the procurement solicitation.
- 3) A detailed statement of the grounds for the protest, including all relevant facts and a citation to the Federal or State law, the provision of CAT procurement procedures, or specific term of the solicitation alleged to have been violated.
- 4) Any relevant supporting documentation the protesting party desires CAT to consider in making its decision.
- 5) The desired relief, action, or ruling sought by the protestor.

## **1.20 RESPONSE OFFER**

Each response must be in CAT's possession by the deadline for submission noted above. It is the proposer's responsibility to ensure timely receipt by CAT of the response. The submitted response shall irrevocable offer for ninety (90) days from the solicitation due date.

## **1.21 RESPONSE AWARD**

CAT reserves the right to reject any and all responses, and part or parts of a response, waive any -technicalities, and award any or the entire contract in a manner that is in the best interest of CAT. Contracts will be awarded to the highest ranked proposer when it is in the best interest of CAT.

#### **1.22 RESPONSE WITHDRAWAL**

Responses may be withdrawn by submitting a written request to CAT before the time fixed for response opening. Withdrawal of an offer will not prejudice the right of the proposer to submit a new response, provided that the latter is timely received as provided above.

#### **1.23 SINGLE RESPONSE SITUATIONS**

In the event a single response is received, CAT will conduct a price analysis or a cost analysis of the response. The sole proposer must cooperate with CAT if a price or cost analysis is conducted.

#### **1.24 CERTIFICATIONS & DBE POLICY STATEMENT**

CAT reserves the right to accept or reject any and all responses submitted. CAT also reserves the right to award a contract based on the submissions alone. The proposer, by signing the response forms, certifies that the response is offered by a business that is fully licensed to do the work relating to the specifications herein.

CAT, in accordance with 49 Code of Federal Regulations (CFR) Part 26, has an obligation to ensure nondiscrimination of DBE's in all aspects of competition, award and administration of federally funded contracts. Notice to all proposers is hereby provided, that in accordance with State and Federal laws, CAT will ensure that disadvantaged business enterprises are afforded full opportunity to submit offers and responses to this solicitation, and to participate in any contract consummated pursuant to this advertisement. Compliance with Federal and State laws on Equal Opportunity will also be asserted in consideration for the award of this contract. No proposer will be discriminated against because of age, sex, race, color, religion, national origin, or handicapping conditions.

**CAT encourages the utilization of minority owned financial institutions, a list is provided below:**

- Carver State Bank (Savannah);
- Citizens Trust Bank (Atlanta);
- Metro City Bank (Doraville);
- Quantum National Bank (Suwanee).

#### **1.25 TAXES**

CAT is exempt from payment of federal excise and transportation tax and Georgia Sales and Use taxes. These taxes are not to be included in the response price. Tax exemption information, upon request, will be provided to the successful proposer upon award of the contract.

## **1.26 CONTRACT TERMINATION**

CAT may terminate this solicitation and any corresponding contract, in whole or in part, at any time by written notice to the Contractor when it is in CAT's best interest.

## **1.27 ASSIGNMENTS**

The proposer shall not assign this contract, wholly or in part, without the prior written consent of CAT. No assignment shall relieve the contractor of any obligations under the contract.

## **1.28 ADDENDA**

Any changes in these instructions or other requirements will be accomplished by a written addendum sent to all prospective proposers. All such addenda shall become a part of the contract. Failure to acknowledge receipt of all addenda may cause the response to be considered non-responsive, and therefore rejected.

## **1.29 PROHIBITED INTERESTS**

No member, officer, or employee of CAT and/or member of, delegate to, the Congress of the United States shall, during his/her tenure, or for one year thereafter, have either a direct or an indirect interest in this contract or the proceeds thereof.

## **1.30 AUDIT & INSPECTION**

The proposer agrees to allow CAT, the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination:

- 1.31.1 Inspect all work, materials, payrolls, and other data/records associated with the project; and
- 1.31.2 Audit the books, records, and accounts associated with the project.
- 1.31.3 In addition, the contractor must also agree to maintain all required records for a minimum of three (3) years after CAT makes final payments and all other pending matters are closed.

## **1.31 NOTICE TO PROCEED**

The successful proposer shall not commence work under this ~~Choose an item.~~ until a written contract is awarded, proof of insurance has been received, and a Notice to Proceed is issued. If the successful proposer does commence any work or deliver items prior to receiving official notification, the proposer does so at its own risk.

## **1.32 SCOPE OF SERVICES**

The proposer shall provide a solution to the scope of the request described in detail in Attachment A – Scope of Services.

In the case of goods, equipment, or services identified by a “brand name or equal” description, no preference will be given to responses offering to furnish the name brands over those offering accepted equal value and quality, and vice versa. Wherever in the specifications the name of a certain brand, make, manufacturer, or definite specification is utilized, these specifications are used only to denote the quality standard of product, style type, and character of product desired and do not restrict proposers to the specific brand, make, manufacturer or specification named.

Equivalent products, which have been designated "approved equals" by CAT or its agents, shall be acceptable. Proposer must submit to CAT a written request for approval of all equivalent products by the inquiry deadline.

### **1.33 EVALUATION OF RESPONSES**

Responses received that are determined to be responsive and responsible will be evaluated by members of a CAT Evaluation Committee in accordance with the criteria set forth below. The criteria are weighted by their relative degree of importance.

#### **Evaluation Criteria:**

|                                        |            |
|----------------------------------------|------------|
| <b>Qualifications &amp; Experience</b> | <b>30%</b> |
| <b>Project Approach &amp; Schedule</b> | <b>30%</b> |
| <b>Cost</b>                            | <b>20%</b> |
| <b>References</b>                      | <b>15%</b> |

*For any DBE subcontractor use, please provide a summary of the percentage of use that you are committing to the DBE contractor in your price proposal*

### **1.34 FEDERAL REGULATORY REQUIREMENTS**

Federal Regulatory Requirements applicable to this request are listed in Attachment G. Proposer must sign the individual clauses that require separate signatures as well as sign the certification at the beginning of Attachment G. Proposer must return these signed federal clauses with its response.

### **1.35 ADDITIONAL RESPONSE REQUIREMENTS**

Any response delivered to CAT that does not contain the following documents and/or information will be considered an unresponsive submission.

- 1.35.1 Most recent three (3) years comprehensive financial statements, audited version if your business structure requires such. These documents may be marked as "Trade Secret – Confidential Financial Data", but must be accompanied by an attached affidavit affirmatively declaring that the specific information in the records constitute trade secrets pursuant to Article 2 of Chapter 1 of Title 10, Official Code of Georgia.
- 1.35.2 Statement regarding the staffing availability of your business to handle the scope of services in this solicitation.
- 1.35.3 Evidence of current Commercial General/Professional Liability insurance providing insurance for bodily injury, property damage, personal injury and advertising injury, with limits of not less than \$1,000,000.
- 1.35.4 Complete, sign, and return the pertinent portions of Attachments B – G.

**Attachment A**

**SCOPE OF SERVICES FOR BATHROOM RENOVATIONS BELOW, FLOORPLAN  
FOR THE OTHER PORTIONS OF THE BUILDING RENOVATION FOLLOWS.**

**BELOW IS TO REMODEL PUBLIC AND OFFICE BATHROOMS**

|                                                                                   |                 |
|-----------------------------------------------------------------------------------|-----------------|
| <b>Plans and Permits</b>                                                          | <b>\$</b> _____ |
| <b>Demolition</b>                                                                 | <b>\$</b> _____ |
| <b>Wall and Floor Preparation</b>                                                 | <b>\$</b> _____ |
| <b>Installation of Tile</b>                                                       | <b>\$</b> _____ |
| <b>Installation of Resin Floor Coating</b>                                        | <b>\$</b> _____ |
| <b>Installation of Toilets, Sinks, and Related Plumbing Fixtures and Hardware</b> | <b>\$</b> _____ |
| <b>Interior &amp; Door Painting</b>                                               | <b>\$</b> _____ |
| <b>Installation of Partitions</b>                                                 | <b>\$</b> _____ |
| <b>Electrical</b>                                                                 | <b>\$</b> _____ |
| <b>Portable Fencing</b>                                                           | <b>\$</b> _____ |
| <b>Portable Toilet Rental</b>                                                     | <b>\$</b> _____ |
| <b>Supervision Labor</b>                                                          | <b>\$</b> _____ |
| <b>Overhead &amp; Administration</b>                                              | <b>\$</b> _____ |
| <b>Misc. (provide detail)</b>                                                     | <b>\$</b> _____ |
| <b>Profit</b>                                                                     | <b>\$</b> _____ |
| <b>Total Bathroom Bid Price</b>                                                   | <b>\$</b> _____ |

**INTERIOR BUILDING RENOVATION ON NEXT PAGES INCLUDING FLOORPLANS AFTER  
CAT AND FEDERAL CERTIFICATIONS**

**Attachment B**  
**DBE, Non-Debarment, and EPA Certification**

The firm submitting this response \_\_\_\_\_ IS or \_\_\_\_\_ IS NOT a Disadvantaged Business Enterprise.

The firm submitting this response \_\_\_\_\_ DOES or \_\_\_\_\_ DOES NOT use Disadvantaged Business Enterprise subcontractors.

***For any DBE subcontractor use, please provide a summary of the percentage of use that you are committing to the DBE subcontractor in your price proposal.***

All offerors must certify that they are not on the Comptroller General's list or any DOT List of Ineligible Proposers, List of Persons or Firms Currently Debarred for Violations of Various Contracts Incorporating Labor Standards Provisions, or that the facilities to be utilized in the performance of this project have not been listed on the Environmental Protection Agency's List of Violating Facilities. By signing the Certification Form, this certification is completed.

The signature below attests that the offeror's response is made with full understanding and acceptance of the provisions contained in this response.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Witness Signature

Print or Type:

\_\_\_\_\_  
***Name & Title of Signing Officer***

\_\_\_\_\_  
***Company***

\_\_\_\_\_  
***Mailing Address***

\_\_\_\_\_  
***Date***

\_\_\_\_\_  
***City, State, Zip***

\_\_\_\_\_  
***Telephone***

\_\_\_\_\_  
***E-Mail Address***

## Attachment C References

CAT may contact references in an effort to obtain more information about the proposer. The references listed should be companies and individuals with whom the proposer has supplied equipment and/or performed services similar to those specified herein.

1.           Company Name: \_\_\_\_\_  
  
              Contact Name: \_\_\_\_\_  
  
              Phone Number: \_\_\_\_\_  
  
              Description of Work: \_\_\_\_\_

---

2.           Company Name: \_\_\_\_\_  
  
              Contact Name: \_\_\_\_\_  
  
              Phone Number: \_\_\_\_\_  
  
              Description of Work: \_\_\_\_\_

---

3.           Company Name: \_\_\_\_\_  
  
              Contact Name: \_\_\_\_\_  
  
              Phone Number: \_\_\_\_\_  
  
              Description of Work: \_\_\_\_\_

**Attachment D**  
**Addendum Acknowledgment**

The undersigned acknowledges receipt of the following addenda to the response documents.

***NO ADDENDA WERE RECEIVED*** \_\_\_\_\_

(Give number and date of each):

Addendum No.   1   Dated \_\_\_\_\_

Addendum No.   2   Dated \_\_\_\_\_

Addendum No.   3   Dated \_\_\_\_\_

Addendum No.   4   Dated \_\_\_\_\_

Addendum No.   5   Dated \_\_\_\_\_

Failure to acknowledge receipt of all addenda may cause the response to be considered non-responsive.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**Attachment E**  
**OFFEROR'S CHECKLIST**  
(To verify that all necessary documents are included)

This form **must be completed** and returned with the response. Failure to return the completed form may be cause for considering your response non-responsive.

*Responses must be clearly marked with the response number and title, date and time of response opening, and company name. Below is a list of all materials and responses required for this response.*

|                                             | Proposer<br><u>Check off</u> | CAT<br><u>Check off</u> |
|---------------------------------------------|------------------------------|-------------------------|
| Proposer Contact Information                | _____                        | _____                   |
| Financial Statement/Tax Return              | _____                        | _____                   |
| Evidence of Gen. Liability Insurance        | _____                        | _____                   |
| Attachment B – DBE Certification Form       | _____                        | _____                   |
| Attachment C – Proposer's References        | _____                        | _____                   |
| Attachment D – Addendum Acknowledgment      | _____                        | _____                   |
| Attachment E – Offeror's Checklist          | _____                        | _____                   |
| Attachment F – Proposer Information Form    | _____                        | _____                   |
| Attachment G – Federal Clause Certification | _____                        | _____                   |
| Buy America/Build America Certification     | _____                        | _____                   |
| Lobbying Certification                      | _____                        | _____                   |

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**Attachment F**  
**PROPOSER INFORMATION FORM**

**All offerors are required to submit this information as a condition of submitting an offer to CAT. Offerors must insure that ALL sub-contractors at all tiers, which are proposed to be used under any agreement issued by CAT, have also submitted an executed copy of this form. CAT is required to maintain this information by the Federal Transit Administration and it is not subject to waiver.**

Firm Name \_\_\_\_\_

Firm Address \_\_\_\_\_  
\_\_\_\_\_

Telephone Number \_\_\_\_\_

Fax Number \_\_\_\_\_

DUNS Number \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Firm's status as Disadvantaged Business Enterprise  
(DBE) or Non- DBE \_\_\_\_\_

Ethnicity of DBE Principle: \_\_\_\_\_

Gender of DBE Principle: \_\_\_\_\_

Year Firm Founded \_\_\_\_\_

Annual gross receipts of the firm:

\_\_\_ < \$500K; \_\_\_ \$500K - \$1 million; \_\_\_ \$1-2 million; \_\_\_ \$2-5 million; \_\_\_ > \$5 million

Prime or Sub-Contractor \_\_\_\_\_

NAICS code(s) \_\_\_\_\_

I certify to the best of my knowledge that the above information is true and correct:

Signature: \_\_\_\_\_

Name & Title: \_\_\_\_\_

Date: \_\_\_\_\_

CAT Project No.: \_\_\_\_\_

**FAILURE TO PROVIDE A COMPLETED COPY OF THIS FORM AS STIPULATED  
HEREIN MAY PRECLUDE YOUR OFFER FROM CONSIDERATION FOR AWARD.**

**Attachment G**  
**Federal Regulatory Requirements**

**CONTRACTOR MUST REVIEW THESE REQUIREMENTS, SIGN THE  
CERTIFICATION & APPLICABLE FEDERAL REGULATIONS, AND SUBMIT THIS  
SECTION AS PART OF THE RESPONSE.**

**FEDERAL CLAUSE CERTIFICATION**

I have read and understand the federal clauses that are applicable to this solicitation and I am duly authorized to execute this Certification on behalf of the entity submitting this response.

\_\_\_\_\_  
Proposer Name

By Its: \_\_\_\_\_  
Title

\_\_\_\_\_  
Sign Name

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

State of \_\_\_\_\_  
County of \_\_\_\_\_

Signed and sworn to before me on \_\_\_\_\_, 20\_\_\_\_  
by \_\_\_\_\_ the \_\_\_\_\_ of Contractor and  
duly authorized to execute this instrument on Contractor's behalf.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
My Commission Expires

## ACCESS TO RECORDS AND REPORTS

1. Record Retention. The Contractor will retain, and will require its subcontractors of all tiers to retain, complete and readily accessible records related in whole or in part to the contract, including, but not limited to, data, documents, reports, statistics, leases, subcontracts, arrangements, other third party Contracts of any type, and supporting materials related to those records.
2. Retention Period. The Contractor agrees to comply with the record retention requirements in accordance with 2 C.F.R. § 200.334. The Contractor shall maintain all books, records, accounts and reports required under this Contract for a period of at not less than three (3) years after the date of termination or expiration of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case records shall be maintained until the disposition of all such litigation, appeals, claims or exceptions related thereto.
3. Access to Records. The Contractor agrees to provide sufficient access to FTA and its contractors to inspect and audit records and information, including such records and information the contractor or its subcontractors may regard as confidential or proprietary, related to performance of this contract in accordance with 2 CFR § 200.337.
4. Access to the Sites of Performance. The Contractor agrees to permit FTA and its contractors access to the sites of performance under this contract in accordance with 2 CFR § 200.337.

## AMERICANS WITH DISABILITIES ACT(ADA)

The contractor agrees to comply with all applicable requirements of section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of handicaps, with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq., which requires that accessible facilities and services be made available to persons with disabilities, including any subsequent amendments to that Act, and with the Architectural Barriers act of 1968, as amended, 42 U.S.C. §§ 4151 et seq., which requires that buildings and public accommodations be accessible to persons with disabilities, including any subsequent amendments to that Act. In addition, the contractor agrees to comply with any and all applicable requirements issued by the FTA, DOT, DOJ, U.S. GSA, U.S. EEOC, U.S. FCC, any subsequent amendments thereto and any other nondiscrimination statute(s) that may apply to the Project.

## BUY AMERICA REQUIREMENTS

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. part 661 and 2 CFR § 200.322 Domestic preferences for procurements, which provide that Federal funds may not be obligated unless all steel, iron, and manufactured products used in FTA funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7.

Build America, Buy America Act. Construction materials used in the Project are subject to the domestic preference requirement of the Build America, Buy America Act, Pub. L. 117-58, div. G, tit. IX, §§ 70911 – 70927 (2021), as implemented by the U.S. Office of Management and Budget's "Buy America Preferences for Infrastructure Projects," 2 CFR Part 184. The Recipient acknowledges that this agreement is neither a waiver of § 70914(a) nor a finding under § 70914(b). In accordance with 2 CFR § 184.2(a), the Recipient shall apply the standards of 49 CFR Part 661 to iron, steel, and manufactured products.

Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C), 49 U.S.C. § 5323(u) and 49 C.F.R. § 661.11. Domestic preferences for procurements

The bidder or offeror must submit to the Agency the appropriate Buy America certification. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as nonresponsive. For more information please see the FTA's Buy America webpage at: <https://www.transit.dot.gov/buyamerica>

## BOND REQUIREMENTS

The Federal agency or pass-through entity may accept the recipient's or subrecipient's bonding policy and requirements for construction or facility improvement contracts or subcontracts exceeding the simplified acquisition threshold. Before doing so, the agency or pass-through entity must determine that the Federal interest is adequately protected. If such a determination has not been made, the minimum requirements must be as follows:

- (a) A bid guarantee from each bidder equivalent to five percent of the bid price. The bid guarantee must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute any required contractual documents within the specified timeframe.
- (b) A performance bond on the contractor's part for 100 percent of the contract price. A performance bond is a bond executed in connection with a contract to secure the fulfillment of all the contractor's requirements under a contract.
- (c) A payment bond on the contractor's part for 100 percent of the contract price. A payment bond is a bond executed in connection with a contract to assure payment as required by the law of all persons supplying labor and material in the execution of the work provided for under a contract.

It is also understood and agreed that if the bidder should withdraw any part or all of their bid within [90] days after the bid opening without the written consent of the Agency, or refuse or be unable to enter into this Contract as provided above, or refuse or be unable to furnish adequate and acceptable Performance and Payment Bonds, or refuse or be unable to furnish adequate and acceptable insurance, as provided above, it shall

forfeit its bid guaranty to the extent Agency's damages occasioned by such withdrawal, or refusal, or inability to enter into a Contract, or provide adequate security thereof.

It is further understood and agreed that to the extent the defaulting bidder's bid guaranty shall prove inadequate to fully recompense Agency for the damages occasioned by default, then the bidder agrees to indemnify Agency and pay over to Agency the difference between the bid guarantee and Agency's total damages so as to make Agency whole.

The bidder understands that any material alteration of any of the above or any of the material contained herein, other than that requested will render the bid unresponsive.

**Performance Guarantee.** A Performance Guarantee in the amount of 100% of the Contract value is required by the Agency to ensure faithful performance of the Contract. Either a Performance Bond or an Irrevocable Stand-By Letter of Credit shall be provided by the Contractor and shall remain in full force for the term of the Contract. The successful Bidder shall certify that it will provide the requisite Performance Guarantee to the Agency within ten (10) business days from Contract execution. The Agency requires all Performance Bonds to be provided by a fully qualified surety company acceptable to the Agency and listed as a company currently authorized under 31 C.F.R. part 22 as possessing a Certificate of Authority as described hereunder. Agency may require additional performance bond protection when the contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The Agency may secure additional protection by directing the Contractor to increase the amount of the existing bond or to obtain an additional bond.

If the Bidder chooses to provide a Letter of Credit as its Performance Guarantee, the Bidder shall furnish with its bid, certification that an Irrevocable Stand-By Letter of Credit will be furnished should the Bidder become the successful Contractor. The Bidder shall also provide a statement from the banking institution certifying that an Irrevocable Stand-By Letter of Credit for the action will be provided if the Contract is awarded to the Bidder. The Irrevocable Stand-By Letter of Credit will only be accepted by the Agency if:

1. A bank in good standing issues it. The Agency will not accept a Letter of Credit from an entity other than a bank.
2. It is in writing and signed by the issuing bank.
3. It conspicuously states that it is an irrevocable, non-transferable, "standby" Letter of Credit.
4. The Agency is identified as the Beneficiary.
5. It is in an amount equal to 100% of the Contract value. This amount must be in U.S. dollars.
6. The effective date of the Letter of Credit is the same as the effective date of the Contract
7. The expiration date of the Letter of Credit coincides with the term of the contract.
8. It indicates that it is being issued in order to support the obligation of the Contractor to perform under the Contract. It must specifically reference the Contract between the Agency and the Contractor the work stipulated herein.

The issuing bank's obligation to pay will arise upon the presentation of the original Letter of Credit and a certificate and draft to the issuing bank's representative at a location and time to be determined by the parties. This documentation will indicate that the Contractor is in default under the Contract.

**Payment Bonds.** A Labor and Materials Payment Bond equal to the full value of the contract must be furnished by the contractor to Agency as security for payment by the Contractor and subcontractors for labor, materials, and rental of equipment. The bond may be issued by a fully qualified surety company acceptable to (Agency) and listed as a company currently authorized under 31 C.F.R. part 223 as possessing a Certificate of Authority as described thereunder.

## **CARGO PREFERENCE REQUIREMENTS**

The contractor agrees:

- a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available. 46 U.S.C. § 55305, and U.S. Maritime Administration regulations, "Cargo Preference – U.S.-Flag Vessels," 46 CFR Part 381.
- b. to furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in 46 CFR § 381.7(a)(1) shall be furnished to both the recipient (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590; and
- c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

## **CHANGES TO FEDERAL REQUIREMENTS**

Federal requirements that apply to the Recipient or the Award, the accompanying Underlying Agreement, and any Amendments thereto may change due to changes in federal law, regulation, other requirements, or guidance, or changes in the Recipient's Underlying Agreement including any information incorporated by reference and made part of that Underlying Agreement; and

Applicable changes to those federal requirements will apply to each Third Party Agreement and parties thereto at any tier.

## CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. § 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251-1387). Violations must be reported to FTA and the Regional Office of the Environmental Protection Agency. The following applies for contracts of amounts in excess of \$150,000:

### Clean Air Act

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- (2) The contractor agrees to report each violation to the Agency and understands and agrees that the Agency will, in turn, report each violation as required to assure notification to the Agency, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FTA.

### Federal Water Pollution Control Act

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- (2) The contractor agrees to report each violation to the Agency and understands and agrees that the Agency will, in turn, report each violation as required to assure notification to the Agency, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FTA."

## CIVIL RIGHTS LAWS AND REGULATIONS

The following Federal Civil Rights laws and regulations apply to all contracts.

The Contractor and any subcontractor agree to comply with all the requirements prohibiting discrimination on the basis of race, color, or national origin of the Title VI of the Civil Rights Act of 1964, as amended 52 U.S.C 2000d, and U.S. DOT regulation "Nondiscrimination in Federally-Assisted Programs of the Department of Transportation – Effectuation of the Title VI of the Civil rights Act," 49 C.F. R. Part 21 and any implementing requirement FTA may issue.

**1 Federal Equal Employment Opportunity (EEO) Requirements.** These include, but are not limited to:

- a) Nondiscrimination in Federal Public Transportation Programs. 49 U.S.C. § 5332, covering projects, programs, and activities financed under 49 U.S.C. Chapter 53, prohibits discrimination on the basis of race, color, religion, national origin, sex (including sexual orientation), disability, or age, and prohibits discrimination in employment or business opportunity.
- b) Prohibition against Employment Discrimination. Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, Title VI of the Civil Rights Act of 1964," 49 CFR Part 21, and 49 U.S.C. § 5332, prohibits discrimination in employment on the basis of race, color, religion, sex, or national origin.

**2 Nondiscrimination on the Basis of Sex.** Title IX of the Education Amendments of 1972, as amended, 20 U.S.C. § 1681 et seq. and implementing Federal regulations, "Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance," 49 C.F.R. part 25 prohibit discrimination on the basis of sex.

**3 Nondiscrimination on the Basis of Age.** The "Age Discrimination Act of 1975," as amended, 42 U.S.C. § 6101 et seq., and Department of Health and Human Services implementing regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance," 45 C.F.R. part 90, prohibit discrimination by participants in federally assisted programs against individuals on the basis of age. The Age Discrimination in Employment Act (ADEA), 29 U.S.C. § 621 et seq., and Equal Employment Opportunity Commission (EEOC) implementing regulations, "Age Discrimination in Employment Act," 29 C.F.R. part 1625, also prohibit employment discrimination against individuals age 40 and over on the basis of age.

**4 Federal Protections for Individuals with Disabilities.** The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. § 12101 et seq., prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and imposes specific requirements on public and private entities. Third party contractors must comply with their responsibilities under Titles I, II, III, IV, and V of the ADA in employment, public services, public accommodations, telecommunications, and other provisions, many of which are subject to regulations issued by other Federal agencies.

### **Civil Rights and Equal Opportunity**

The Agency is an Equal Opportunity Employer. As such, the Agency agrees to comply with all applicable Federal civil rights laws and implementing regulations. Apart from inconsistent requirements imposed by Federal laws or regulations, the Agency agrees to comply with the requirements of 49 U.S.C. § 5323(h) (3) by not using any Federal assistance awarded by FTA to support procurements using exclusionary or discriminatory specifications. Under this Contract, the Contractor shall at all times comply with the following requirements and shall include these requirements in each subcontract entered into as part thereof.

**1. Nondiscrimination.** In accordance with Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, disability, or age. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

**2. Equal Employment Opportunity.** In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e et seq., Title I of the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. §§ 12101, et seq.; and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements, without regard to their race, color, religion, national origin, or sex (including sexual orientation). In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

**3. Age.** In accordance with the Age Discrimination in Employment Act, 29 U.S.C. §§ 621-634, U.S. Equal Employment Opportunity Commission (U.S. EEOC) regulations, "Age Discrimination in Employment Act," 29 C.F.R. part 1625, the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6101 et seq., U.S. Health and Human Services regulations, "Nondiscrimination on the Basis of Age in Programs or Activities Receiving Federal Financial Assistance," 45 C.F.R. part 90, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and

prospective employees for reason of age. In addition, the Contractor agrees to comply with any Implementing requirements FTA may issue.

**4.Disabilities.** In accordance with section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101 et seq., the Architectural Barriers Act of 1968, as amended, 42 U.S.C. § 4151 et seq., and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against individuals on the basis of disability. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

**5. Federal Law and Public Policy Requirements.** The Contractor shall ensure that Federal funding is expended in full accordance with the U.S. Constitution, Federal Law, and statutory and public policy requirements: including, but not limited to, those protecting free speech, religious liberty, public welfare, the environment, and prohibiting discrimination.

## CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

- a. Applicability: This requirement applies to all FTA grant and cooperative agreement programs.
- b. Where applicable (see 40 U.S.C. § 3701), all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5. See 2 C.F.R. Part 200, Appendix II.
- c. Under 40 U.S.C. § 3702, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.
- d. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- e. The regulation at 29 C.F.R. § 5.5(b) provides the required contract clause concerning compliance with the Contract Work Hours and Safety Standards Act:

### Compliance with the Contract Work Hours and Safety Standards Act.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section."

## DAVIS BACON ACT AND COPELAND ANTI-KICKBACK ACT

For all prime construction, alteration or repair contracts in excess of \$2,000 awarded by FTA, the Contractor shall comply with the Davis-Bacon Act and the Copeland "Anti-Kickback" Act. Under 49 U.S.C. § 5333(a), prevailing wage protections apply to laborers and mechanics employed on FTA assisted construction, alteration, or repair projects. The Contractor will comply with the Davis-Bacon Act, 40 U.S.C. §§ 3141-3144, and 3146-3148 as supplemented by DOL regulations at 29 C.F.R. part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction." In accordance with the statute, the Contractor shall pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, the Contractor agrees to pay wages not less than once a week. The Contractor shall also comply with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by DOL regulations at 29 C.F.R. part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States." The Contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

## DISADVANTAGED BUSINESS ENTERPRISE (DBE)

*(Does not apply to projects fully funded by the Tribal Transportation Program (TTP).)*

It is the policy of the Agency and the United States Department of Transportation ("DOT") that Disadvantaged Business Enterprises ("DBE's"), as defined herein and in the Federal regulations published at 49 C.F.R. part 26, shall have an equal opportunity to participate in DOT-assisted contracts.

The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 C.F.R. part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Agency deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible. 49 C.F.R. § 26.13(b).

Prime contractors are required to pay subcontractors for satisfactory performance of their contracts no later than 30 days from receipt of each payment the Agency makes to the prime contractor. 49 C.F.R. § 26.29(a).

Finally, for contracts with defined DBE contract goals, the contractor shall utilize the specific DBEs listed unless the contractor obtains the Agency's written

consent; and that, unless the Agency's consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE. 49 C.F.R. § 26.53(f) (1).

## **DOMESTIC PREFERENCES FOR PROCUREMENTS**

a. The recipient or subrecipient should, to the greatest extent practicable and consistent with law, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards, contracts, and purchase orders under Federal awards.

b. For purposes of this section:

(1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

c. Federal agencies providing Federal financial assistance for infrastructure projects must implement the Buy America preferences set forth in 2 CFR 184.

## **DEBARMENT AND SUSPENSION**

Debarment and Suspension (Executive Orders 12549 and 12689). A covered transaction (see 2 C.F.R. §§ 180.220 and 1200.220) must not be entered into with any party listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. 180 that implement Executive Orders 12549 (31 U.S.C. § 6101 note, 51 Fed. Reg. 6370,) and 12689 (31 U.S.C. § 6101 note, 54 Fed. Reg. 34131), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. The Recipient agrees to include, and require each Third Party Participant to include, a similar provision in each lower tier covered transaction, ensuring that each lower tier Third Party Participant:

(1) Complies with federal debarment and suspension requirements; and

(2) Reviews the SAM at <https://www.sam.gov>, if necessary to comply with U.S. DOT regulations, 2 CFR Part 1200.

## **ENERGY CONSERVATION**

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).

## **FLY AMERICA**

a) Definitions. As used in this clause—

1) "International air transportation" means transportation by air between a place in the United States and a place outside the United States or between two places both of which are outside the United States. 2) "United States" means the 50 States, the District of Columbia, and outlying areas. 3) "U.S.-flag air carrier" means an air carrier holding a certificate under 49 U.S.C. Chapter 411.

b) When Federal funds are used to fund travel, Section 5 of the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118) (Fly America Act) requires contractors, Agencies, and others use U.S.-flag air carriers for U.S. Government-financed international air transportation of personnel (and their personal effects) or property, to the extent that service by those carriers is available. It requires the Comptroller General of the United States, in the absence of satisfactory proof of the necessity for foreign-flag air transportation, to disallow expenditures from funds, appropriated or otherwise established for the account of the United States, for international air transportation secured aboard a foreign-flag air carrier if a U.S.-flag air carrier is available to provide such services.

c) If available, the Contractor, in performing work under this contract, shall use U.S.-flag carriers for international air transportation of personnel (and their personal effects) or property.

d) In the event that the Contractor selects a carrier other than a U.S.-flag air carrier for international air transportation, the Contractor shall include a statement on vouchers involving such transportation essentially as follows:

### Statement of Unavailability of U.S.-Flag Air Carriers

International air transportation of persons (and their personal effects) or property by U.S.-flag air carrier was not available or it was necessary to use foreign-flag air carrier service for the following reasons. See FAR § 47.403. [State reasons]:

e) Contractor shall include the substance of this clause, including this paragraph (e), in each subcontract or purchase under this contract that may involve international air transportation.

## **INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS**

The provisions within include, in part, certain Standard Terms and Conditions required under the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (2 CFR § 200), whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, detailed in 2 CFR § 200 or as amended by 2 CFR § 1201, or the most recent version of FTA Circular 4220.1 are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Contract. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any request which would cause a violation of the FTA terms and conditions.

## **NO GOVERNMENT OBLIGATION TO THIRD PARTIES**

The Recipient and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to the Recipient, Contractor or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying Contract. The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by the FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

## **NOTICE TO FTA AND U.S. DOT INSPECTOR GENERAL OF INFORMATION RELATED TO FRAUD, WASTE, ABUSE, OR OTHER LEGAL MATTERS**

If a current or prospective legal matter that may affect the Federal Government emerges, the Recipient must promptly notify the FTA Chief Counsel and FTA Regional Counsel for the Region in which the Recipient is located. The Recipient must include a similar notification requirement in its Third Party Agreements and must require each Third Party Participant to include an equivalent provision in its subagreements at every tier, for any agreement that is a "covered transaction" according to 2 C.F.R. §§ 180.220 and 1200.220.

(1) The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government as a party to litigation or a legal disagreement in any forum for any reason.

(2) Matters that may affect the Federal Government include, but are not limited to, the Federal Government's interests in the Award, the accompanying Underlying Agreement, and any Amendments thereto, or the Federal Government's administration or enforcement of federal laws, regulations, and requirements.

(3) The Recipient must promptly notify the U.S. DOT Inspector General in addition to the FTA Chief Counsel or Regional Counsel for the Region in which the Recipient is located, if the Recipient has knowledge of potential fraud, waste, or abuse occurring on a Project receiving assistance from FTA. The notification provision applies if a person has or may have submitted a false claim under the False Claims Act, 31 U.S.C. § 3729 et seq., or has or may have committed a criminal or civil violation of law pertaining to such matters as fraud, conflict of interest, bribery, gratuity, or similar misconduct. This responsibility occurs whether the Project is subject to this Agreement or another agreement between the Recipient and FTA, or an agreement involving a principal, officer, employee, agent, or Third Party Participant of the Recipient. It also applies to subcontractors at any tier. Knowledge, as used in this paragraph, includes, but is not limited to, knowledge of a criminal or civil investigation by a Federal, state, or local law enforcement or other investigative agency, a criminal indictment or civil complaint, or probable cause that could support a criminal indictment, or any other credible information in the possession of the Recipient.

## **PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS**

The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. chapter 53, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5323(l) on the Contractor, to the extent the Federal Government deems appropriate.

The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

## **PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT.**

a) Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:

- 1) Procure or obtain covered telecommunications equipment or services;
- 2) Extend or renew a contract to procure or obtain covered telecommunications equipment or services; or
- 3) Enter into a contract (or extend or renew a contract) to procure or obtain covered telecommunications equipment or services.

(b) As described in section 889 of Public Law 115-232, "covered telecommunications equipment or services" means any of the following:

- (1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- (2) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- (3) Telecommunications or video surveillance services provided by such entities or using such equipment;
- (4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country;

(c) For the purposes of this section, "covered telecommunications equipment or services" also include systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(d) In implementing the prohibition under section 889 of Public Law 115-232, heads of executive agencies administering loan, grant, or subsidy programs must prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered telecommunications equipment or services, to procure replacement equipment or services, and to ensure that communications service to users and customers is sustained.

(e) When the recipient or subrecipient accepts a loan or grant, it is certifying that it will comply with the prohibition on covered telecommunications equipment and services in this section. The recipient or subrecipient is not required to certify that funds will not be expended on covered telecommunications equipment or services beyond the certification provided upon accepting the loan or grant and those provided upon submitting payment requests and financial reports.

(f) For additional information, see section 889 of Public Law 115-232 and 200.471.

## **PROMPT PAYMENT**

*(Does not apply to projects fully funded by the Tribal Transportation Program (TTP).)*

The contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the contractor's receipt of payment for that work. In addition, the contractor is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to this contract is satisfactorily completed.

The contractor must promptly notify the Agency, whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without prior written consent of the Agency.

## **RESTRICTIONS ON LOBBYING**

### **Conditions on use of funds.**

(a) No appropriated funds may be expended by the recipient of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b) Each person who requests or receives from an agency a Federal contract, grant, loan, or cooperative agreement shall file with that agency a certification, that the person has not made, and will not make, any payment prohibited by paragraph (a) of this section.

(c) Each person who requests or receives from an agency a Federal contract, grant, loan, or a cooperative agreement shall file with that agency a disclosure form if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under paragraph (a) of this section if paid for with appropriated funds.

(d) Each person who requests or receives from an agency a commitment providing for the United States to insure or guarantee a loan shall file with that agency a statement, whether that person has made or has agreed to make any payment to influence or attempt to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with that loan insurance or guarantee.

(e) Each person who requests or receives from an agency a commitment providing for the United States to insure or guarantee a loan shall file with that agency a disclosure form if that person has made or has agreed to make any payment to influence or attempt to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with that loan insurance or guarantee.

### **Certification and disclosure.**

(a) Each person shall file a certification, and a disclosure form, if required, with each submission that initiates agency consideration of such person for:

- (1) Award of a Federal contract, grant, or cooperative agreement exceeding \$100,000; or
- (2) An award of a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding \$150,000.

(b) Each person shall file a certification, and a disclosure form, if required, upon receipt by such person of:

- (1) A Federal contract, grant, or cooperative agreement exceeding \$100,000; or
- (2) A Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding \$150,000,

**Unless such person previously filed a certification, and a disclosure form, if required, under paragraph (a) of this section.**

(c) Each person shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under paragraphs (a) or (b) of this section. An event that materially affects the accuracy of the information reported includes:

- (1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
- (2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or,
- (3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(d) Any person who requests or receives from a person referred to in paragraphs (a) or (b) of this section:

- (1) A subcontract exceeding \$100,000 at any tier under a Federal contract;
- (2) A subgrant, contract, or subcontract exceeding \$100,000 at any tier under a Federal grant;
- (3) A contract or subcontract exceeding \$100,000 at any tier under a Federal loan exceeding \$150,000; or,
- (4) A contract or subcontract exceeding \$100,000 at any tier under a Federal cooperative agreement,

**Shall file a certification, and a disclosure form, if required, to the next tier above.**

(e) All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the person referred to in paragraphs (a) or (b) of this section. That person shall forward all disclosure forms to the agency.

(f) Any certification or disclosure form filed under paragraph (e) of this section shall be treated as a material representation of fact upon which all receiving tiers shall rely. All liability arising from an erroneous representation shall be borne solely by the tier filing that representation and shall not be shared by any tier to which the erroneous representation is forwarded. Submitting an erroneous certification or disclosure constitutes a failure to file the required certification or disclosure, respectively. If a person fails to file a required certification or disclosure, the United States may pursue all available remedies, including those authorized by section 1352, title 31, U.S. Code.

(g) For awards and commitments in process prior to December 23, 1989, but not made before that date, certifications shall be required at award or commitment, covering activities occurring between December 23, 1989, and the date of award or commitment. However, for awards and commitments in process prior to the December 23, 1989 effective date of these provisions, but not made before December 23, 1989, disclosure forms shall not be required at time of award or commitment but shall be filed within 30 days.

(h) No reporting is required for an activity paid for with appropriated funds if that activity is allowable under either subpart B or C.

## **SAFE OPERATION OF MOTOR VEHICLES**

### **Seat Belt Use**

The Contractor is encouraged to adopt and promote on-the-job seat belt use policies and programs for its employees and other personnel that operate company-owned vehicles, company rented vehicles, or personally operated vehicles. The terms "company-owned" and "company-leased" refer to vehicles owned or leased either by the Contractor or Agency.

### **Distracted Driving**

The Contractor agrees to adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers, including policies to ban text messaging while using an electronic device supplied by an employer, and driving a vehicle the driver owns or rents, a vehicle Contractor owns, leases, or rents, or a privately-owned vehicle when on official business in connection with the work performed under this Contract.

## **SEISMIC SAFETY**

The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation (DOT) Seismic Safety Regulations 49 C.F.R. part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract, including work performed by a subcontractor, is in compliance with the standards required by the Seismic Safety regulations and the certification of compliance issued on the project.

## **SIMPLIFIED ACQUISITION THRESHOLD**

Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. § 1908, or otherwise set by law, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate. (Note that the simplified acquisition threshold determines the procurement procedures that must be employed pursuant to 2 C.F.R. §§ 200.317–200.327. The simplified acquisition threshold does not exempt a procurement from other eligibility or processes requirements that may apply. For example, Buy America's eligibility and process requirements apply to any procurement in excess of \$150,000. 49 U.S.C. § 5323(j)(13).

## **SOLID WASTES (RECOVERED MATERIALS)**

(a) A Recipient or subrecipient that is a State agency or agency of a political subdivision of a State and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 as amended, 42 U.S.C. 6962. The requirements of Section 6002 include procuring only items designated in the guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

(b) The recipient or subrecipient should, to the greatest extent practicable and consistent with law, purchase, acquire, or use products and services that can be reused, refurbished, or recycled; contain recycled content, are biobased, or are energy and water efficient; and are sustainable. This may include purchasing compostable items and other products and services that reduce the use of single-use plastic products. See Executive Order 14057, section 101, Policy.

## **SPECIAL NOTIFICATION REQUIREMENTS FOR STATES**

Applies to States –

a. To the extent required under federal law, the State, as the Recipient, agrees to provide the following information about federal assistance awarded for its State Program, Project, or related activities:

- (1) The Identification of FTA as the federal agency providing the federal assistance for a State Program or Project;
- (2) The Catalog of Federal Domestic Assistance Number of the program from which the federal assistance for a State Program or Project is authorized; and
- (3) The amount of federal assistance FTA has provided for a State Program or Project.

b. Documents - The State agrees to provide the information required under this provision in the following documents:

- (1) applications for federal assistance,
- (2) requests for proposals or solicitations,
- (3) forms,
- (4) notifications,
- (5) press releases,
- (6) other publications.

## **TERMINATION**

### Termination for Convenience (General Provision)

The Agency may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the Agency's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to Agency to be paid the Contractor. If the Contractor has any property in its possession belonging to Agency, the Contractor will account for the same, and dispose of it in the manner Agency directs.

### Termination for Default [Breach or Cause] (General Provision)

If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the Agency may terminate this contract for default. Termination shall be effected by serving a Notice of Termination on the Contractor setting forth the manner in which the Contractor is in default. The Contractor will be paid only the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract. If it is later determined by the Agency that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the Agency, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a Termination for Convenience.

### Opportunity to Cure (General Provision)

The Agency, in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the Notice of Termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to Agency's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within [10 days] after receipt by Contractor of written notice from Agency setting forth the nature of said breach or default, Agency shall have the right to terminate the contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude Agency from also pursuing all available remedies against Contractor and its sureties for said breach or default.

### Waiver of Remedies for any Breach

In the event that Agency elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this contract, such waiver by Agency shall not limit Agency's remedies for any succeeding breach of that or of any other covenant, term, or condition of this contract.

### Termination for Convenience (Professional or Transit Service Contracts)

The Agency, by written notice, may terminate this contract, in whole or in part, when it is in the Agency's interest. If this contract is terminated, the Agency shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

### Termination for Default (Supplies and Service)

If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension, or if the Contractor fails to comply with any other provisions of this contract, the Agency may terminate this contract for default. The Agency shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner or performance set forth in this contract. If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Agency.

#### Termination for Default (Transportation Services)

If the Contractor fails to pick up the commodities or to perform the services, including delivery services, within the time specified in this contract or any extension, or if the Contractor fails to comply with any other provisions of this contract, the Agency may terminate this contract for default. The Agency shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of default. The Contractor will only be paid the contract price for services performed in accordance with the manner of performance set forth in this contract.

If this contract is terminated while the Contractor has possession of Agency goods, the Contractor shall, upon direction of the Agency, protect and preserve the goods until surrendered to the Agency or its agent. The Contractor and Agency shall agree on payment for the preservation and protection of goods. Failure to agree on an amount will be resolved under the Dispute clause.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Agency.

#### Termination for Default (Construction)

If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will ensure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provision of this contract, Agency may terminate this contract for default. The Agency shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the Agency may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Agency resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Agency in completing the work.

The Contractor's right to proceed shall not be terminated nor shall the Contractor be charged with damages under this clause if: 1. The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include: acts of God, acts of Agency, acts of another contractor in the performance of a contract with Agency, epidemics, quarantine restrictions, strikes, freight embargoes; and 2. The Contractor, within [10] days from the beginning of any delay, notifies Agency in writing of the causes of delay. If, in the judgment of Agency, the delay is excusable, the time for completing the work shall be extended. The judgment of Agency shall be final and conclusive for the parties, but subject to appeal under the Disputes clause(s) of this contract. 3. If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of Agency.

#### Termination for Convenience or Default (Architect and Engineering)

The Agency may terminate this contract in whole or in part, for the Agency's convenience or because of the failure of the Contractor to fulfill the contract obligations. The Agency shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Agency's Contracting Officer all data, drawings, specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process. Agency has a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, all such data, drawings, specifications, reports, estimates, summaries, and other information and materials.

If the termination is for the convenience of the Agency, the Agency's Contracting Officer shall make an equitable adjustment in the contract price but shall allow no anticipated profit on unperformed services.

If the termination is for failure of the Contractor to fulfill the contract obligations, the Agency may complete the work by contract or otherwise and the Contractor shall be liable for any additional cost incurred by the Agency.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of Agency.

#### Termination for Convenience or Default (Cost-Type Contracts)

The Agency may terminate this contract, or any portion of it, by serving a Notice of Termination on the Contractor. The notice shall state whether the termination is for convenience of Agency or for the default of the Contractor. If the termination is for default, the notice shall state the manner in which the Contractor has failed to perform the requirements of the contract. The Contractor shall account for any property in its possession paid for from funds received from the Agency, or property supplied to the Contractor by the Agency. If the termination is for default, the Agency may fix the fee, if the contract provides for a fee, to be paid the Contractor in proportion to the value, if any, of work performed up to the time of termination. The Contractor shall promptly submit its termination claim to the Agency and the parties shall negotiate the termination settlement to be paid the Contractor.

If the termination is for the convenience of Agency, the Contractor shall be paid its contract close-out costs, and a fee, if the contract provided for payment of a fee, in proportion to the work performed up to the time of termination.

If, after serving a Notice of Termination for Default, the Agency determines that the Contractor has an excusable reason for not performing, the Agency, after setting up a new work schedule, may allow the Contractor to continue work, or treat the termination as a Termination for Convenience.

## **VETERANS HIRING PREFERENCE**

Veterans Employment - Construction contracts of Federal financial assistance shall ensure that contractors working on a capital project funded using such assistance give a hiring preference, to the extent practicable, to veterans (as defined in section 2108 of title 5) who have the requisite skills and abilities to perform the construction work required under the contract. This subsection shall not be understood, construed or enforced in any manner that would require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee.

## **VIOLATION AND BREACH OF CONTRACT**

#### **Disputes:**

Disputes arising in the performance of this Contract that are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the agency. This decision shall be final and conclusive unless within [10] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the agencies authorized representative. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the agencies authorized representative shall be binding upon the Contractor and the Contractor shall abide by the decision.

#### **Performance during Dispute:**

Unless otherwise directed by the agencies authorized representative, contractor shall continue performance under this contract while matters in dispute are being resolved.

**Claims for Damages:**

Should either party to the contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

**Remedies:**

Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the agencies authorized representative and contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the Agency is located.

**Rights and Remedies:**

Duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the Agency or contractor shall constitute a waiver of any right or duty afforded any of them under the contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

**OTHER RECOMMENDED CONTRACT REQUIREMENTS**

**CONFORMANCE WITH ITS NATIONAL ARCHITECTURE**

Intelligent Transportation Systems (ITS) projects shall conform to the National ITS Architecture and standards pursuant to 23 CFR § 940. Conformance with the National ITS Architecture is interpreted to mean the use of the National ITS Architecture to develop a regional ITS architecture in support of integration and the subsequent adherence of all ITS projects to that regional ITS architecture. Development of the regional ITS architecture should be consistent with the transportation planning process for Statewide and Metropolitan Transportation Planning (49 CFR Part 613 and 621).

**FEDERAL TAX LIABILITY AND RECENT FELONY CONVICTIONS**

(1) The contractor certifies that it:

(a) Does not have any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and

(b) Was not convicted of the felony criminal violation under any Federal law within the preceding 24 months.

If the contractor cannot so certify, the Recipient will refer the matter to FTA and not enter into any Third Party Agreement with the Third Party Participant without FTA's written approval.

(2) Flow-Down. The Recipient agrees to require the contractor to flow this requirement down to participants at all lower tiers, without regard to the value of any subagreement.

**SEVERABILITY**

The Contractor agrees that if any provision of this agreement or any amendment thereto is determined to be invalid, then the remaining provisions thereof that conform to federal laws, regulations, requirements, and guidance will continue in effect.

**TRAFFICKING IN PERSONS**

The contractor agrees that it and its employees that participate in the Recipient's Award, may not:

(a) Engage in severe forms of trafficking in persons during the period of time that the Recipient's Award is in effect;

(b) Procure a commercial sex act during the period of time that the Recipient's Award is in effect; or

(c) Use forced labor in the performance of the Recipient's Award or subagreements thereunder.

## GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)

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Recipients, contractors, and subcontractors that enter into covered transactions are required to verify that the entity (as well as its principals and affiliates) with which they propose to contract or subcontract is not excluded or disqualified. This is done by: (a) checking the SAM exclusions; (b) collecting a certification from that person (found below); or (c) adding a clause or condition to the contract or subcontract.

**Instructions for Certification:** Signing below indicates the prospective lower tier participant is providing the signed certification.

(1) It will comply and facilitate compliance with U.S. DOT regulations, "Nonprocurement Suspension and Debarment," 2 CFR part 1200, which adopts and supplements the U.S. Office of Management and Budget (U.S. OMB) "Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," 2 CFR part 180,

(2) To the best of its knowledge and belief, that its Principals and Subrecipients at the first tier:

a. Are eligible to participate in covered transactions of any Federal department or agency and are not presently:

1. Debarred,
2. Suspension,
3. Proposed for debarment,
4. Declared ineligible,
5. Voluntarily excluded, or
6. Disqualified

b. Its management has not within a three-year period preceding its latest application or proposal been convicted of or had a civil judgment rendered against any of them for:

1. Commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction, or contract under a public transaction,
2. Violation of any Federal or State antitrust statute, or,
3. Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making any false statement, or receiving stolen property,

c. It is not presently indicted for, or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses listed in the preceding subsection 2.b of this Certification,

d. It has not had one or more public transactions (Federal, State, or local) terminated for cause or default within a three-year period preceding this Certification,

e. If, at a later time, it receives any information that contradicts the statements of subsections 2.a – 2.d above, it will promptly provide that information to FTA,

f. It will treat each lower tier contract or lower tier subcontract under its Project as a covered lower tier contract for purposes of 2 CFR part 1200 and 2 CFR part 180 if it:

1. Equals or exceeds \$25,000,
2. Is for audit services, or,
3. Requires the consent of a Federal official, and

g. It will require that each covered lower tier contractor and subcontractor:

1. Comply and facilitate compliance with the Federal requirements of 2 CFR parts 180 and 1200, and
2. Assure that each lower tier participant in its Project is not presently declared by any Federal department or agency to be:
  - a. Debarred from participation in its federally funded Project,
  - b. Suspended from participation in its federally funded Project,
  - c. Proposed for debarment from participation in its federally funded Project,
  - d. Declared ineligible to participate in its federally funded Project,
  - e. Voluntarily excluded from participation in its federally funded Project, or
  - f. Disqualified from participation in its federally funded Project, and

(3) It will provide a written explanation as indicated on a page attached in FTA's TrAMS platform or the Signature Page if it or any of its principals, including any of its first tier Subrecipients or its Third-Party Participants at a lower tier, is unable to certify compliance with the preceding statements in this Certification Group.

### **Certification**

Contractor: \_\_\_\_\_

Signature of Authorized Official: \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Name and Title of Contractor's Authorized Official: \_\_\_\_\_

## Federal Certifications

### CERTIFICATION AND RESTRICTIONS ON LOBBYING

---

I, \_\_\_\_\_ hereby certify  
(Name and title of official)

On behalf of \_\_\_\_\_ that:  
(Name of Bidder/Company Name)

- No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
- If any funds other than federal appropriated funds have been paid or will be paid to any person influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form – LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.,

Name of Bidder/Company Name: \_\_\_\_\_

Type or print name: \_\_\_\_\_

Signature of authorized representative: \_\_\_\_\_ Date \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

**BUY AMERICA CERTIFICATION  
STEEL OR MANUFACTURED PRODUCTS**

---

If steel, iron, or manufactured products (as defined in 49 CFR 661.3 and 661.5) are being procured, the appropriate certificate as set forth below shall be completed and submitted by each bidder or offeror in accordance with the requirement contained in 49 CFR 661.13(b).

**Certificate of Compliance with Buy America Requirements**

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(1), and the applicable regulations in 49 CFR part 661.

Company \_\_\_\_\_  
Name \_\_\_\_\_ Title \_\_\_\_\_  
Signature \_\_\_\_\_ Date \_\_\_\_\_

**Certificate of Non-Compliance with Buy America Steel or Manufactured Products Requirements**

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but it may qualify for an exception to the requirement pursuant to 49 U.S.C. 5323(j)(2), as amended, and the applicable regulations in 49 C.F.R. 661.7.

Company \_\_\_\_\_  
Name \_\_\_\_\_ Title \_\_\_\_\_  
Signature \_\_\_\_\_ Date \_\_\_\_\_



**ITC Board Room**  
610 Est Oglethorpe Ave, Savannah, GA 31401



1000 Business Center Drive  
Suite 50  
Savannah, GA 31401  
[www.pondco.com](http://www.pondco.com)

**19 August 2025**  
**Pond Project No. 1230561**  
**100% Submittal – Issued for Construction**

| Division | Section Title |
|----------|---------------|
|----------|---------------|

## **SPECIFICATIONS GROUP**

### ***General Requirements Subgroup***

#### **DIVISION 01 - GENERAL REQUIREMENTS**

|        |                                     |
|--------|-------------------------------------|
| 012100 | ALLOWANCES                          |
| 012500 | SUBSTITUTION PROCEDURES             |
| 012600 | CONTRACT MODIFICATION PROCEDURES    |
| 012900 | PAYMENT PROCEDURES                  |
| 013100 | PROJECT MANAGEMENT AND COORDINATION |
| 013200 | CONSTRUCTION PROGRESS DOCUMENTATION |
| 013233 | PHOTOGRAPHIC DOCUMENTATION          |
| 013300 | SUBMITTAL PROCEDURES                |
| 014000 | QUALITY REQUIREMENTS                |
| 014200 | REFERENCES                          |
| 016000 | PRODUCT REQUIREMENTS                |
| 017300 | EXECUTION                           |
| 017700 | CLOSEOUT PROCEDURES                 |
| 017839 | PROJECT RECORD DOCUMENTS            |

### ***Facility Construction Subgroup***

#### **DIVISION 02 - EXISTING CONDITIONS**

|        |                      |
|--------|----------------------|
| 024119 | SELECTIVE DEMOLITION |
|--------|----------------------|

#### **DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES**

|        |                     |
|--------|---------------------|
| 061000 | ROUGH CARPENTRY     |
| 066100 | SOLID SURFACE SHEET |

#### **DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

|        |                |
|--------|----------------|
| 079200 | JOINT SEALANTS |
|--------|----------------|

#### **DIVISION 08 - OPENINGS**

|        |                     |
|--------|---------------------|
| 081213 | HOLLOW METAL FRAMES |
| 081216 | ALUMINUM FRAMES     |
| 081416 | FLUSH WOOD DOORS    |
| 087100 | DOOR HARDWARE       |

#### **DIVISION 09 - FINISHES**

|        |                              |
|--------|------------------------------|
| 092216 | NON-STRUCTURAL METAL FRAMING |
|--------|------------------------------|

|        |                                     |
|--------|-------------------------------------|
| 092900 | GYPSUM BOARD                        |
| 095113 | ACOUSTICAL PANEL CEILINGS           |
| 09653  | RESILIENT WALL BASE AND ACCESSORIES |
| 096813 | TILE CARPETING                      |
| 099123 | INTERIOR PAINTING                   |

**DIVISION 10 - SPECIALTIES**

|        |                               |
|--------|-------------------------------|
| 102600 | STAINLESS STEEL CORNER GUARDS |
| 102613 | TAPE-ON CORNER GUARDS         |

**DIVISION 12 - FURNISHINGS**

|        |                      |
|--------|----------------------|
| 122413 | ROLLER WINDOW SHADES |
|--------|----------------------|

END OF TABLE OF CONTENTS

DOCUMENT 000107 - SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

A. Architect:

1. Jorge Mendez
2. License #: RA013124
3. Responsible for sections listed below:

|           |                                     |
|-----------|-------------------------------------|
| 000000    | SPEC COVER                          |
| 000001    | TABLE OF CONTENTS                   |
| 12100 FL  | ALLOWANCES                          |
| 12500 FL  | SUBSTITUTION PROCEDURES             |
| 12600 FL  | CONTRACT MODIFICATION PROCEDURES    |
| 12900 FL  | PAYMENT PROCEDURES                  |
| 13100 FL  | PROJECT MANAGEMENT AND COORDINATION |
| 13200 FL  | CONSTRUCTION PROGRESS DOCUMENTATION |
| 13233 FL  | PHOTOGRAPHIC DOCUMENTATION          |
| 13300 FL  | SUBMITTAL PROCEDURES                |
| 14000 FL  | QUALITY REQUIREMENTS                |
| 14200 FL  | REFERENCES                          |
| 16000 FL  | PRODUCT REQUIREMENTS                |
| 17300 FL  | EXECUTION                           |
| 17700 FL  | CLOSEOUT PROCEDURES                 |
| 17839 FL  | PROJECT RECORD DOCUMENTS            |
| 24119 FL  | SELECTIVE DEMOLITION                |
| 66100     | SOLID SURFACE SHEET                 |
| 79200     | JOINT SEALANTS                      |
| 81213 FL  | HOLLOW METAL FRAMES                 |
| 81416 SF  | FLUSH WOOD DOORS                    |
| 87100     | DOOR HARDWARE                       |
| 92216 FL  | NON-STRUCTURAL METAL FRAMING        |
| 92900 FL  | GYPSUM BOARD                        |
| 95113     | ACOUSTICAL CEILINGS                 |
| 96513     | RESILIENT WALL BASE AND ACCESSORIES |
| 96813     | TILE CARPETING                      |
| 99123     | INTERIOR PAINTING                   |
| 102600    | STAINLESS STEEL CORNER GUARDS       |
| 102613    | TAPE-ON CORNER GUARDS               |
| 122413 SF | ROLLER WINDOW SHADES                |



B. END OF DOCUMENT 000107

## SECTION 012100 - ALLOWANCES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
  - 1. Lump-sum allowances.
- C. Related Requirements:
  - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

#### 1.2 DEFINITIONS

- A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

#### 1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

#### 1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

#### 1.6 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

#### 1.7 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, required maintenance materials, and similar margins.
  - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
  - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
- B. Submit claims for increased costs due to a change in the scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
  - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

END OF SECTION 012100

## 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.
  - 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 to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit documentation identifying 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 form acceptable to Architect.
  - 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 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 if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
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

## 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.
  - 2. Section 013100 "Project Management and Coordination" for requirements for forms for contract modifications provided as part of web-based Project management software.

#### 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: Construction Manager 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 are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within 7 days 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 .
  - 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 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

#### 1.5 CHANGE ORDER PROCEDURES

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

#### 1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive. 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.

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 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. Owner's name.
    - c. Owner's Project number.
    - d. Name of Architect.
    - e. Architect's Project number.
    - f. Contractor's name and address.
    - g. 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 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. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.
7. Overhead Costs, Separate Line Items: 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. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
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: The date for each progress payment is indicated in the Owner/Contractor Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the 28<sup>th</sup> day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
  1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.

- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. 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.
- F. 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.
- G. 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.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
  - 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.
  5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- I. 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.
- J. 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.
    - a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 017700 "Closeout Procedures."
  2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- K. 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. Certification of completion of final punch list items.
  3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.

4. Updated final statement, accounting for final changes to the Contract Sum.
5. AIA Document G706.
6. AIA Document G706A.
7. AIA Document G707.
8. Evidence that claims have been settled.
9. 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.
10. Final liquidated damages settlement statement.
11. Proof that taxes, fees, and similar obligations are paid.
12. Waivers and releases.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

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 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
  - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

#### 1.2 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, 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, 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, and in prominent location in built facility. 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 of Multiple Contracts: Each contractor 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 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.

## 1.6 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 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. Owner name.
  - 3. Owner's Project number.
  - 4. Name of Architect.
  - 5. Architect's Project number.
  - 6. Date.
  - 7. Name of Contractor.
  - 8. RFI number, numbered sequentially.
  - 9. RFI subject.
  - 10. Specification Section number and title and related paragraphs, as appropriate.
  - 11. Drawing number and detail references, as appropriate.
  - 12. Field dimensions and conditions, as appropriate.
  - 13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  - 14. Contractor's signature.
  - 15. 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: 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 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 5 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 weekly. Use software log that is part of web-based Project management software. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect.
  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 response was received.
  8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven 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. Contractor shall execute a data licensing agreement in the form of AIA Document C106 Digital Data Licensing Agreement.
    - 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 AIA Document C106.
  - 4.
- 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: 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 seven 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 and Architect, within three days of the meeting.
- B. Preconstruction Conference: 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 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. Phasing.
    - d. Critical work sequencing and long lead items.

- e. Designation of key personnel and their duties.
  - f. Lines of communications.
  - g. Use of web-based Project software.
  - h. Procedures for processing field decisions and Change Orders.
  - i. Procedures for RFIs.
  - j. Procedures for testing and inspecting.
  - k. Procedures for processing Applications for Payment.
  - l. Distribution of the Contract Documents.
  - m. Submittal procedures.
  - n. Preparation of Record Documents.
  - o. Use of the premises and existing building.
  - p. Work restrictions.
  - q. Working hours.
  - r. Owner's occupancy requirements.
  - s. Responsibility for temporary facilities and controls.
  - t. Procedures for moisture and mold control.
  - u. Procedures for disruptions and shutdowns.
  - v. Construction waste management and recycling.
  - w. Parking availability.
  - x. Office, work, and storage areas.
  - y. Equipment deliveries and priorities.
  - z. First aid.
  - aa. Security.
  - bb. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation 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 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. Sustainable design requirements.
    - i. Review of mockups.
    - j. Possible conflicts.
    - k. Compatibility requirements.
    - l. Time schedules.

- m. Weather limitations.
  - n. Manufacturer's written instructions.
  - o. Warranty requirements.
  - p. Compatibility of materials.
  - q. Acceptability of substrates.
  - r. Temporary facilities and controls.
  - s. Space and access limitations.
  - t. Regulations of authorities having jurisdiction.
  - u. Testing and inspecting requirements.
  - v. Installation procedures.
  - w. Coordination with other work.
  - x. Required performance results.
  - y. Protection of adjacent work.
  - z. 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. Progress Meetings: Conduct progress meetings at regular intervals.
- 1. Coordinate dates of meetings with preparation of payment requests.
  - 2. Attendees: In addition to representatives of Owner 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) Resolution of BIM component conflicts.
      - 4) Status of submittals.
      - 5) Status of sustainable design documentation.

- 6) Deliveries.
  - 7) Off-site fabrication.
  - 8) Access.
  - 9) Site use.
  - 10) Temporary facilities and controls.
  - 11) Progress cleaning.
  - 12) Quality and work standards.
  - 13) Status of correction of deficient items.
  - 14) Field observations.
  - 15) Status of RFIs.
  - 16) Status of Proposal Requests.
  - 17) Pending changes.
  - 18) Status of Change Orders.
  - 19) Pending claims and disputes.
  - 20) 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

## SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Startup construction schedule.
  - 2. Contractor's Construction Schedule.
  - 3. Construction schedule updating reports.
  - 4. Daily construction reports.
  - 5. Material location reports.
  - 6. Site condition reports.
  - 7. Unusual event reports.
- B. Related Requirements:
  - 1. Section 011200 "Multiple Contract Summary" for preparing a combined Contractor's Construction Schedule.
  - 2. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.
  - 3. Section 014000 "Quality Requirements" for schedule of tests and inspections.

#### 1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.

- F. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of labor and equipment necessary for completing an activity as scheduled.

### 1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
  - 1. Working electronic copy of schedule file.
  - 2. PDF file.
- B. Startup construction schedule.
  - 1. Submittal of cost-loaded startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
- D. Construction Schedule Updating Reports: Submit with Applications for Payment.
- E. Daily Construction Reports: Submit at monthly intervals.
- F. Material Location Reports: Submit at monthly intervals.
- G. Site Condition Reports: Submit at time of discovery of differing conditions.
- H. Unusual Event Reports: Submit at time of unusual event.
- I. Qualification Data: For scheduling consultant.

### 1.4 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:
  - 1. Review software limitations and content and format for reports.
  - 2. Verify availability of qualified personnel needed to develop and update schedule.
  - 3. Discuss constraints, including work stages and interim milestones.

4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures.
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

## 1.5 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
  1. Secure time commitments for performing critical elements of the Work from entities involved.
  2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

## 1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
- B. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.
  1. Contract completion date to not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
  1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
  2. Temporary Facilities: Indicate start and completion dates for the following as applicable:
    - a. Securing of approvals and permits required for performance of the Work.
    - b. Temporary facilities.
    - c. Construction of mock-ups, prototypes and samples.
    - d. Owner interfaces and furnishing of items.
    - e. Interfaces with Separate Contracts.
    - f. Regulatory agency approvals.
    - g. Punch list.
  3. Procurement Activities: Include procurement process activities for the following long lead-time items and major items, requiring a cycle of more than 60 days, as separate

activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

4. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
  5. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
  6. Commissioning Time: Include no fewer than 15 days for commissioning.
  7. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
  8. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and Final Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  2. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
  2. Unanswered Requests for Information.
  3. Rejected or unreturned submittals.
  4. Notations on returned submittals.
  5. Pending modifications affecting the Work and the Contract Time.
- G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate Final Completion percentage for each activity.
- H. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

- I. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

#### 1.7 STARTUP CONSTRUCTION SCHEDULE

- A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within seven days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

#### 1.8 GANTT-CHART SCHEDULE REQUIREMENTS

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed the Notice of Award.
  1. Base schedule on the startup construction schedule and additional information received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
  1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

#### 1.9 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  1. List of subcontractors at Project site.
  2. List of separate contractors at Project site.
  3. Approximate count of personnel at Project site.
  4. Equipment at Project site.
  5. Material deliveries.
  6. High and low temperatures and general weather conditions, including presence of rain or snow.
  7. Testing and inspection.
  8. Accidents.

9. Meetings and significant decisions.
  10. Unusual events.
  11. Stoppages, delays, shortages, and losses.
  12. Meter readings and similar recordings.
  13. Emergency procedures.
  14. Orders and requests of authorities having jurisdiction.
  15. Change Orders received and implemented.
  16. Construction Change Directives received and implemented.
  17. Services connected and disconnected.
  18. Equipment or system tests and startups.
  19. Partial completions and occupancies.
  20. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List to be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:
1. Material stored prior to previous report and remaining in storage.
  2. Material stored prior to previous report and since removed from storage and installed.
  3. Material stored following previous report and remaining in storage.
- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

## SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Concealed Work photographs.
  - 3. Periodic construction photographs.
  - 4. Time-lapse sequence construction photographs.
  - 5. Final Completion construction photographs.
  - 6. Preconstruction video recordings.
  - 7. Periodic construction video recordings.
  - 8. Time-lapse sequence construction video recordings.
  - 9. Construction webcam.
- B. Related Requirements:
  - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
  - 2. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

#### 1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
  - 1. Submit photos on CD-ROM or thumb-drive or by uploading to web-based Project management software site. Include copy of key plan indicating each photograph's location and direction.
  - 2. Identification: Provide the following information with each image description in file metadata tag:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of location, vantage point, and direction.
    - g. Unique sequential identifier keyed to accompanying key plan.

### 1.3 FORMATS AND MEDIA

- A. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- B. Metadata: Record accurate date and time and GPS location data from camera.

### 1.4 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs with maximum depth of field and in focus.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
  - 1. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
  - 2. Take 20 photographs of existing buildings either on or adjoining property, to accurately record physical conditions at start of construction.
  - 3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- C. Periodic Construction Photographs: Take 50 photographs weekly coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- D. Final Completion Construction Photographs: Take 50 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

## 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.
3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
4. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and Final Completion construction photographs.
5. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
6. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
7. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
8. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
9. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect'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 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 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 Schedule: 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 Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    - a. Submit revised submittal schedule as required 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 final release or approval.

### 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 Contractor.
  5. Name of firm or entity that prepared submittal.
  6. Names of subcontractor, manufacturer, and supplier.
  7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
  8. Category and type of submittal.
  9. Submittal purpose and description.
  10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
  11. Drawing number and detail references, as appropriate.
  12. Indication of full or partial submittal.
  13. Location(s) where product is to be installed, as appropriate.
  14. Other necessary identification.
  15. Remarks.

16. 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 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.
  3. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
  4. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
  5. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

## 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 will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
  2. 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 10 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 10 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.
- 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 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 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 concurrently 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 opaque copies of each submittal. Architect will retain two copies; remainder will be returned.
- C. Samples: Submit Samples for review of type, 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. Paper Transmittal: Include paper transmittal, including complete submittal information indicated.
  5. 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.
  6. 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 full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
  7. 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 sets of Samples. Architect will retain two Sample sets; remainder will be returned.
      - 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 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 AWS B2.1/B2.1M 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 substrate preparation and primers required.
  - 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.

6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - a. Name of evaluation organization.
  - b. Date of evaluation.
  - c. Time period when report is in effect.
  - d. Product and manufacturers' names.
  - e. Description of product.
  - f. Test procedures and results.
  - g. Limitations of use.

#### 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 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.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. 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 will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

- A. Action Submittals: Architect and Construction Manager will review each submittal, indicate corrections or revisions required.
  - 1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.
  - 2. Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect 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.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect will discard 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 014000 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Requirements:

#### 1.2 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of 5 previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
  - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- D. Mockups: Physical assemblies of portions of the Work constructed to establish the standard by which the Work will be judged. Mockups are not Samples.
  - 1. Mockups are used for one or more of the following:
    - a. Verify selections made under Sample submittals.

- b. Demonstrate aesthetic effects.
    - c. Demonstrate the qualities of products and workmanship.
    - d. Demonstrate successful installation of interfaces between components and systems.
    - e. Perform preconstruction testing to determine system performance.
  - 2. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
  - 3. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) in accordance with 29 CFR 1910.7, by a testing agency accredited in accordance with NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" has the same meaning as the term "testing agency."
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

### 1.3 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 not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated Design Services Statement: Submit a statement 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, indicating that the products and systems are in

compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- E. Reports: Prepare and submit certified written reports and documents as specified.
- F. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

## 1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
  2. Project title and number.
  3. Name, address, telephone number, and email address of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement of whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement of whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.

## 1.7 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.
- E. Specialists: Certain Specification Sections require that specific construction activities be performed by entities who are recognized experts in those operations. Specialists will satisfy qualification requirements indicated and engage in the activities indicated.
  - 1. Requirements of authorities having jurisdiction supersede requirements for specialists.
- F. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor's Responsibilities:
    - a. Provide test specimens representative of proposed products and construction.

- b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
  - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
  - d. Build site-assembled test assemblies and mockups, using installers who will perform same tasks for Project.
  - e. When testing is complete, remove test specimens and test assemblies; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from the Contract Documents.

## 1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
  1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Engage a qualified testing agency to perform quality-control services.
    - a. Contractor will not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform duties of Contractor.
- E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - 6. Security and protection for samples and for testing and inspection equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payment.
  1. Schedule Contents: Include tests, inspections, and quality-control services, including Contractor- and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.
  2. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

## 1.9 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated on the structural drawings.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
  1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Architect.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and authorities' having jurisdiction reference during normal working hours.
  1. Submit log at Project closeout as part of Project Record Documents.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.

- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

## SECTION 014200 - REFERENCES

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms, including "requested," "authorized," "selected," "required," and "permitted," have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms, including "shown," "noted," "scheduled," and "specified," have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### 1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
  - 1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

### 1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they are to mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations, List: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they are to mean the recognized name of the entities in the following list. The information in this list is subject to change and is believed to be accurate as of the date of the Contract Documents.
  - 1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
  - 2. AAMA - American Architectural Manufacturers Association; (see FGIA).
  - 3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
  - 4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
  - 5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
  - 6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
  - 7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
  - 8. ACI - American Concrete Institute; [www.concrete.org](http://www.concrete.org).
  - 9. ACP - American Clean Power; (Formerly: American Wind Energy Association); [www.cleanpower.org](http://www.cleanpower.org).
  - 10. ACPA - American Concrete Pipe Association; [www.concretepipe.org](http://www.concretepipe.org).
  - 11. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
  - 12. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
  - 13. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
  - 14. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
  - 15. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
  - 16. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
  - 17. AIA - American Institute of Architects (The); [www.aia.org](http://www.aia.org).
  - 18. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
  - 19. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
  - 20. AITC - American Institute of Timber Construction; (see PLIB).
  - 21. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
  - 22. AMPP - Association for Materials Protection and Performance; [www.ampp.org](http://www.ampp.org).
  - 23. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
  - 24. AOSA/SCST - Association of Official Seed Analysts (The)/Society of Commercial Seed Technologists (The); [www.analyzeseeds.com](http://www.analyzeseeds.com).
  - 25. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
  - 26. APA - Architectural Precast Association; [www.archprecast.org](http://www.archprecast.org).
  - 27. API - American Petroleum Institute; [www.api.org](http://www.api.org).
  - 28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).

29. ASA - Acoustical Society of America; [www.acousticalsociety.org](http://www.acousticalsociety.org).
30. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
31. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (see ASCE).
32. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
33. ASME - ASME International; American Society of Mechanical Engineers (The); [www.asme.org](http://www.asme.org).
34. ASSE - ASSE International; (American Society of Sanitary Engineering); [www.asse-plumbing.org](http://www.asse-plumbing.org).
35. ASSP - American Society of Safety Professionals; [www.assp.org](http://www.assp.org).
36. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
37. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
38. AVIXA - Audiovisual and Integrated Experience Association; [www.avixa.org](http://www.avixa.org).
39. AWI - Architectural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
40. AWMAC - Architectural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
41. AWWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
42. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
43. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
44. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
45. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
46. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
47. BIFMA - Business and Institutional Furniture Manufacturer's Association; [www.bifma.org](http://www.bifma.org).
48. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
49. BWF - Badminton World Federation; [www.bwfbadminton.com](http://www.bwfbadminton.com).
50. CARB - California Air Resources Board; [www.arb.ca.gov](http://www.arb.ca.gov).
51. CDA - Copper Development Association Inc.; [www.copper.org](http://www.copper.org).
52. CE - Conformite Europeenne (European Commission); [www.ec.europa.eu/growth/single-market/ce-marking](http://www.ec.europa.eu/growth/single-market/ce-marking).
53. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
54. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
55. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
56. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
57. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
58. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
59. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
60. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
61. CPA - Composite Panel Association; [www.compositepanel.org](http://www.compositepanel.org).
62. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
63. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
64. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
65. CSA - CSA Group; [www.csagroup.org](http://www.csagroup.org).
66. CSI - Cast Stone Institute; [www.caststone.org](http://www.caststone.org).
67. CSI - Construction Specifications Institute (The); [www.csiresources.org](http://www.csiresources.org).
68. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
69. CTA - Consumer Technology Association; [www.cta.tech](http://www.cta.tech).
70. CTI - Cooling Technology Institute; [www.coolingtechnology.org](http://www.coolingtechnology.org).
71. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
72. DHA - Decorative Hardwoods Association; [www.decorativehardwoods.org](http://www.decorativehardwoods.org).

73. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
74. ECIA - Electronic Components Industry Association; [www.ecianow.org](http://www.ecianow.org).
75. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
76. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
77. EOS/ESD - EOS/ESD Association, Inc.; Electrostatic Discharge Association; [www.esda.org](http://www.esda.org).
78. ESTA - Entertainment Services and Technology Association; [www.esta.org](http://www.esta.org).
79. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
80. FCI - Fluid Controls Institute; [www.fluidcontrolsinstitute.org](http://www.fluidcontrolsinstitute.org).
81. FGIA - Fenestration and Glazing Industry Alliance; <https://fgiaonline.org>.
82. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
83. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
84. FM Approvals - FM Approvals LLC; [www.fmapprovals.com](http://www.fmapprovals.com).
85. FM Global - FM Global; [www.fmglobal.com](http://www.fmglobal.com).
86. FRSA - Florida Roofing and Sheet Metal Contractors Association, Inc.; [www.floridarooft.com](http://www.floridarooft.com).
87. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
88. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
89. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
90. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
91. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
92. HMMA - Hollow Metal Manufacturers Association; (see NAAMM).
93. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
94. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
95. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
96. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
97. ICPA - International Cast Polymer Association (The); [www.theicpa.com](http://www.theicpa.com).
98. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
99. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
100. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
101. IES - Illuminating Engineering Society; [www.ies.org](http://www.ies.org).
102. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
103. IGMA - Insulating Glass Manufacturers Alliance; (see FGIA).
104. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.org](http://www.igshpa.org).
105. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
106. Intertek - Intertek Group; [www.intertek.com](http://www.intertek.com).
107. ISA - International Society of Automation (The); [www.isa.org](http://www.isa.org).
108. ISFA - International Surface Fabricators Association; [www.isfanow.org](http://www.isfanow.org).
109. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
110. ITU - International Telecommunication Union; [www.itu.int](http://www.itu.int).
111. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
112. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
113. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
114. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
115. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
116. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
117. MHI - Material Handling Industry; [www.mhi.org](http://www.mhi.org).
118. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
119. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).

120. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry, Inc.; [www.msshq.org](http://www.msshq.org).
121. NAAMM - National Association of Architectural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
122. NACE - NACE International; (National Association of Corrosion Engineers International); (see AMPP).
123. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
124. NAIMA - North American Insulation Manufacturers Association; [www.insulationinstitute.org](http://www.insulationinstitute.org).
125. NALP - National Association of Landscape Professionals; [www.landscapeprofessionals.org](http://www.landscapeprofessionals.org).
126. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
127. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
128. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
129. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
130. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
131. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
132. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
133. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
134. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
135. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
136. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
137. NFPA - NFPA International; (see NFPA).
138. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
139. NGA - National Glass Association; [www.glass.org](http://www.glass.org).
140. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
141. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
142. NOFMA - National Oak Flooring Manufacturers Association; (see NWFA).
143. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
144. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
145. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
146. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
147. NSI - Natural Stone Institute; [www.naturalstoneinstitute.org](http://www.naturalstoneinstitute.org).
148. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
149. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
150. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
151. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
152. NWRA - National Waste & Recycling Association; [www.wasterecycling.org](http://www.wasterecycling.org).
153. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
154. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).
155. PLASA - PLASA; [www.plasa.org](http://www.plasa.org).
156. PLIB - Pacific Lumber Inspection Bureau; [www.plib.org](http://www.plib.org).
157. PVCPA - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
158. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
159. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
160. RIS - Redwood Inspection Service; (see WWPFA).
161. SAE - SAE International; [www.sae.org](http://www.sae.org).
162. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
163. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
164. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
165. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).

166. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (see ASCE).
167. SIA - Security Industry Association; [www.securityindustry.org](http://www.securityindustry.org).
168. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
169. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
170. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
171. SMPTE - Society of Motion Picture and Television Engineers; [www.smppte.org](http://www.smppte.org).
172. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
173. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
174. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
175. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
176. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
177. SSPC - SSPC: The Society for Protective Coatings; (see AMPP).
178. STI/SPFA - Steel Tank Institute/Steel Plate Fabricators Association; [www.steeltank.com](http://www.steeltank.com).
179. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
180. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
181. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
182. TCNA - Tile Council of North America, Inc.; [www.tenatile.com](http://www.tenatile.com).
183. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.kbcdco.tema.org](http://www.kbcdco.tema.org).
184. TIA - Telecommunications Industry Association (The); [www.tiaonline.org](http://www.tiaonline.org).
185. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
186. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
187. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
188. TRI - Tile Roofing Industry Alliance; [www.tilerroofing.org](http://www.tilerroofing.org).
189. UL - Underwriters Laboratories Inc.; [www.ul.org](http://www.ul.org).
190. UL LLC - UL LLC; [www.ul.com](http://www.ul.com).
191. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
192. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
193. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
194. WA - Wallcoverings Association; [www.wallcoverings.org](http://www.wallcoverings.org).
195. WCLIB - West Coast Lumber Inspection Bureau; (see PLIB).
196. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
197. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).
198. WI - Woodwork Institute; [www.woodworkinstitute.com](http://www.woodworkinstitute.com).
199. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
200. WWPA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they are to mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut für Normung e.V.; [www.din.de](http://www.din.de).
2. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
3. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
4. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).
5. CPSC - U.S. Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
6. DOC - U.S. Department of Commerce; [www.commerce.gov](http://www.commerce.gov).
7. DOD - U.S. Department of Defense; [www.defense.gov](http://www.defense.gov).

8. DOE - U.S. Department of Energy; [www.energy.gov](http://www.energy.gov).
9. DOJ - U.S. Department of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov)
10. DOS - U.S. Department of State; [www.state.gov](http://www.state.gov).
11. EPA - United States Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
12. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
13. GPO - U.S. Government Publishing Office; [www.gpo.gov](http://www.gpo.gov).
14. GSA - U.S. General Services Administration; [www.gsa.gov](http://www.gsa.gov).
15. HUD - U.S. Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
16. LBNL - Lawrence Berkeley National Laboratory; Energy Technologies Area; [www.lbl.gov/](http://www.lbl.gov/).
17. NIST - National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
18. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
19. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
20. USACE - U.S. Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
21. USDA - U.S. Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
22. USDA - U.S. Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
23. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
24. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they are to mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from U.S. Government Publishing Office; [www.govinfo.gov](http://www.govinfo.gov).
2. DOD - U.S. Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.dsp.dla.mil/Specs-Standards/](http://www.dsp.dla.mil/Specs-Standards/).
3. DSCC - Defense Supply Center Columbus; (see FS).
4. FED-STD - Federal Standard; (see FS).
5. FS - Federal Specification; Available from DLA Document Services; [www.dsp.dla.mil/Specs-Standards/](http://www.dsp.dla.mil/Specs-Standards/).
  - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
  - b. Available from U.S. General Services Administration; [www.gsa.gov](http://www.gsa.gov).
  - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org](http://www.wbdg.org).
6. MILSPEC - Military Specification and Standards; (see DOD).
7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (see USAB).

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they are to mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. BEARHFTI; California Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; (see BHGS).
2. BHGS; State of California Bureau of Household Goods and Services; (Formerly: California Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation); [www.bhgs.dca.ca.gov](http://www.bhgs.dca.ca.gov).
3. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; [www.oal.ca.gov/publications/ccr/](http://www.oal.ca.gov/publications/ccr/).
4. CDPH; California Department of Public Health; Indoor Air Quality Program; [www.cdph.ca.gov/Programs/CCDCPHP/DEODC/EHLB/IAQ/Pages/Main-Page.aspx](http://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/EHLB/IAQ/Pages/Main-Page.aspx).
5. CPUC; California Public Utilities Commission; [www.cpuc.ca.gov](http://www.cpuc.ca.gov).
6. SCAQMD; South Coast Air Quality Management District; [www.aqmd.gov](http://www.aqmd.gov).
7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; <https://tfsweb.tamu.edu/>.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

## SECTION 016000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. The Work of This 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. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products unless otherwise indicated.
  - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in "Comparable Products" Article, 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. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
- 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 or substitution request, if applicable.
- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
  2. Data indicating compliance with the requirements specified in "Comparable Products" Article.
- E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."
- F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

### 1.3 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.
- 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 inconspicuous.
  2. Equipment Nameplates: Provide a permanent nameplate on each item of service- 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 equipment identification requirements.

### 1.4 COORDINATION

- A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

### 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 that products are undamaged and properly protected.

C. Storage:

1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
2. Store products to allow for inspection and measurement of quantity or counting of units.
3. Store materials in a manner that will not endanger Project structure.
4. Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.
5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

## 1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections are to 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 standard warranty form furnished by individual manufacturer for a particular product and issued in the name of Owner or endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of Owner or endorsed by manufacturer to 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 in the Project Manual, 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 Specifications establish salient characteristics of products.
- 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. 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.
  - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
5. 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 may additionally 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 the phrase "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 a 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 the following 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.
  2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. 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.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for a comparable product. Architect will notify Contractor of approval or rejection of proposed comparable product within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
  - 1. Architect's Approval of Submittal: Marked with approval notation from Architect's action stamp. See Section 013300 "Submittal Procedures."
  - 2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- C. Submittal Requirements, Two-Step Process: Approval by Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.
- D. Submittal Requirements, Single-Step Process: When acceptable to Architect, incorporate specified submittal requirements of individual Specification Section in combined submittal for comparable products. Approval by Architect of Contractor's request for use of comparable product and of individual submittal requirements will also satisfy other 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.
  - 3. Installation.
  - 4. Cutting and patching.
  - 5. Coordination of Owner's portion of the Work.
  - 6. Progress cleaning.
  - 7. Starting and adjusting.
  - 8. Protection of installed construction.
  - 9. Correction of the Work.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for coordination of, Owner's separate contracts, and 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.
  - 4. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

#### 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 PREINSTALLATION MEETINGS

- A. Cutting and Patching Conference: Conduct conference at 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. Inform Architect of scheduled meeting. 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 affected by cutting and patching operations.
  2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- B. Layout Conference: Conduct conference at Project site.
1. Prior to establishing layout of new and existing perimeter and structural column grid(s), review building location requirements. Review benchmark, control point, and layout and dimension requirements. Inform Architect of scheduled meeting. Require representatives of each entity directly concerned with Project layout to attend, including the following:
    - a. Contractor's superintendent.
  2. Review meanings and intent of dimensions, notes, terms, graphic symbols, and other layout information indicated on the Drawings.
  3. Review requirements for including layouts on Shop Drawings and other submittals.
  4. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

#### 1.4 INFORMATIONAL SUBMITTALS

#### 1.5 QUALITY ASSURANCE

- A. 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, or when encountering the need for cutting and patching of elements whose structural function is not known, 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.
  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.
  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.

- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. 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. Use materials that are not considered hazardous.
- C. 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.

## 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, gas service piping, 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. 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 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, submit a request for information to Architect in accordance with 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 and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- C. 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.
- D. 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.

### 3.4 INSTALLATION

- A. 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, unless otherwise indicated on Drawings.
- 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 satisfactory results as judged by Architect. 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 of type expected for Project.
- 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: 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 with manufacturer.
  - 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, as judged by Architect. Fit exposed connections together to form hairline joints.

### 3.5 CUTTING AND PATCHING

- A. 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 in accordance with 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 prevent 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, as judged by Architect. 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 eliminate 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, corner to corner of wall and edge to edge of ceiling. 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.

### 3.6 COORDINATION OF OWNER'S PORTION OF THE WORK

- A. Site Access: Provide access to Project site for Owner's construction personnel and Owner's separate contractors.
1. Provide temporary facilities required for Owner-furnished, Contractor-installed and Owner-furnished, Owner-installed products.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel and Owner's separate contractors.
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. Preinstallation Conferences: Include Owner's construction personnel and Owner's separate contractors at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### 3.7 PROGRESS CLEANING

- A. 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, in accordance with 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 in accordance with 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: 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. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- 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.

### 3.8 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."

### 3.9 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.

### 3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

ITC Board Room  
Chatham Area Transit  
19 August 2025

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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. List of incomplete items.
  - 4. Submittal of Project warranties.
  - 5. Final cleaning.
- B. Related Requirements:
  - 1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
  - 2. Section 013233 "Photographic Documentation" for submitting Final Completion construction photographic documentation.
  - 3. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
  - 4. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 5. Section 017900 "Demonstration and Training" for requirements to train Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

#### 1.2 DEFINITIONS

- A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

#### 1.3 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.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.

- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest-control inspection.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

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

#### 1.6 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 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 Architect. 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 Architect's signature for receipt of submittals.
  - 5. Submit testing, adjusting, and balancing records.
  - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 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 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect 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 reinspection 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.

## 1.7 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 in accordance with 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 will 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 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 reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

## 1.8 LIST OF INCOMPLETE ITEMS

- 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 lowest floor to highest floor, listed by room or space number.
  - 2. Organize items applying to each space by major element, including categories for ceilings, 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.
    - d. Name of Contractor.
    - e. Page number.

## 1.9 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. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. 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.
- D. 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.
- E. 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.

## 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 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. Clean flooring, removing debris, dirt, and staining; clean in accordance with manufacturer's instructions.
    - i. Vacuum and mop concrete.
    - j. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean in accordance with manufacturer's instructions if visible soil or stains remain.
    - k. 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.
    - l. Remove labels that are not permanent.

- m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - p. 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 Section 230130.52 "Existing HVAC Air-Distribution System Cleaning." Provide written report on completion of cleaning.
  - q. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
  - r. Clean strainers.
  - s. 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 017419 "Construction Waste Management and Disposal."

### 3.2 CORRECTION OF THE WORK

- A. Complete repair and restoration operations required by "Correction of the Work" Article in Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.
- B. Related Requirements:
  - 1. Section 017700 "Closeout Procedures" for general closeout procedures.

#### 1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
  - 2. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
      - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:
      - 1) Print each drawing, whether or not changes and additional information were recorded.
    - c. Final Submittal:
      - 1) Submit Record Digital Data Files and three set(s) of Record Digital Data File plots.
      - 2) Plot each drawing file, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
  - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

### 1.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or Construction Change Directive.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file.
  2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
  3. Refer instances of uncertainty to Architect for resolution.

4. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
  - a. See Section 013100 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
  - b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Format: Annotated PDF electronic file.
  3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  4. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

#### 1.4 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  3. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
  4. Note related Change Orders, Record Product Data, and Record Drawings where applicable.
- B. Format: Submit record specifications as annotated PDF electronic file.

#### 1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

## 1.6 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

## 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. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

#### 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 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.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
1. Inspect and discuss condition of construction to be selectively demolished.
  2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. 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.
- B. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- C. 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.
- D. 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:

- 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. 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:
- 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 ANSI/ASSP 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. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Survey of Existing Conditions: Record existing conditions by use of measured drawings preconstruction photographs or video and templates.
  - 1. Inventory and record the condition of items to be removed and salvaged.

### 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. Arrange to shut off utilities with utility companies.
  - 2. 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.
  - 3. 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. 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 4 hours 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.

### 3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- E. 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.
  - 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. 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.

END OF SECTION 024119

## SECTION 061000 - ROUGH CARPENTRY

### 1.1 SUMMARY

#### A. Section Includes:

1. Wood products.
2. Fire-retardant-treated lumber.
3. Dimension lumber framing.
4. Miscellaneous lumber.
5. Section 061600 "Sheathing" for sheathing, subflooring, and underlayment.

### 1.2 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal (38 mm actual) size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) size or greater but less than 5 inches nominal (114 mm actual) size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. Lumber grading agencies, and abbreviations used to reference them, include the following:
  1. NeLMA: Northeastern Lumber Manufacturers' Association.
  2. NLGA: National Lumber Grades Authority.
  3. SPIB: The Southern Pine Inspection Bureau.
  4. WCLIB: West Coast Lumber Inspection Bureau.
  5. WWPA: Western Wood Products Association.

### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
  2. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency in accordance with ASTM D5664.
  3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

### 1.4 INFORMATIONAL SUBMITTALS

- A. Material Certificates:

1. For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS

- A. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  1. Factory mark each piece of lumber with grade stamp of grading agency.
  2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
  3. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content:
  1. Boards: 19 percent.
  2. Dimension Lumber: **19 percent** unless otherwise indicated.

### 2.2 FIRE-RETARDANT-TREATED LUMBER

- A. General: Where fire-retardant-treated materials are indicated, materials are to comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested in accordance with ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
  1. Treatment is not to promote corrosion of metal fasteners.

2. Interior Type A: Treated materials are to have a moisture content of 28 percent or less when tested in accordance with ASTM D3201/D3201M at 92 percent relative humidity. Use where exterior type is not indicated.
  3. Design Value Adjustment Factors: Treated lumber is to be tested according to ASTM D5664 and design value adjustment factors are to be calculated according to ASTM D6841.
- C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency and other information required by authorities having jurisdiction.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece
- E. For exposed items indicated to receive a stained or natural finish, chemical formulations are not to bleed through, contain colorants, or otherwise adversely affect finishes.
- F. Application: Treat all rough carpentry unless otherwise indicated. Items indicated on Drawings, and the following:
1. Framing for raised platforms.
  2. Framing for stages.
  3. Concealed blocking.
  4. Wood cants, nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.
  5. Plywood backing panels.

## 2.3 DIMENSION LUMBER FRAMING

- A. Joists, Rafters, and Other Framing by Grade: Construction or No. 2 grade.
1. Species:
    - a. Hem-fir (north); NLGA.
    - b. Southern pine; SPIB.
    - c. Douglas fir-larch; WCLIB or WHPA.
    - d.
    - e. Spruce-pine-fir; NLGA.
    - f. Douglas fir-south; WHPA.
    - g. Hem-fir; WCLIB or WHPA.
    - h. Douglas fir-larch (north); NLGA.
    - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WHPA.
- B. Joists, Rafters, and Other Framing by Performance: Any species and grade with a modulus of elasticity of at least [1,500,000 psi (10 350 MPa)] [1,300,000 psi (8970 MPa)] [1,100,000 psi (7590 MPa)] [1,000,000 psi (6900 MPa)] [900,000 psi (6210 MPa)] and an extreme fiber stress in bending of at least [1000 psi (6.9 MPa)] [850 psi (5.86 MPa)] [700 psi (4.83 MPa)] [600 psi (4.14 MPa)] [500 psi (3.45 MPa)] for 2-inch nominal (38-mm actual) thickness and 12-inch nominal (286-mm actual) width for single-member use.

- C. Exposed Framing: Hand-select material indicated to receive a stained or natural finish for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

1. Species and Grade:

- a. As indicated above for load-bearing construction of same type.

## 2.4 MISCELLANEOUS LUMBER

- A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.
7. Utility shelving.

- B. Dimension Lumber Items: Construction or No. 2 Standard, Stud, or No. 3 grade lumber of any species. any of the following species:

1. Hem-fir (north); NLGA.
2. Mixed southern pine or southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
6. Western woods; WCLIB or WWPA.
7. Northern species; NLGA.
8. Eastern softwoods; NeLMA.

- C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
4. Eastern softwoods; No. 2 Common grade; NeLMA.
5. Northern species; No. 2 Common grade; NLGA.
6. Western woods; Construction or No. 2 Common] grade; WCLIB or WWPA.

## 2.5 METAL FRAMING ANCHORS

- A. Joist Ties: Flat straps, with holes for fasteners, for tying joists together over supports.

1. Width: [3/4 inch (19 mm)] [1-1/4 inches (32 mm)].
  2. Thickness: [0.050 inch (1.3 mm)] [0.062 inch (1.6 mm)].
  3. Length: [16 inches (400 mm)] [24 inches (600 mm)]
- B. Floor-to-Floor Ties: Flat straps, with holes for fasteners, for tying upper floor wall studs to band joists and lower floor studs, 1-1/4 inches (32 mm) wide by 0.050 inch (1.3 mm) thick by 36 inches (914 mm) long.
- C. Hold-Downs: Brackets for bolting to wall studs and securing to foundation walls with anchor bolts or to other hold-downs with threaded rods and designed with first of two bolts placed seven bolt diameters from reinforced base.
1. Bolt Diameter: [5/8 inch (15.8 mm)] [3/4 inch (19 mm)].
  2. Width: [2-1/2 inches (64 mm)] [3-3/16 inches (81 mm)].
  3. Body Thickness: [0.108 inch (2.8 mm)] [0.138 inch (3.5 mm)].
  4. Base Reinforcement Thickness: [0.108 inch (2.8 mm)] [0.239 inch (6.1 mm)].
- D. Wall Bracing:
1. T-shaped bracing made for letting into studs in saw kerf, 1-1/8 inches (29 mm) wide by 9/16 inch (14 mm) deep by 0.034 inch (0.85 mm) thick with hemmed edges.
  2. Angle bracing made for letting into studs in saw kerf, 15/16 by 15/16 by 0.040 inch (24 by 24 by 1 mm) thick with hemmed edges.
- E. Materials: Unless otherwise indicated, fabricate from the following materials:
1. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 (Z180) coating designation.
    - a. Use for interior locations unless otherwise indicated.
  2. Heavy-Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.
    - a. Use for wood-preservative-treated lumber and where indicated.
  3. Stainless steel bars and shapes complying with ASTM A276/A276M,
    - a. Use for exterior locations and where indicated.

## 2.6 MISCELLANEOUS MATERIALS

- A. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- E. Install sill sealer gasket/termite barrier in accordance with manufacturer's written instructions at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or joist locations.
- F. Do not splice structural members between supports unless otherwise indicated.
- G. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- H. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
  - 1. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. (9.3 sq. m) and to solidly fill space below partitions.
- I. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- J. Comply with AWPAC M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use inorganic boron for items that are continuously protected from liquid water.
  - 2. Use copper naphthenate for items not continuously protected from liquid water.
- K. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.10.1, "Fastening Schedule," in ICC's International Building Code (IBC).
  - 2. ICC-ES evaluation report for fastener.

- L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

### 3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for[ **screeding or**] attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach wood blocking to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

### 3.3 INSTALLATION OF FLOOR JOIST FRAMING

- A. General: Install floor joists with crown edge up and support ends of each member with not less than 1-1/2 inches (38 mm) of bearing on wood or metal, or 3 inches (76 mm) on masonry. Attach floor joists as follows:
  - 1. Where supported on wood members, by using metal framing anchors.
  - 2. Where framed into wood supporting members, by using wood ledgers as indicated or, if not indicated, by using metal joist hangers.
- B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 48 inches (1200 mm).
- C. Do not notch in middle third of joists; limit notches to one-sixth depth of joist, one-third at ends. Do not bore holes larger than one-third depth of joist; do not locate closer than 2 inches (50 mm) from top or bottom.
- D. Provide solid blocking of 2-inch nominal (38-mm actual) thickness by depth of joist at ends of joists unless nailed to header or band.
- E. Lap members framing from opposite sides of beams, girders, or partitions not less than 4 inches (102 mm) or securely tie opposing members together. Provide solid blocking of 2-inch nominal (38-mm actual) thickness by depth of joist over supports.
- F. Anchor members paralleling masonry with 1/4-by-1-1/4-inch (6.4-by-32-mm) metal strap anchors spaced not more than 96 inches (2438 mm) o.c., extending over and fastening to three joists. Embed anchors at least 4 inches (102 mm) into grouted masonry with ends bent at right angles and extending 4 inches (102 mm) beyond bend.
- G. Provide solid blocking between joists under jamb studs for openings.
- H. Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above.

1. Provide triple joists separated as above, under partitions receiving ceramic tile and similar heavy finishes or fixtures.
- I. Provide bridging of type indicated below, at intervals of 96 inches (2438 mm) o.c., between joists.
  1. Diagonal wood bridging formed from bevel-cut, 1-by-3-inch nominal- (19-by-64-mm actual-) size lumber, double-crossed and nailed at both ends to joists.
  2. Steel bridging installed to comply with bridging manufacturer's written instructions.

END OF SECTION 061000

## DIVISION 066100 SOLID SURFACE SHEET

### PART 1 – GENERAL

#### 1.01 SUMMARY

- A. Solid Surface Sheet

#### 1.02 REFERENCES

- A. American National Standards Institute (ANSI)
- B. International Cast Polymer Alliance (ICPA)
- C. National Fire Protection Association (NFPA)
- D. Greenguard

#### 1.03 SYSTEM DESCRIPTION

- A. Provide solid surface sheet that conforms to the following requirements of regulatory agencies.
  - 1. Provide solid surface material that conforms to ANSI/ICPA SS-1 for workmanship and finish, structural integrity, and material characteristics.
  - 2. Fungal and Bacterial Resistance: Provide Solid Surface that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.
  - 3. Fire Performance Characteristics: Provide Solid Surface Sheet conforming with the NFPA class A fire rating as determined by ASTM E-84.
  - 4. Provide solid surface material that meets the emission level requirements of Greenguard certification, with results satisfying the chemical emissions requirement of California Section 1350.
  - 5. Provide solid surface material that meets the requirements of Greenguard Children and School Chemical emissions level.

#### 1.04 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each type of sheet specified.
- B. Samples: Color samples a minimum of 1.5" x 3" indicating color and pattern.
- C. Manufacturer's Installation Instructions: Printed installation instructions for each type of sheet specified.

#### 1.05 DELIVERY, STORAGE, & HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite.

- B. Inspect materials at delivery to assure that specified products have been received.
- C. Store in original packaging in an interior climate-controlled location away from direct sunlight.

1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Products must be installed in an interior climate-controlled environment.

1.07 WARRANTY

- A. Standard Solid Surface Limited 10 Year Warranty against material and manufacturing defects.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Basis-Of-Design Product: Inpro Corporation, Endurant
  - 1. Koroseal
  - 2. CS Acrovyn

2.02 MANUFACTURED UNITS

- A. Solid Surface Sheet
  - 1. 1/4" thickness
    - a. Sizes, width x length
      - 1) 60" wide x 84" or 96" lengths
    - b. Edge Options:
      - 1) Eased

2.03 ACCESSORIES

- A. Trim
  - 1. Inside Corner Wedge Molding, 15/16"
  - 2. Inside Corner Molding - L-Shaped, 1" x 1"
  - 3. Batten Strip, 2 1/2"
  - 4. Outside Corner Molding - L-Shaped 1" x 1"
  - 5. Perimeter Trim, 2 1/2" x 1/2"
  - 6. Outside Corner Perimeter Trim, 2 1/2" x 1"
  - 7. Panel Molding, 2 1/4" x 13/16"
  - 8. Wall Base, 5" x 1/2"
  - 9. Beveled Edge Trim, 1 3/16" x 1/2"

- B. Solid Surface Bonding Adhesive

- C. Adhesive Cartridge Dispenser
- D. Adhesive Mixing Tips
- E. Silicone Adhesive/Sealant
- F. Pick Resistant Color Coordinated Caulk (Sealant)

## 2.03 MATERIALS

- A. Solid Surface: Solid Surface material shall be manufactured from polyester/acrylic blended resins with natural filler material.

## 2.05 FINISHES

- A. Select color from Solid Surface color palette.

# PART 3 – EXECUTION

## 3.01 EXAMINATION

- A. Examine areas and conditions in which wall cladding will be installed.

## 3.02 PREPARATION

- A. Surface Prep: Prior to installation, clean the substrate to remove dust, debris and loose particles. Ensure the substrate is sound and per project plans.
- B. Acclimate product in temperatures between 65°F and 80°F and a humidity level less than 80% 24 hours in advance of installation.
- C. The area of installation must temperature and humidity controlled for at least 48 hours after installation.

## 3.03 INSTALLATION

- A. General: Install components plumb and level, scribe adjacent finishes, in accordance with approved shop drawings and recommended installation instructions.

## 3.04 CLEANING

- A. At completion of the installation, clean surfaces in accordance with the manufacturer's clean-up and maintenance instructions.

END OF SECTION 066100

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Nonstaining silicone joint sealants.
3. Urethane joint sealants.
4. Mildew-resistant joint sealants.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples: For each kind and color of joint sealant required.
- C. 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. Product test reports.

#### 1.5 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 years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. 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, 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.

### 2.3 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.
- B. 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.

### 2.4 URETHANE JOINT SEALANTS

- A. Urethane, S, NS, 25, NT: Single-component, nonsag, nontraffic-use, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
- B. Urethane, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C 920, Type S, Grade P, Class 25, Uses T and NT.

### 2.5 MILDEW-RESISTANT JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

### 2.6 JOINT-SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) Type O (open-cell material) Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

## 2.7 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.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 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 laitance and form-release agents from concrete.
  - 2. 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.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

### 3.2 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. 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.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. 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.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

### 3.3 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.
1. Joint Locations:
    - a. Isolation joints in cast-in-place concrete slabs.
    - b. Control and expansion joints in tile flooring.
  2. Joint Sealant: Urethane, S, P, 25, T, 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 nontraffic surfaces.
1. Joint Locations:
    - a. Control and expansion joints on exposed interior surfaces of exterior walls.
    - b. Tile control and expansion joints.
  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 nontraffic surfaces not subject to significant movement.
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.
- 2. Joint Sealant: Acrylic latex.
- 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Concealed mastics.
  - 1. Joint Locations:
    - a. Aluminum thresholds.
    - b. Sill plates.
  - 2. Joint Sealant: Butyl-rubber based.

END OF SECTION 079200

## SECTION 081213 - HOLLOW METAL FRAMES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Interior standard steel frames.

B. Related Requirements:

1. 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 NAAMM-HMMA 803 or 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 ACTION SUBMITTALS

A. Product Data:

1. Interior standard steel frames.

B. Product Data Submittals: For each product.

1. Include construction details, material descriptions, and finishes.

C. 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 anchorages, joints, field splices, and connections.
6. Details of accessories.
7. Details of moldings, removable stops, and glazing.

- D. Samples for Initial Selection: For hollow-metal frames with factory-applied color finishes.
- 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.

## 1.5 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 nonvented 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 HOLLOW METAL FRAMES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Ceco Door; AADG, Inc.; ASSA ABLOY.
  - 2. Curries, AADG, Inc.; ASSA ABLOY Group.
  - 3. National Custom Hollow Metal Doors & Frames.

### 2.2 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 Standard Steel Frames: SDI A250.8. At locations indicated in the Door and Frame Schedule on Drawings.
  - 1. Materials: Uncoated steel sheet, minimum thickness of 0.042 inch.
  - 2. Construction: Slip-on drywall.
  - 3. Exposed Finish: Prime.

### 2.3 BORROWED LITES

- A. Fabricate of steel sheet, minimum thickness of .

- B. Construction: .
- 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 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.

## 2.4 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. Postinstalled 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. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
  - 1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized according to ASTM A153/A153M, Class B.

## 2.5 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153/A153M.
- 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."

## 2.6 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. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
  - 2. 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 on Drawings, and templates.
  - 1. Reinforce frames to receive nontemplated, 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.

## 2.7 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.

## 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 nontemplated, 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 postinstalled expansion anchors.
  - 1. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
- E. Solidly pack mineral-fiber insulation inside frames.
- F. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
- G. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
- H. 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.
- I. 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 081213

## SECTION 081216 - ALUMINUM FRAMES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Interior aluminum frames for doors installed in gypsum board partitions.
2. Interior aluminum frames for glazing installed in gypsum board partitions.

#### 1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For aluminum frames:

1. Include elevations, sections, and installation details for each wall-opening condition.

C. Samples: For each exposed product and for each color and texture specified.

### PART 2 - PRODUCTS

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

1. Avalon International Aluminum LLC.
2. Modulex Products, Inc.
3. RACO Interiors.
4. Or Approved Equal

#### 2.2 PERFORMANCE REQUIREMENTS

- a. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3-inch wg.

#### 2.3 INTERIOR ALUMINUM DOORS, DOOR FRAMES, AND GLAZING FRAMES

- A. Aluminum Framing: ASTM B221, with alloy and temper required to suit structural and finish requirements, and not less than 0.062 inch thick.
- B. Door Frames: Extruded aluminum, reinforced for hinges, strikes, and closers.
- C. Glazing Frames: Extruded aluminum, for indicated glass thickness.

- D. Trim: Extruded aluminum, not less than 0.062 inch thick; removable, snap-in casing trim glazing stops and door stops, without exposed fasteners.
- E. Doors:
  - 1. Manufacturer's standard, factory-assembled, 1-3/4-inch-thick, aluminum-framed door construction.
    - a. Door Operation: Swinging.
- F. Door Finish: Match frame and trim finish.
  - 1. Color: As selected by Architect from manufacturer's full range.
- G. Frame and Trim Finish: Clear-anodized aluminum.

## 2.4 ACCESSORIES

- A. Fasteners: Aluminum, nonmagnetic, stainless steel or other noncorrosive metal fasteners compatible with frames, stops, panels, reinforcement plates, hardware, anchors, and other items being fastened.
- B. Door Silencers: Manufacturer's standard continuous mohair, wool pile, or vinyl seals in black color.
- C. Glazing Gaskets: Manufacturer's standard extruded or molded rubber or plastic, to accommodate glazing thickness indicated; in black.
- D. Glass: Fully Tempered Float Glass ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear), Quality-Q3. 39 STC.
- E. Door Hardware: As specified in Section 087100 "Door Hardware."

## 2.5 FABRICATION

- A. Provide concealed corner reinforcements and alignment clips for accurately fitted hairline joints at butted and mitered connections.
- B. Factory prepare aluminum frames to receive templated mortised hardware; include cutouts, reinforcements, mortising, drilling, and tapping, according to the Door Hardware Schedule and templates furnished as specified in Section 087100 "Door Hardware."
  - 1. Locate hardware cutouts and reinforcements as required by fire-rated label for assembly.
- C. Fabricate frames for glazing with removable stops to allow glazing replacement without dismantling frame.
  - 1. Locate removable stops on the inside of spaces accessed by keyed doors.
- D. Fabricate components to allow secure installation without exposed fasteners.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install aluminum frames plumb, rigid, properly aligned, and securely fastened in place; according to manufacturer's written instructions.
- B. Install frame components in the longest possible lengths with no piece less than 48 inches; components 72 inches or shorter shall be one piece.
- C. Glass: 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 and aluminum-frame manufacturer's written instructions.
- D. Doors: Install doors aligned with frames and fitted with required hardware.
- E. Door Hardware: Install according to Section 087100 "Door Hardware" and aluminum-frame manufacturer's written instructions.

### 3.2 ADJUSTING

- A. Clean exposed frame surfaces promptly after installation, using cleaning methods recommended in writing by frame manufacturer and according to AAMA 609 and AAMA 610.
- B. Touch Up: Repair marred frame surfaces to blend inconspicuously with adjacent unrepared surface[ **so touchup is not visible from a distance of 48 inches**] as viewed by Architect. Remove and replace frames with damaged finish that cannot be satisfactorily repaired.

END OF SECTION 081216

## SECTION 081416 - FLUSH WOOD DOORS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Solid-core five-ply flush wood doors and transom panels for opaque finish.
- B. Related Requirements:
  - 1. Section 088000 "Glazing" for glass view panels in flush wood doors.

#### 1.2 ACTION SUBMITTALS

- A. Product Data Submittals: For each product, including the following:
  - 1. Door core materials and construction.
  - 2. Door edge construction
  - 3. Door face type and characteristics.
  - 4. Door louvers.
  - 5. Door trim for openings.
  - 6. Door frame construction.
  - 7. Factory-machining criteria.
  - 8. Factory-priming specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:
  - 1. Door schedule indicating door location, type, size, and swing.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Special warranties.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

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

## 1.6 FIELD CONDITIONS

### A. Environmental Limitations:

1. 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 temperature and relative humidity at levels designed for building occupants for the 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. Delamination of veneer.
  - b. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
  - c. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
2. Warranty also includes 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 SOURCE LIMITATIONS

- #### A. Obtain flush wood doors from single manufacturer.

### 2.2 FLUSH WOOD DOORS AND FRAMES, GENERAL

- #### A. Quality Standard: In addition to requirements specified, comply with

1. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with the Contract Documents in addition to those of the referenced quality standard.

### 2.3 SOLID-CORE FIVE-PLY FLUSH WOOD DOORS FOR OPAQUE FINISH

- #### A. Interior Doors, Solid-Core Five-Ply for Opaque Finish:

1. Performance Grade: ANSI/WDMA I.S. 1A Extra Heavy Duty.
2. ANSI/WDMA I.S. 1A Quality Grade: Custom.
3. Faces: Hardboard or MDF.

- a. Apply MDO to directly to high-density hardboard crossbands.
  - b. Hardboard Faces: ANSI A135.4, Class 1 (tempered) or Class 2 (standard).
  - c. MDF Faces: ANSI A208.2, Grade 150 or Grade 160.
4. Core for Non-Fire-Rated Doors:
- a. Construction: Five plies, hot-pressed bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before veneering.

## 2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated.
1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
  2. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied.
1. Locate hardware to comply with DHI-WDHS-3.
  2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
  3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
  4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.
  5. 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."

## 2.5 FACTORY PRIMING

- A. Doors for Opaque Finish: Factory prime faces, all four edges, edges of cutouts, and mortises with one coat of wood primer specified in Section 099123 "Interior Painting."

## 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. Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Install frames level, plumb, true, and straight.
  - 1. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
  - 2. Anchor frames to anchors or blocking built in or directly attached to substrates.
    - a. Secure with countersunk, concealed fasteners and blind nailing.
    - b. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.
      - 1) For factory-finished items, use filler matching finish of items being installed.
- D. Job-Fitted Doors:
  - 1. Align and fit doors in frames with uniform clearances and bevels as indicated below.
    - a. Do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors.
  - 2. Machine doors for hardware.
  - 3. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
  - 4. Clearances:
    - a. Provide 1/8 inch at heads, jambs, and between pairs of doors.
  - 5. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.

### 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 087100 - DOOR HARDWARE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
  - 1. Swinging doors.
  - 2. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
  - 1. Mechanical door hardware.
  - 2. Cylinders specified for doors in other sections.
- C. Related Sections:
  - 1. Division 08 Section "Hollow Metal Doors and Frames".
  - 2. Division 08 Section "Flush Wood Doors".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
  - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
  - 2. ICC/IBC - International Building Code.
  - 3. NFPA 70 - National Electrical Code.
  - 4. NFPA 80 - Fire Doors and Windows.
  - 5. NFPA 101 - Life Safety Code.
  - 6. NFPA 105 - Installation of Smoke Door Assemblies.
  - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
  - 1. ANSI/BHMA Certified Product Standards - A156 Series.
  - 2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
  - 3. ANSI/UL 294 - Access Control System Units.
  - 4. UL 305 - Panic Hardware.

5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
  - 3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
    - h. Warranty information for each product.
  - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- D. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
  1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
  1. Function of building, purpose of each area and degree of security required.
  2. Plans for existing and future key system expansion.
  3. Requirements for key control storage and software.
  4. Installation of permanent keys, cylinder cores and software.
  5. Address and requirements for delivery of keys.

- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
  - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
  - 3. Review sequence of operation narratives for each unique access controlled opening.
  - 4. Review and finalize construction schedule and verify availability of materials.
  - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

#### 1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

## 1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

## 1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
  - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

## 2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
    - a. Two Hinges: For doors with heights up to 60 inches
    - b. Three Hinges: For doors with heights 61 to 90 inches
    - c. Four Hinges: For doors with heights 91 to 120 inches
    - d. For doors with heights more than 120 inches provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches
  2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
    - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
    - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
  3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
    - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
  4. Hinge Options: Comply with the following:
    - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
  5. Manufacturers:
    - a. Hager Companies (HA) - BB Series, 5 knuckle.
    - b. McKinney (MK) - TA/T4A Series, 5 knuckle.
    - c. dormakaba Best (ST) - F/FBB Series, 5 knuckle.
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
1. Manufacturers:
    - a. Pemko (PE).

## 2.3 DOOR OPERATING TRIM

- A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.
  - 1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
  - 2. Furnish dust proof strikes for bottom bolts.
  - 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
  - 4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
  - 5. Manufacturers:
    - a. Door Controls International (DC).
    - b. Rockwood (RO).
    - c. Trimco (TC).

## 2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
  - 1. Threaded mortise cylinders with rings and cams to suit hardware application.
  - 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  - 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
  - 4. Tubular deadlocks and other auxiliary locks.
  - 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
  - 6. Keyway: Manufacturer's Standard.
- C. Keying System: Each type of lock and cylinders to be factory keyed.
  - 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
  - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
  - 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- D. Key Quantity: Provide the following minimum number of keys:
  - 1. Change Keys per Cylinder: Two (2)
  - 2. Master Keys (per Master Key Level/Group): Five (5).
  - 3. Construction Keys (where required): Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

## 2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Commercial Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed.

1. Locks are to be non-handed and fully field reversible.
2. Manufacturers:
  - a. Arrow Locks (AW) - QL Series.
  - b. Corbin Russwin Hardware (RU) - CL3500 Series.
  - c. Yale Commercial (YA) 4700LN Series.
  - d. No Substitution.

## 2.6 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

## 2.7 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
  2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
  3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
  4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
  5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
    - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
  6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
  7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
  8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
  9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
  10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
1. Manufacturers:
    - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
    - b. Sargent Manufacturing (SA) - 80 Series.
    - c. Yale (YA) - 7000 Series.
    - d. No Substitution.

## 2.8 DOOR CLOSERS

### A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

### B. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Manufacturers:
  - a. Corbin Russwin Hardware (RU) - DC6000 Series.
  - b. Norton Rixson (NO) - 8500 Series.
  - c. Sargent Manufacturing (SA) - 1431 Series.
  - d. Yale Commercial (YA) - 3500 Series.
  - e. No Substitution.

## 2.9 ARCHITECTURAL TRIM

### A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
  - a. Stainless Steel: 300 grade, 050-inch thick.
5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:
  - a. Hiawatha, Inc. (HI).
  - b. Rockwood (RO).
  - c. Trimco (TC).

## 2.10 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
  1. Manufacturers:
    - a. Hiawatha, Inc. (HI).
    - b. Rockwood (RO).
    - c. Trimco (TC).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
  1. Manufacturers:

- a. Norton Rixson (RF).
- b. Rockwood (RO).
- c. Sargent Manufacturing (SA).

## 2.11 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
  1. National Guard Products (NG).
  2. Pemko (PE).
  3. Reese Enterprises, Inc. (RE).

## 2.12 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

## 2.13 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

### 3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
  - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. DHI TDH-007-20: Installation Guide for Doors and Hardware.

3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
  4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

### 3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

### 3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.

- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

### 3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

### 3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

- B. Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. YA - ASSA ABLOY ACCENTRA, formerly known as Yale
5. OT - Other
6. RF - Rixson
7. SA - Sargent

### **Hardware Sets**

#### **Set: 1.0**

Doors: 001A, 001B

Description: PR - PANIC - CLASS

6 Hinge, Full Mortise, Hvy Wt

T4A3786 4-1/2" x 4-1/2"

US26D MK

|                              |                           |                 |
|------------------------------|---------------------------|-----------------|
| 1 Rim Exit Device, Classroom | DG163 AD8504 Less Pull    | US32D SA        |
| 1 Rim Exit Device, Exit Only | AD8510 EO                 | US32D SA        |
| 1 Cylinder                   | DG163 980C1               | US26D SA        |
| 1 Flush Bolt(Inactive Leaf)  | P3512                     | 689 YA          |
| 2 Surface Closer             | 3301 TBGN Reg / PA as req | 689 YA          |
| 2 Pull                       | RM3411-36 Mtg-Type 12XHD  | US32- RO<br>316 |
| 2 Door Stop                  | 409 / 446 as required     | US26D RO        |
| 2 Silencer                   | 608                       | RO              |

**Set: 2.0**

Doors: 002A

Description: PR - OFF

|                               |                           |              |
|-------------------------------|---------------------------|--------------|
| 6 Hinge, Full Mortise, Hvy Wt | T4A3786 4-1/2" x 4-1/2"   | US26D MK     |
| 1 Office/Entry Lock           | PB 4704LN                 | 1 Entry Lock |
| 1 Cylinder                    | DG163 980C1               | US26D SA     |
| 1 Flush Bolt(Inactive Leaf)   | P3512                     | 689 YA       |
| 2 Surface Closer              | 3301 TBGN Reg / PA as req | 689 YA       |
| 2 Door Stop                   | 409 / 446 as required     | US26D RO     |
| 2 Silencer                    | 608                       | RO           |

**Set: 3.0**

Doors: 002B, 002C

Description: SGL - OFF

|                       |                           |          |
|-----------------------|---------------------------|----------|
| 3 Hinge, Full Mortise | TA2714 4-1/2" x 4-1/2"    | US26D MK |
| 1 Office/Entry Lock   | PB 4704LN                 | 626 YA   |
| 1 Cylinder            | Match Owner's keyway      | US32D OT |
| 1 Surface Closer      | 3301 TBGN Reg / PA as req | 689 YA   |
| 1 Door Stop           | 409 / 446 as required     | US26D RO |
| 3 Silencer            | 608                       | RO       |

END OF SECTION 087100

## SECTION 092216 - NON-STRUCTURAL METAL FRAMING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Framing systems.
  - 2. Suspension systems.

#### 1.2 ACTION SUBMITTALS

- A. Product Data:
  - 1. Framing systems.
  - 2. Suspension systems.
- B. Delegated Design Submittal: For seismic restraint of ceiling systems.
  - 1. Include design calculations for seismic restraints and hurricane force resisting systems as required for the project. Include analysis data signed and seal by the qualified professional engineer responsible for their preparation.

#### 1.3 INFORMATIONAL SUBMITTALS

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

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Notify manufacturer of damaged materials received prior to installation.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling as required by AISI S202, "Code of Standard Practice for Cold-Formed Steel Structural Framing."

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Suspended ceiling shall be designed to meet Seismic Design Category D.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.
- C. Horizontal Deflection: For composite wall assemblies, limited to 1/240 of the wall height based on horizontal loading of 5 lbf/sq. ft..
- D. Design framing systems in accordance with AISI S220, "North American Specification for the Design of Cold-Formed Steel Framing - Nonstructural Members," unless otherwise indicated.
- E. Design Loads: As indicated on architectural Drawings or 5 lbf/sq. ft. minimum as required by the IBC.
- F. Design framing systems to accommodate deflection of primary building structure and construction tolerances.

### 2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with AISI S220 for conditions indicated.
  - 1. Steel Sheet Components: Comply with AISI S220 requirements for metal unless otherwise indicated
  - 2. Protective Coating: Comply with ASTM C645; ASTM A653/A653M, G40; or coating with equivalent corrosion resistance. Galvannealed products are unacceptable.
    - a. Coating demonstrates equivalent corrosion resistance with an evaluation report acceptable to authorities having jurisdiction.
- B. Studs and Track: AISI S220.
  - 1. Minimum Base-Steel Thickness: As required by performance requirements for horizontal deflection.
  - 2. Depth: As indicated on Drawings.
- C. High-Strength Steel Studs and Tracks: Roll-formed with surface deformations to stiffen the framing members.
  - 1. Minimum Base-Steel Thickness: As required by horizontal deflection performance requirements.
  - 2. Depth: As indicated on Drawings.
- D. 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 minimum vertical movement.
  2. Single Long-Leg Track System: 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. 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.
- E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Steel Thickness: 0.0296 inch.
- F. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-steel thickness, with minimum 1/2-inch-wide flanges.
1. Depth: 1-1/2 inches.
  2. 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:
1. Minimum Base-Steel Thickness: As indicated on Drawings.
  2. Depth: As indicated on Drawings.
- H. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission.
1. Configuration: Asymmetrical or hat shaped.
- I. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges. Minimum, designed to meet project loads.
1. Depth: 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 A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

## 2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A641/A641M, 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. Power-Actuated Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- C. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

- D. Flat Hangers: Steel sheet, 1 by 3/16 inch by length indicated.
- E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch and minimum 1/2-inch-wide flanges.
  - 1. Depth: 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.

## 2.4 GRID SUSPENSION SYSTEMS

- A. Grid Suspension Systems for Gypsum Board Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.

## 2.5 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 D226/D226M, Type I (No. 15 asphalt felt), nonperforated.
  - 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

### 3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C754.

1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C841 that apply to framing installation.
  2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C1063 that apply to framing installation.
  3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C844 that apply to framing installation.
  4. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 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 INSTALLATION OF FRAMING SYSTEMS

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- 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. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
- 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 INSTALLATION OF SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
1. Carrying Channels (Main Runners): 48 inches o.c.
  2. 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 spacings 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. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

### 3.6 INSTALLATION OF GRID SUSPENSION SYSTEMS

- A. 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.

### 3.7 FIELD QUALITY CONTROL

- A. 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 the following:

1. Gypsum wallboard.
2. Gypsum ceiling board.

B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.

#### 1.3 MOCKUPS

A. 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. Build mockups for the following:
  - a. Each level of gypsum board finish indicated for use in exposed locations.
  - b. Each texture finish indicated.
2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
3. Simulate finished lighting conditions for review of mockups.
4. 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 C840 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 SOURCE LIMITATIONS

- A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

### 2.2 PERFORMANCE REQUIREMENTS

- A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.

### 2.3 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.

### 2.4 INTERIOR GYPSUM BOARD

- A. Gypsum Board, Type X: ASTM C1396/C1396M.
  - 1. Thickness: 5/8 inch.
  - 2. Long Edges: Tapered.
- B. Gypsum Ceiling Board: ASTM C1396/C1396M.
  - 1. Thickness: 1/2 inch.
  - 2. Long Edges: Tapered.
- C. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.
  - 1. Core: 5/8 inch, Type X.
  - 2. Long Edges: Tapered.
  - 3. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

## 2.5 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
  - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
  - 2. Shapes:
    - a. Cornerbead.
    - 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.

## 2.6 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.
- B. Joint Tape:
  - 1. Interior Gypsum Board: Paper.
  - 2. 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, rounded or 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.
    - a. Use setting-type compound for installing paper-faced metal trim accessories.
  - 3. Fill Coat: For second coat, use setting-type, sandable topping compound.
  - 4. Finish Coat: For third coat, use setting-type, sandable topping 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. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
  - 1. Use screws complying with ASTM C954 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.
- C. Sound-Attenuation Blankets: ASTM C665, 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.

### 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 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840.
- 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 C919 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 INSTALLATION OF INTERIOR GYPSUM BOARD

- A. 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.
  - 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.

### 3.4 INSTALLATION OF 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 in accordance with ASTM C840 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. LC-Bead: Use at exposed panel edges.
  - 3. L-Bead: Use where indicated on Drawings.
  - 4. U-Bead: Use at exposed panel edges.
  - 5. Curved-Edge Cornerbead: Use at curved openings.

### 3.5 FINISHING OF 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 in accordance with ASTM C840:
  - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  - 2. Level 2: Panels that are substrate for tile.
  - 3. 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."
- E. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
- F. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.

### 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 095113 - ACOUSTICAL PANEL CEILINGS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes:
  - 1. Acoustical panels
  - 2. Metal Suspension System
  - 3. Metal edge moldings and trim

#### 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.

#### 1.3 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. Suspended ceiling components.
  - 2. Structural members to which suspension systems will be attached.
  - 3. Size and location of initial access modules for acoustical panels.
  - 4. Items penetrating finished ceiling including the following:
    - a. Lighting fixtures.
    - b. Air outlets and inlets.
    - c. Speakers.
    - d. Sprinklers.
    - e. Access panels.
  - 5. Perimeter moldings.
- B. Qualification Data: For testing agency.
- C. Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.
- D. Field quality-control reports.

#### 1.4 CLOSEOUT SUBMITTALS

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

## 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Acoustical Ceiling Panels: Full-size panels equal to 2 percent of quantity installed.
  - 2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

## 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to NVLAP for testing indicated.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages 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 panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

## 1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, 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 panel ceiling installation.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to Cisca Seismic Zones 3 & 4 – Ceilings and Interior Systems Construction Association Guidelines for Seismic Restraint for Direct Hung Suspended Ceiling Assemblies – Category “D”.
- B. Seismic Loads: Design and size components to withstand seismic loads in accordance with the International Building Code, Section 1621 for **Category D, E and F.**

- C. 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: Comply with ASTM E 1264 for Class A materials.
  - 2. Smoke-Developed Index: 50 or less.

## 2.2 ACOUSTICAL PANELS

- A. Source Limitations:
  - 1. Acoustical Ceiling Panel: Obtain each type from single source from single manufacturer.
  - 2. Suspension System: Obtain each type from single source from single manufacturer.
- B. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system from single source from single manufacturer.
- C. Glass-Fiber-Based Panels: Made with binder containing no urea formaldehyde.
- D. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.
  - 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface according to ASTM E 795.
- E. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
  - 1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

## 2.3 ACOUSTICAL PANELS: ACT-1

- A. Manufacturers:
  - 1. Armstrong World Industries, Inc.
  - 2. CertainTeed; Saint Gobain
  - 3. USG Corporation
- B. Classification: Type A, Form A1.2, Pattern E.
- C. Surface Texture: Fine Texture.
- D. Composition: Mineral Fiber.
- E. Color: White.

- F. Edge/Joint Detail: Beveled Tegalay Lay-in 9/16.
- G. Thickness: 3/4 inch.
- H. Modular Size: 24 by 24 inches.
- I. Light Reflectance: 0.81.
- J. Ceiling Attenuation Class (CAC): 35.
- K. Noise Reduction Coefficient (NRC): 0.60.
- L. Location: See Architectural Drawings.

#### 2.4 METAL SUSPENSION SYSTEMS, GENERAL

- A. Recycled Content: Postconsumer recycled content 53% and pre-consumer recycled content 10%.
- B. Metal Suspension-System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
  - 1. High-Humidity Finish: Comply with ASTM C 635/C 635M requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
- C. 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.
- D. Wire Hangers, Braces, and Ties: Provide wires that comply with the IBC, Section 1621.

#### 2.5 METAL SUSPENSION SYSTEM **ACT-1**

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
  - 1. Armstrong World Industries, Inc., Suprafine XL
- B. Narrow-Face, Single-Web, Galvanized Steel Suspension System: Main and cross runners formed from Galvanized Steel to produce structural members with 9/16-inch-wide faces.
  - 1. Structural Classification: Heavy-duty system.
  - 2. Face Design: Screw-slot profile.
  - 3. Face Finish: Painted white.
  - 4. Reveal Finish: Match face finish.
  - 5. Location: All spaces.

#### 2.6 METAL EDGE MOLDINGS AND TRIM

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
  - 1. Armstrong World Industries, Inc., BERC2 Clip
- 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 that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
  - 1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners unless otherwise indicated.
  - 2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

## 2.7 ACOUSTICAL SEALANT

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Acoustical Sealant for Exposed and Concealed Joints:
    - a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
    - b. USG Corporation; SHEETROCK Acoustical Sealant.
- B. Acoustical Sealant: Manufacturer's standard sealant complying with ASTM C 834 and effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
  - 1. Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant.
  - 2. Acoustical sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

### 3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- 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 to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.
  - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings 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 either to structures 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. 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.
  - 6. Do not attach hangers to steel deck tabs.
  - 7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
  - 8. 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.
  - 9. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- 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 postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
  - 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, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. 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. Cut openings and install fire suppression escutcheon plates for each sprinkler head. Cut openings and install speakers and ceiling mounted fire alarm units.
- G. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
  - 1. Arrange directionally patterned acoustical panels as follows:
    - a. As indicated on reflected ceiling plans.
  - 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
  - 3. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.

#### 3.4 CLEANING

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

END OF SECTION 095113

## SECTION 096513 - RESILIENT WALL BASE AND ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Resilient wall base.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches long, of each resilient product color, texture, and pattern required.
- C. Product Schedule: For resilient products refer to Finish Schedules in the specification manual.

#### 1.3 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

#### 1.4 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.

#### 1.5 PROJECT 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 time periods:
1. 48 hours before installation.
  2. During installation.
  3. 48 hours after installation.

- B. 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.

## 1.6 EXTRA MATERIALS

- A. Furnish extra materials 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.

## PART 2 - PRODUCTS

### 2.1 RESILIENT BASE (RB-1)

- A. Resilient Base:
  - 1. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Johnsonite, Millwork, Mandalay
- B. Resilient Base Standard: ASTM F 1861.
  - 1. Material Requirement: ASTM F1861, Type TP (rubber, thermoplastic).
  - 2. Manufacturing Method: Group I (solid, homogeneous).
- C. Height: 6.0 inches.
- D. Thickness: 0.375 inch (9.525 mm).
- E. Outside Corners: Mitered.
- F. Inside Corners: Mitered.
- G. Finish: As selected on Architectural Drawings
- H. Colors and Patterns: See finish schedule on Architectural drawings.

### 2.2 RESILIENT MOLDING ACCESSORY (transition strips)

- A. Description: Rubber reducer strip for resilient floor covering, and transition strips.

- B. Profile and Dimensions: As indicated.
- C. Locations: Provide rubber molding accessories in areas indicated.
- D. Colors and Patterns: To be selected from manufacturers full range of colors.

## 2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.
  - 1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
    - a. Cove Base Adhesives: Not more than 50 g/L.

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

### 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.
- 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 practicable 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. Job-Formed Corners:
  - 1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends.
  - 2. Inside Corners: Use straight pieces of maximum lengths possible.

### 3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of carpet that would otherwise be exposed.

### 3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Perform the following operations immediately after completing resilient product installation:
  - 1. Remove adhesive and other blemishes from exposed surfaces.
  - 2. Sweep and vacuum surfaces thoroughly.
- 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 until Substantial Completion.

END OF SECTION 096513

## SECTION 096813 - TILE CARPETING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes modular, tufted carpet tile

#### 1.2 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 installation recommendations for each type of substrate.
- B. Shop Drawings: Show 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.

#### 1.3 INFORMATIONAL SUBMITTALS

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

#### 1.4 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.

#### 1.5 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 5 percent of amount installed for each type indicated, but not less than 10 sq. yd. .

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Certified by the International Certified Floorcovering Installers Association at the Commercial II certification level.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with CRI 104.

#### 1.8 FIELD CONDITIONS

- A. Comply with CRI 104 for temperature, humidity, and ventilation limitations.
- B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at occupancy levels 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.

#### 1.9 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, more than 10 percent edge raveling, snags, runs, dimensional stability, excess static discharge, loss of tuft bind strength, loss of face fiber, Insert failure characteristic and delamination.
3. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

2.1 Manufacturers: Subject to compliance with requirements, provide products by 3 of the following:

- A. Interface, LLC.
- B. J&J Invision; J&J Industries, Inc.
- C. Mannington Mills, Inc.
- D. Milliken & Company.
- E. Mohawk Group (The); Mohawk Carpet, LLC.
- F. Patcraft; a division of Shaw Industries, Inc.
- G. Shaw Contract Group; a Berkshire Hathaway company.
- H. Tandus; a Tarkett company.

## 2.2 CARPET TILE - **CPT-1**

- A. Product: Subject to compliance with requirements, provide product indicated on Drawings.
- B. Color: See Architectural Drawings
- C. Pattern: See Architectural Drawings
- D. Fiber Content: 100 percent nylon 6.
- E. Pile Characteristic: Tufted, Textured Loop.
- F. Dye Method: 100% Solution Dyed.
- G. Primary Backing/Backcoating: Manufacturer's standard composite materials.
- H. Secondary Backing: Manufacturer's standard material.
- I. Size: 9 by 39 inches (25cm by 1 m).
- J. 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, in accordance with AATCC 174.
- K. Performance Characteristics:
1. Texture Appearance Retention Rating (TARR): Severe traffic, 3.5 minimum in accordance with ASTM D7330.
  2. Dimensional Tolerance: Within 1/32 inch (0.8 mm) of specified size dimensions, as determined by physical measurement.
  3. Colorfastness to Crocking: Not less than 4, wet and dry, in accordance with AATCC 165.
  4. Electrostatic Propensity: Less than 3.5 kV in accordance with AATCC 134.

## 2.3 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, nonstaining, pressure-sensitive types to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and that are recommended in writing by carpet tile manufacturer for releasable installation.
- C. Metal Edge/Transition Strips: Extruded aluminum with mill 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. Examine carpet tile for type, color, pattern, and potential defects.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
  1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
  2. Subfloor finishes comply with requirements specified in Division 03 Section "Cast-in-Place Concrete" for slabs receiving carpet tile.
  3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation.
- B. Use trowelable leveling and patching compounds, according to manufacturer's 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. 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 carpet tile manufacturer.
- D. Clean metal substrates of grease, oil, soil and rust, and prime if directed by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.
- E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

### 3.3 INSTALLATION

- A. General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: Ashlar.
- C. Maintain dye lot integrity. Do not mix dye lots in same area.
- D. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- E. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.
- G. Install pattern parallel to walls and borders.

### 3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet tile:

1. Remove yarns that protrude from carpet tile surface.
  2. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with CRI 104, Section 16, "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 099123 - INTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
  - 1. Gypsum board.
  - 2. Hollow metal door frames.
  - 3. CMU
  - 4. Steel

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product.

#### 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.
- B. Paint: 10 percent, but not less than 1 gal. of each material and color applied.

#### 1.4 QUALITY ASSURANCE

- A. MPI Standards:
  - 1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
  - 2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F .

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

## 1.6 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F .
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following but not limited to:
  1. Sherwin-Williams Company (The).
  2. PPG
  3. Benjamin Moore

### 2.2 PAINT, GENERAL

- A. Material Compatibility:
  1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
  1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
  2. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
  3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
  4. Floor Coatings: VOC not more than 100 g/L.
  5. Shellacs, Clear: VOC not more than 730 g/L.
  6. Shellacs, Pigmented: VOC not more than 550 g/L.
  7. Flat Topcoat Paints: VOC content of not more than 50 g/L.
  8. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.

9. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
  10. Floor Coatings: VOC not more than 100 g/L.
  11. Shellacs, Clear: VOC not more than 730 g/L.
  12. Shellacs, Pigmented: VOC not more than 550 g/L.
  13. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
  14. Dry-Fog Coatings: VOC content of not more than 400 g/L.
  15. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.
  16. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.
- C. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
  2. Restricted Components: Paints and coatings shall not contain any of the following:
    - a. Acrolein.
    - b. Acrylonitrile.
    - c. Antimony.
    - d. Benzene.
    - e. Butyl benzyl phthalate.
    - f. Cadmium.
    - g. Di (2-ethylhexyl) phthalate.
    - h. Di-n-butyl phthalate.
    - i. Di-n-octyl phthalate.
    - j. 1,2-dichlorobenzene.
    - k. Diethyl phthalate.
    - l. Dimethyl phthalate.
    - m. Ethylbenzene.
    - n. Formaldehyde.
    - o. Hexavalent chromium.
    - p. Isophorone.
    - q. Lead.
    - r. Mercury.
    - s. Methyl ethyl ketone.
    - t. Methyl isobutyl ketone.
    - u. Methylene chloride.
    - v. Naphthalene.
    - w. Toluene (methylbenzene).
    - x. 1,1,1-trichloroethane.
    - y. Vinyl chloride.
- D. Colors: As indicated on color schedule.

## 2.3 PRIMERS/SEALERS

- A. Interior Latex Primer/Sealer: MPI #50.
  - 1. VOC Content: E Range of E3.
  - 2. Environmental Performance Rating: EPR 3.
- B. Primer, Alkyd, Anti-Corrosive, for Metal: MPI #79.
  - 1. VOC Content: E Range of E3.
  - 2. Environmental Performance Rating: ???.

## 2.4 LATEX PAINTS

- A. Interior Low-Odor/VOC Latex (Low Sheen): MPI #144 (Gloss Level 2).
  - 1. VOC Content: E Range of E3.
  - 2. Environmental Performance Rating: EPR 4.5.
- B. Interior Low-Odor/VOC Latex (Eggshell): MPI #145 (Gloss Level 3).
  - 1. VOC Content: E Range of E3.
  - 2. Environmental Performance Rating: EPR 4.5.
- C. Interior Low-Odor/VOC Latex (Semigloss): MPI #147 (Gloss Level 5).
  - 1. VOC Content: E Range of E3.
  - 2. Environmental Performance Rating: EPR 5.5.

## 2.5 DRY FOG/FALL COATINGS

- A. Dry Fall, Water Based, for Galvanized Steel, (egg shell): MPI #133 (Gloss Level 3).
  - 1. VOC Content: E Range of E3.
  - 2. Environmental Performance Rating: ???.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
  - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
  - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulates.
  - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
  - 1. Use applicators and techniques suited for paint and substrate indicated by manufacturers recommendations.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:
  - 1. Mechanical Work:
    - a. Uninsulated metal piping.
    - b. Uninsulated plastic piping.
    - c. Pipe hangers and supports.
    - d. Tanks that do not have factory-applied final finishes.
    - e. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
    - f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    - g. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
  - 2. Electrical Work:
    - a. Switchgear.
    - b. Panelboards.
    - c. Electrical equipment that is indicated to have a factory-primed finish for field painting.

### 3.4 FIELD QUALITY CONTROL

- A. Testing of Paint Materials: The Government reserves the right to invoke the following procedure at any time and as often as the Government deems necessary during the period when paints are being applied:
  - 1. Government will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
  - 2. Testing agency will perform tests for compliance with product requirements.
  - 3. Government may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Government, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.6 INTERIOR PAINTING SCHEDULE

#### A. Hollow Metal Frames:

- 1. Institutional Low-Odor/VOC Latex System MPI INT 5.3N:
  - a. Prime Coat: Primer, galvanized, water based, MPI #134.
    - 1) Primer, rust-inhibitive, water based: S-W Pro Industrial, Pro- Cryl Universal Primer.
  - b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
  - c. Topcoat: Light industrial coating, interior, water based, semi-gloss (MPI Gloss Level 5), MPI #153.
    - 1) Light industrial coating, interior, water based, eggshell, S-W Pre-Catalyzed Water Based Epoxy, K45-151 Series, at 4.0 mils wet, 1.5 mils dry per coat

#### B. Gypsum Board Substrates:

- 1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
  - a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
    - 1) Primer, latex, interior: S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry.
  - b. Intermediate Coat: Latex interior, matching top coat
  - c. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 4), MPI #146.
    - 1) Latex, interior, satin: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat

#### C. Masonry: CMU - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted.

- 1. Latex Systems, Low Sheen Finish, Low-Odor/VOC MPI #107:

- a. Prime Coat:
  - 1) S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal)
- b. Intermediate Coat:
  - 1) S-W ProMar 200 Zero VOC Latex Low Sheen Enamel, B24-2600 Series.
- c. Top Coat:
  - 1) S-W ProMar 200 Zero VOC Latex Low Sheen Enamel, B24-2600 Series (4 mils wet, 1.6 mils dry per coat).

D. Metal: Galvanized; Ceilings, Duct work.

- 1. Water-Based Dry-fall System, MPT #133
  - a. Prime Coat: Dryfall Waterborne.
    - 1) Pro Industrial Waterborne Acrylic Dryfall, B42-80 Series.
  - b. Top Coat Dryfall Waterborne Topcoats, Eg-Shel Finish.
    - 1) S-W Pro Industrial Waterborne Acrylic Dryfall, B42-80 Series (6.0 mils wet, 1.9 mils dry per coat).

END OF SECTION 099123

## DIVISION 102600 STAINLESS STEEL CORNER GUARDS

### PART 1 – GENERAL

#### 1.01 SUMMARY

- A. Corner guard system for wall protection:

#### 1.02 SECTION INCLUDES

- A. Stainless Steel Corner Guard Systems

#### 1.03 SUBMITTALS

- A. Product data for each type of corner guard specified.
- B. Detail drawings indicating mounting details with the appropriate fasteners for specific project substrates.
- C. Samples for verification purposes of corner guard, 6" (152mm) long, in full size profiles of each type and color indicated.
- D. Cleaning and maintenance instructions for door and wall protection systems.

#### 1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite and store in original packaging in a climate controlled location away from direct sunlight.

#### 1.05 PROJECT CONDITIONS

- A. Products must be installed in an interior climate controlled environment.

#### 1.06 WARRANTY

- A. Standard IPC Limited Lifetime Warranty against material and manufacturing defects.

### PART 2 – PRODUCTS

#### 2.01 MANUFACTURER

- A. Basis-Of-Design Product: Inpro Corporation, Endurant
  - 1. Koroseal
  - 2. CS Acrovyn

## 2.02 MANUFACTURED UNITS

### A. Corner Guards

#### 1. SS Corner Guards: (Size, Attachment Method, Grade, Thickness - Model)

- a. 2"(51mm) x 2"(51mm) x 48"(1.21m) x 1/8" radius, Cement-on, 304 Stainless Steel, 16 gauge - SAS-1824C-304

#### 1) Available custom options

- a) Height
- b) Wing size: 3/4"
- c) Bullnose radius
- d) Gauge: 14 gauge, 18 gauge
- e) Material: Gold titanium

## 2.03 MATERIALS

- A. Stainless Steel: Corner Guards shall be manufactured from Type 430, 16 gauge Stainless Steel, options: Type 430, 14 and 18 gauge; Type 304 (meets NSF Standard 51), 18, 16 and 14 gauge

- B. Gold Titanium Stainless Steel: Corner Guards shall be manufactured from Type 304, 20 gauge stainless steel with a titanium gold surface.

## 2.04 COMPONENTS

### A. Attachment

- 1. Adhesive: Field applied heavy duty adhesive
- 2. Fasteners: Pre-drilled beveled holes and Phillips head screws.

## 2.05 FINISHES

- A. Stainless steel: No. 4 satin finish.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Examine areas and conditions in which the corner guard systems will be installed.

- 1. Complete all finishing operations, including painting, before beginning installation of corner guards.

- B. Wall surface shall be dry and free from dirt, grease and loose paint.

### 3.02 PREPARATION

- A. Surface Prep: Prior to installation, clean the substrate to remove dust, debris and loose particles. Ensure the substrate is sound and per project plans.
- B. Acclimate product in temperatures between 65°F and 80°F [18°-27°C] and a humidity level less than 80% 24 hours in advance of installation.
- C. The area of installation must temperature and humidity controlled for at least 48 hours after installation.

### 3.03 INSTALLATION

- A. General: Locate the corner guard as indicated on the approved detail drawing for the appropriate substrate and in compliance with the IPC installation instructions. Install corner guard level and plumb at the height indicated on the drawings.
- B. Installation of Stainless Steel Corner Guards:
  - 1. Surface must be dry, clean and properly sealed.
  - 2. Cement on: Apply a bead of PL Premium Heavy Duty Adhesive in a zigzag pattern over the back of each wing of the corner guard. Position corner guard on the wall and apply pressure until a tight fit is achieved.
  - 3. Screw on: Position the corner guard on the wall and attach it using the supplied screws.
  - 4. Remove the protective plastic covering from the exposed surface of the corner guard.

### 3.04 CLEANING

- A. At completion of the installation, clean surfaces in accordance with the IPC clean up and maintenance instructions.

END OF SECTION 102600

## DIVISION 102613 TAPE ON CORNER GUARDS

### PART 1 – GENERAL

#### 1.01 SUMMARY

- A. Corner guard system for wall protection

#### 1.02 SECTION INCLUDES

- A. Tape-on Corner Guard

#### 1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. National Building Code of Canada (NBC)
- C. National Fire Protection Association (NFPA)
- D. Society of Automotive Engineers (SAE)
- E. Underwriters Laboratory (UL)
- F. Underwriters Laboratory of Canada (ULC)
- G. Uniform Building Code (UBC)

#### 1.04 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide corner guard systems that conform to the following requirements of regulatory agencies.
  - 1. Fire Performance Characteristics: Provide UL Classified corner guards conforming with NFPA Class A fire rating. Surface burning characteristics, as determined by UL-723 (ASTM E-84), shall be flame spread of 10 and smoke development of 350 - 450. Provide ULC (Canada) listed corner guards conforming to the requirements of the National Building Code of Canada 2010, Subsection 3.1.13. Surface burning characteristics, as determined by CAN/ULC-S102.2, shall be flame spread of 15 and smoke developed of 35.
  - 2. Self-Extinguishing: Provide corner guards with a CC1 classification, as tested in accordance with the procedures specified in ASTM D-635-74,

- Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position, as referenced in UBC 52-4-1988.
3. Impact Strength: Provide rigid vinyl profile materials that have an Impact Strength of 30.2 ft-lbs/inch of thickness as tested in accordance with the procedures specified in ASTM D-256-90b, Impact Resistance of Plastics.
  4. Chemical and Stain Resistance: Provide corner guards that show resistance to stain when tested in accordance with applicable provisions of ASTM D-543.
  5. GREENGUARD Certified: Provide GREENGUARD Certified material. Profiles shall meet the requirements of GREENGUARD Certification Standards for Low-Emitting Products and GREENGUARD Product Emission Standard for Children & Schools.
  6. Fungal and Bacterial Resistance: Provide rigid vinyl that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.
  7. Color Consistency: Provide components matched in accordance with SAE J-1545 - (Delta E) with a color difference no greater than 1.0 units using CIE Lab, CIE CMC, CIE LCh, Hunter Lab or similar color space scale systems.

#### 1.05 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each type of corner guard specified.
- B. Detail Drawings: Mounting details with the appropriate adhesives for specific project substrates.
- C. Samples: Verification samples of corner guard, 8" (203mm) long, in full size profiles of each type and color indicated.
- D. Manufacturer's Installation Instruction: Printed installation instructions for each corner guard.

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite
- B. Inspect materials at delivery to assure that specified products have been received.
- C. Store in original packaging in a climate controlled location away from direct sunlight.

#### 1.07 PROJECT CONDITIONS

- A. Environmental Requirements: Products must be installed in an interior climate controlled environment.

#### 1.08 WARRANTY

- A. Standard IPC Limited Lifetime Warranty against material and manufacturing defects.

### PART 2 – PRODUCTS

#### 2.01 MANUFACTURER

- A. Basis-Of-Design Product: Inpro Corporation, Endurant
  - 1. Koroseal
  - 2. CS Acrovyn

#### 2.02 MANUFACTURED UNITS

- A. Corner Guard Profile
  - 1. Tape-on Corner Guards
    - a. 1-1/2" (38mm) x 1-1/2" (38mm), 90 degrees
    - b. 1-1/2" (38mm) x 1-1/2" (38mm), 135 degrees

#### 2.03 MATERIALS

- A. Vinyl: Corner guard of .080" (2mm) thickness shall be made from chemical and stain-resistant unplasticized polyvinyl chloride (uPVC) with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth).

#### 2.04 COMPONENTS

- A. Attachments
  - 1. Tape: Factory applied double faced foam tape.
  - 2. Adhesive: Field applied heavy duty adhesive.

#### 2.05 FINISHES

- A. Vinyl: Colors of the corner guard to be selected by the architect from the IPC finish selection. Surface shall have a pebblette texture.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Examine areas and conditions in which the corner guard systems will be installed.
  - 1. Complete all finishing operations, including painting, before beginning installation of corner guard system materials.
- B. Wall surface shall be dry and free from dirt, grease and loose paint.

### 3.02 PREPARATION

- A. Surface Prep: Prior to installation, clean the substrate to remove dust, debris and loose particles. Ensure the substrate is sound and per project plans.
- B. Acclimate product in temperatures between 65°F and 80°F [18°-27°C] and a humidity level less than 80% 24 hours in advance of installation.
- C. The area of installation must temperature and humidity controlled for at least 48 hours after installation.

### 3.03 INSTALLATION

- A. General: Locate the corner guard as indicated on the approved detail drawing for the appropriate substrate and in compliance with the IPC installation instructions. Install corner guard level and plumb at the height indicated on the drawings.
- B. Installation of Tape-on Corner Guards:
  - 1. Surface must be clean, dry and properly sealed.
  - 2. Installation with factory applied foam tape - Remove release paper from the foam tape.
  - 3. Installation with Heavy Duty Adhesive - Cut the smallest opening possible in the spout. Apply a continuous bead of adhesive on each wing of the corner guard.
  - 4. Position the corner guard on the substrate corner.
  - 5. Starting at the bottom, press into place, working upward until entire corner guard is in place.
  - 6. Roll surface with IPC Extension Roller.

### 3.04 CLEANING

- A. At completion of the installation, clean surfaces in accordance with the IPC clean-up and maintenance instructions.

END OF SECTION 102613

## SECTION 122413 - ROLLER WINDOW SHADES

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Manually operated roller shades with single rollers.

#### 1.2 ACTION SUBMITTALS

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

##### B. Shop Drawings: Show fabrication and installation details for roller shades, including shadeband materials, their orientation to rollers, and their seam and batten locations.

##### C. Samples: For each exposed product and for each color and texture specified.

#### 1.3 INFORMATIONAL SUBMITTALS

##### A. Product certificates.

##### B. Product test reports.

#### 1.4 CLOSEOUT SUBMITTALS

##### A. Operation and maintenance data.

#### 1.5 QUALITY ASSURANCE

##### A. Installer Qualifications: Fabricator of products.

### PART 2 - PRODUCTS

#### 2.1 MANUALLY OPERATED SHADES WITH SINGLE ROLLERS

##### A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Lutron Electronics Co., Inc.
2. MechoShade Systems, LLC.
3. Springs Window Fashions; SWFcontract.

- B. Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.
  - 1. Chain-Retainer Type: Chain tensioner, jamb mounted.
- C. Rollers: Corrosion-resistant steel or extruded-aluminum tubes of diameters and wall thicknesses required to accommodate operating mechanisms and weights and widths of shadebands indicated without deflection. Provide with permanently lubricated drive-end assemblies and idle-end assemblies designed to facilitate removal of shadebands for service.
  - 1. Roller Drive-End Location: Right side of interior face of shade.
  - 2. Direction of Shadeband Roll: Regular, from back (exterior face) of roller
  - 3. Types and sizes of mounting hardware vary among manufacturers. Revise "Mounting Hardware" Paragraph below if specific types of hardware (for example, extended brackets or slim-profile brackets) are required. Where hardware dimensions are critical, indicate installation conditions and size constraints on Drawings.
- D. Mounting Hardware: Brackets or endcaps, corrosion resistant and compatible with roller assembly, operating mechanism, installation accessories, and mounting location and conditions indicated.
- E. Roller-Coupling Assemblies: Coordinated with operating mechanism and designed to join up to three inline rollers into a multiband shade that is operated by one roller drive-end assembly.
- F. Shadebands:
  - 1. Shadeband Material: Light-filtering fabric.
  - 2. Shadeband Bottom (Hem) Bar: Steel or extruded aluminum.
    - a. Type: Enclosed in sealed pocket of shadeband material
    - b. Color and Finish: As noted on finish legend.
- G. Installation Accessories:
  - 1. Front Fascia: Aluminum extrusion that conceals front and underside of roller and operating mechanism and attaches to roller endcaps without exposed fasteners.
  - 2. Endcap Covers: To cover exposed endcaps.
  - 3. Closure Panel and Wall Clip: Removable aluminum panel designed for installation at bottom of site-constructed ceiling recess or pocket and for snap-in attachment to wall clip without fasteners.
  - 4. Installation Accessories Color and Finish: As selected from manufacturer's full range.
- H. Shadeband Material Flame-Resistance Rating: Comply with NFPA 701. Testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- I. Light-Filtering Fabric: Woven fabric, stain and fade resistant.
  - 1. Source: Roller shade manufacturer.
  - 2. Type: Woven polyester and PVC-coated polyester.
  - 3. Weave: Basketweave.
  - 4. Thickness: 0.024 inches.

5. Weight: 12.68 oz./sq. yd.
6. Orientation on Shadeband: Railroaded.
7. Openness Factor: 5 percent.
8. Color: As indicated on Drawings.

## 2.2 ROLLER SHADE FABRICATION

- A. Product Safety Standard: Fabricate roller shades to comply with WCMA A 100.1
- B. Unit Sizes: Fabricate units in sizes to fill window and other openings as follows, measured at 74 deg F:
  1. Between (Inside) Jamb Installation: Width equal to jamb-to-jamb dimension of opening in which shade is installed less 1/4 inch per side or 1/2-inch total, plus or minus 1/8 inch. Length equal to head-to-sill or -floor dimension of opening in which shade is installed less 1/4 inch, plus or minus 1/8 inch.
- C. Shadeband Fabrication: Fabricate shadebands without battens or seams to extent possible, except as follows:
  1. Vertical Shades: Where width-to-length ratio of shadeband is equal to or greater than **1:4**, provide battens and seams at uniform spacings along shadeband length to ensure shadeband tracking and alignment through its full range of movement without distortion of the material.
  2. Skylight Shades: Provide battens and seams at uniform spacings along shadeband as required to ensure shadeband tracking and alignment through its full range of movement without distortion or sag of material.
  3. Railroaded Materials: Railroad material where material roll width is less than the required width of shadeband and where indicated. Provide battens and seams as required by railroaded material to produce shadebands with full roll-width panel(s) plus, if required, one partial roll-width panel located at top of shadeband.

## PART 3 - EXECUTION

### 3.1 ROLLER SHADE INSTALLATION

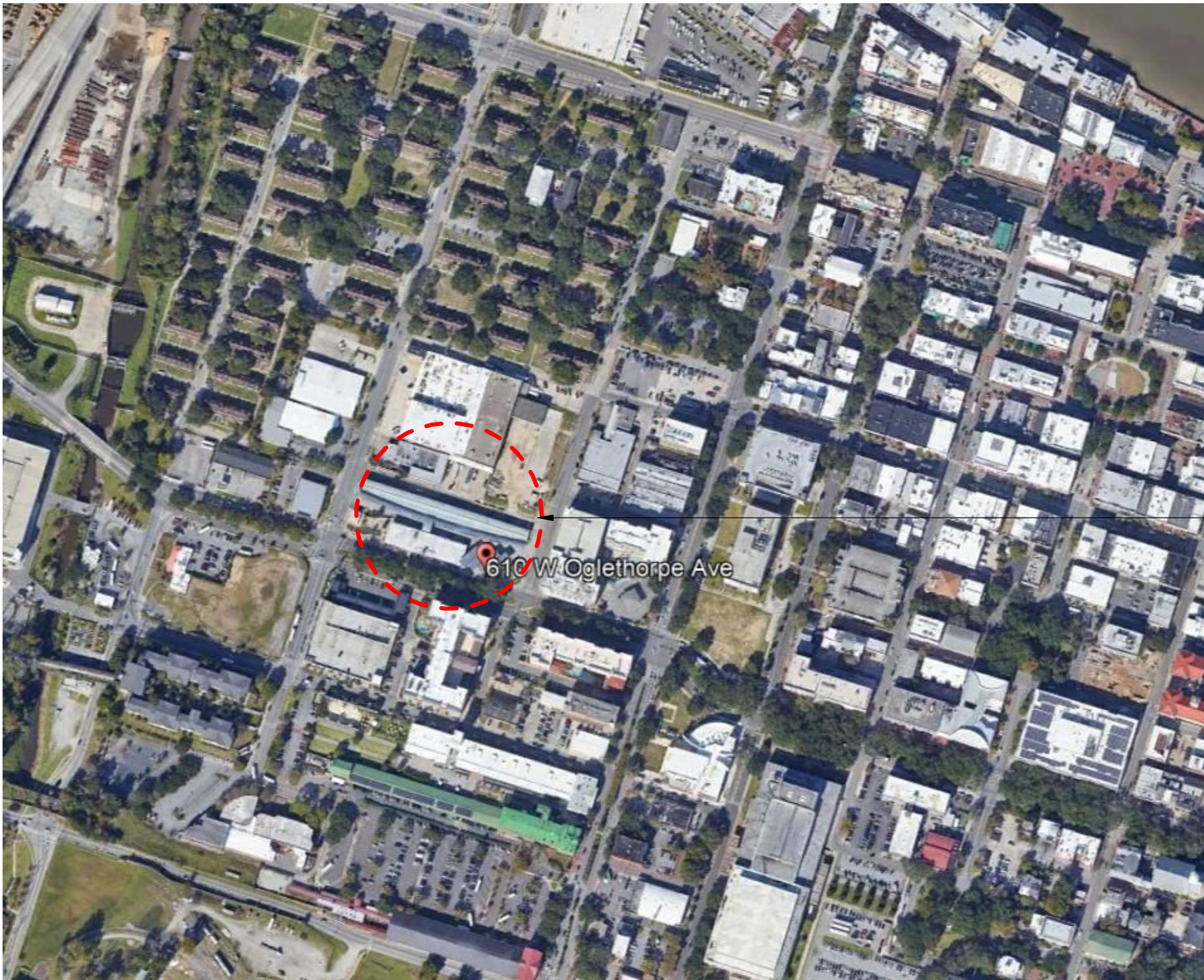
- A. Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions.
- B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
- C. Clean roller shade surfaces, after installation, according to manufacturer's written instructions.
- D. Replace damaged roller shades that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

END OF SECTION 122413

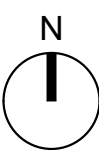
# ITC BOARD ROOM

## CHATHAM AREA TRANSIT 610 WEST OGLETHORPE AVE SAVANNAH, GA 31401 100% SUBMITTAL - IFC

12/04/2025



LOCATION MAP



PROJECT SITE



3500 Parkway Lane  
Suite 500  
Peachtree Corners  
Georgia 30092

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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

COVER SHEET

SHEET NUMBER

G-001

ORIGINAL SHEET SIZE:  
22" X 34"

### DESIGN TEAM

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D

C

B

A

SHEET NAMING CONVENTION

X - 0 0 1 A

2 DIGIT DISCIPLINE DESIGNATOR  
(IF ONLY ONE LETTER IS USED, THE SECOND LETTER IS REPLACED WITH A DASH "-" AS A PLACEHOLDER)\*\*

1 DIGIT SHEET TYPE DESIGNATOR  
0 - GENERAL  
1 - PLANS  
2 - ELEVATIONS  
3 - SECTIONS  
4 - ENLARGED PLANS  
5 - DETAILS  
6 - VARIES  
7 - VARIES  
8 - SPECIFICATIONS  
9 - 3D VIEWS

1 DIGIT AREA DESIGNATOR  
(AREA DESIGNATOR ONLY USED WHEN PLANS ARE SUBDIVIDED INTO AREAS.)

2 DIGIT SEQUENTIAL # (01-99)  
(FIRST DIGIT INDICATES PLAN TYPE, SECOND DIGIT INDICATES FLOOR)

| SHEET NUMBER   | SHEET NAME             |
|----------------|------------------------|
| GENERAL        |                        |
| G-001          | COVER SHEET            |
| G-002          | SHEET INDEX            |
| G-003          | BUILDING CODE SUMMARY  |
| G-101          | LIFE SAFETY FLOOR PLAN |
| SHEET TOTAL: 4 |                        |

|                 |                                        |
|-----------------|----------------------------------------|
| ARCHITECTURAL   |                                        |
| A-001           | GENERAL NOTES, ABBREVIATIONS & SYMBOLS |
| A-002           | TYPICAL MOUNTING HEIGHTS & LOCATIONS   |
| A-003           | MANEUVERING CLEARANCES                 |
| A-004           | PARTITION TYPES & DETAILS              |
| AS101           | ARCHITECTURAL SITE PLAN                |
| AD101           | DEMOLITION FLOOR PLAN                  |
| AD131           | DEMOLITION REFLECTED CEILING PLAN      |
| A-101           | FLOOR PLAN                             |
| A-131           | REFLECTED CEILING PLAN                 |
| A-401           | ENLARGED FLOOR PLANS                   |
| A-402           | ENLARGED FLOOR PLANS                   |
| A-421           | INTERIOR ELEVATIONS                    |
| A-422           | INTERIOR ELEVATIONS                    |
| A-423           | INTERIOR ELEVATIONS                    |
| A-424           | INTERIOR ELEVATIONS                    |
| A-501           | ENLARGED RAISED FLOORING PLAN          |
| A-502           | RAISED FLOORING DETAILS                |
| A-531           | CEILING DETAILS                        |
| A-601           | DOOR SCHEDULE AND DETAILS              |
| SHEET TOTAL: 19 |                                        |

|                |                                      |
|----------------|--------------------------------------|
| INTERIORS      |                                      |
| I-101          | INTERIOR FINISH FLOOR PLAN           |
| I-131          | ROOM FINISH SCHEDULE & GENERAL NOTES |
| I-300          | FURNITURE FLOOR PLAN                 |
| SHEET TOTAL: 3 |                                      |

|                 |                                              |
|-----------------|----------------------------------------------|
| MECHANICAL      |                                              |
| M-001           | MECHANICAL GENERAL NOTES AND DESIGN CRITERIA |
| M-002           | MECHANICAL ABBREVIATIONS AND LEGENDS         |
| M-003           | MECHANICAL SPECIFICATIONS                    |
| M-004           | MECHANICAL SPECIFICATIONS                    |
| M-005           | MECHANICAL SPECIFICATIONS                    |
| MD101           | MECHANICAL DEMOLITION PLANS                  |
| MH101           | MECHANICAL HVAC PLAN                         |
| MP101           | MECHANICAL PIPING PLAN                       |
| M-501           | MECHANICAL DETAILS                           |
| M-601           | MECHANICAL SCHEDULES                         |
| M-701           | MECHANICAL CONTROLS                          |
| M-702           | MECHANICAL CONTROLS                          |
| SHEET TOTAL: 12 |                                              |

|                 |                                            |
|-----------------|--------------------------------------------|
| ELECTRICAL      |                                            |
| E-001           | ELECTRICAL GENERAL NOTES AND ABBREVIATIONS |
| E-002           | ELECTRICAL LEGEND                          |
| ED101           | ELECTRICAL DEMOLITION PLANS                |
| E-101           | LIGHTING PLAN                              |
| E-111           | POWER PLAN                                 |
| E-121           | MECHANICAL POWER PLAN                      |
| E-131           | TELECOMMUNICATIONS PLAN                    |
| E-501           | ELECTRICAL DETAILS                         |
| E-602           | ELECTRICAL ONE-LINE DIAGRAM                |
| E-611           | LUMINAIRE SCHEDULE                         |
| E-621           | PANELBOARD SCHEDULES                       |
| E-801           | ELECTRICAL SPECIFICATIONS                  |
| SHEET TOTAL: 12 |                                            |

POND

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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL

STATE OF GEORGIA

JORGE A. MENDEZ

12.3.25

CERTIFICATE NO. 184563  
REGISTERED ARCHITECT

CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE  
SHEET INDEX

SHEET NUMBER  
G-002

ORIGINAL SHEET SIZE:  
22" X 34"

12/1/2025 2:24:08 PM Autodesk Docs://1230561 CAT ITC Board Room/1230561\_CAT ITC\_ARCH\_v23.rvt

D

C

B

A

BUILDING CODE SUMMARY

PROJECT INFORMATION

PROJECT NAME: CAT ITC BOARD ROOM

PROJECT LOCATION: 610 WEST OGLETHORPE, SAVANNAH, GA 31401

PROJECT SCOPE: INTERIOR RENOVATION OF EXISTING CAT INTERMODAL TRANSIT CENTER TO CREATE A BOARD ROOM.

THIS PROJECT IS CLASSIFIED AS AN ALTERATION - LEVEL 2 - INTERIOR RENOVATION.

AT THE AREA OF THE PROPOSED BOARD ROOM, THE EXISTING OCCUPANCY IS MADE OF ASSEMBLY AND BUSINESS USES. THE WORK PROPOSED WILL EXPAND THE ASSEMBLY USE AREA INTO A PORTION OF THE BUSINESS USE AREA. THE WORK IS IN COMPLIANCE WITH CHAPTER 9 IEBC REQUIREMENTS.

LIST OF APPLICABLE CODES

INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION W/ GA AMENDMENTS  
INTERNATIONAL EXISTING BUILDING CODE (IEBC), 2018 EDITION W/ GA AMENDMENTS  
INTERNATIONAL FIRE CODE (IFC), 2018 EDITION  
INTERNATIONAL PLUMBING CODE (IPC), 2018 EDITION W/ 2024 GA AMENDMENTS  
INTERNATIONAL MECHANICAL CODE (IMC), 2018 EDITION W/ 2024 GA AMENDMENTS  
NATIONAL ELECTRICAL CODE (NEC), 2023 EDITION  
INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2015 EDITION  
ANSI A117.1, 2017 EDITION W/ GA AMENDMENTS & SUPPLEMENTS  
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101: LIFE SAFETY CODE (LSC), 2024 EDITION

OCCUPANCY CLASSIFICATION (IBC CHAPTER 3):

GROUP A-3 - ASSEMBLY (BOARD ROOM)

GROUP B - BUSINESS (CALL ROOM)

MIXED OCCUPANCY NON-SEPARATED (508.3)

OCCUPANCY CLASSIFICATION (LSC CHAPTER 6):

DEFINITION 6.1.2.1 - ASSEMBLY  
DEFINITION 6.1.11.1 - BUSINESS\*

MIXED OCCUPANCY NON-SEPARATED (6.1.14.2.2):  
\*FOR EGRESS, TRAVEL DISTANCES AND LIFE SAFETY REQUIREMENTS, THE MOST STRINGENT REQUIREMENTS APPLYING TO THE ASSEMBLY OCCUPANCY WERE USED BASED ON A SINGLE OCCUPANCY(HIGHER CLASSIFICATION) OF ASSEMBLY A-3.

GENERAL BUILDING HEIGHT & AREAS (IBC CHAPTER 5):

ALLOWABLE HEIGHT - FEET (TABLE 504.3):

|                |        |                      |
|----------------|--------|----------------------|
| ASSEMBLY (A-3) | 85'-0" | ACTUAL = 18'-10 1/2" |
|----------------|--------|----------------------|

ALLOWABLE HEIGHT - STORIES (TABLE 504.3):

|                 |         |                  |
|-----------------|---------|------------------|
| ASSEMBLY (A-3): | 4 STORY | ACTUAL = 1 STORY |
|-----------------|---------|------------------|

ALLOWABLE AREA PER STORY (TABLE 506.2):

|                 |           |                    |
|-----------------|-----------|--------------------|
| ASSEMBLY (A-3): | 62,000 SF | ACTUAL = 10,760 SF |
|-----------------|-----------|--------------------|

ALLOWABLE AREA FRONTAGE INCREASE (506.3.3):

NOT REQUIRED

ALLOWABLE AREA TOTAL (506.2.2):

|                             |                    |
|-----------------------------|--------------------|
| TOTAL ALLOWABLE - 85,095 SF | ACTUAL = 10,760 SF |
|-----------------------------|--------------------|

TYPES OF CONSTRUCTION (IBC CHAPTER 6):

TYPE OF CONSTRUCTION (TABLE 601): IIA

FIRE RESISTANCE (TABLE 601):

|                                                                                        |                                            |
|----------------------------------------------------------------------------------------|--------------------------------------------|
| STRUCTURAL FRAME<br>COLUMNS, GIRDERS, TRUSSES<br>(NOT REQUIRED WHEN > 20' ABOVE FLOOR) | EXISTING, UNCHANGED                        |
| BEARING WALLS<br>EXTERIOR<br>INTERIOR                                                  | EXISTING, UNCHANGED<br>EXISTING, UNCHANGED |
| NONBEARING WALLS AND PARTITIONS<br>EXTERIOR (TABLE 602) X ≥ 30                         | EXISTING, UNCHANGED                        |
| INTERIOR (TABLE 601)                                                                   | 0 HOUR                                     |
| FLOOR CONSTRUCTION                                                                     | EXISTING, UNCHANGED                        |
| STAIR ENCLOSURE                                                                        | NA                                         |
| ELEVATOR SHAFT                                                                         | NA                                         |

FIRE PROTECTION SYSTEMS (IBC CHAPTER 9):

AUTOMATIC SPRINKLER SYSTEM (903) REQUIRED / PROVIDED

STANDPIPE SPRINKLER SYSTEM (905) NOT REQUIRED / NOT PROVIDED

PORTABLE FIRE EXTINGUISHERS (906) REQUIRED / PROVIDED

FIRE ALARM & DETECTION (907) REQUIRED / PROVIDED

MASS NOTIFICATION SYSTEM (917) NOT REQUIRED / TO BE VERIFIED

MEANS OF EGRESS (LSC CHAPTER 7):

MAXIMUM FLOOR AREA ALLOWABLE / OCCUPANT (TABLE 7.3.1.2)

|                                                              |             |
|--------------------------------------------------------------|-------------|
| ASSEMBLY USE:<br>(LESS CONCENTRATED,<br>W/OUT FIXED SEATING) | 15 SF/P NET |
|--------------------------------------------------------------|-------------|

OCCUPIED AREA OCCUPANT LOAD

|                           |                       |               |
|---------------------------|-----------------------|---------------|
| ASSEMBLY USE(BOARD ROOM): | 1,534 SF NET/ 15 =    | 103 OCCUPANTS |
| ASSEMBLY USE(CALL ROOM):  | 695 SF NET/ 15 =      | 46 OCCUPANTS  |
| ASSEMBLY USE(EXISTING)    | 2,409 SF NET/ 15 =    | 160 OCCUPANTS |
| ASSEMBLY USE(EXISTING)    | 1,479 SF NET/ 15 =    | 100 OCCUPANTS |
| STORAGE USE(EXISTING)     | 43 SF GROSS/ 300 =    | 1 OCCUPANT    |
| STORAGE USE(EXISTING)     | 70 SF GROSS/ 300=     | 1 OCCUPANT    |
| STORAGE USE(EXISTING)     | 319 SF GROSS/ 300 =   | 2 OCCUPANTS   |
| BUSINESS USE(EXISTING)    | 235 SF GROSS/ 150 =   | 2 OCCUPANTS   |
| BUSINESS USE(EXISTING)    | 277 SF GROSS/ 150 =   | 2 OCCUPANTS   |
| BUSINESS USE(EXISTING)    | 1,048 SF GROSS/ 150 = | 10 OCCUPANTS  |
| TOTAL =                   | 8,107 SF              | 427 OCCUPANTS |

EGRESS WIDTH

LEVEL COMPONENTS AND RAMPS (TABLE 7.3.3.1)

|                   |             |              |
|-------------------|-------------|--------------|
| 0.2 * 152 = 30.4" | 44" MINIMUM | 82" PROVIDED |
|-------------------|-------------|--------------|

NUMBER OF EXITS (7.4.1.1): NOT LESS THAN 2 6 PROVIDED

COMMON PATH OF TRAVEL (TABLE A.7.6)

|                     |             |                  |
|---------------------|-------------|------------------|
| ASSEMBLY(≤50 OCC) = | 75'-0" MAX. | 44'-3" PROVIDED  |
| ASSEMBLY(>50 OCC) = | 20'-0" MAX. | 19'-11" PROVIDED |

DEAD ENDS (TABLE A.7.6)

|            |             |                |
|------------|-------------|----------------|
| ASSEMBLY = | 20'-0" MAX. | 4'-6" EXISTING |
|------------|-------------|----------------|

TRAVEL DISTANCE TO EXITS (TABLE A.7.6)

|            |              |                  |
|------------|--------------|------------------|
| ASSEMBLY = | 250'-0" MAX. | 128'-2" PROVIDED |
|------------|--------------|------------------|

COORDINATOR RATING (TABLE 6.1.14.4.1)

|            |                    |                 |
|------------|--------------------|-----------------|
| ASSEMBLY = | 0 HOUR(38.3.6.1,3) | 0 HOUR PROVIDED |
|------------|--------------------|-----------------|

PLUMBING SYSTEMS (IBC CHAPTER 19):

PLUMBING FIXTURE CALCULATIONS ARE BASED ON IBC OCCUPANT LOAD (IBC CHAPTER 10)

- UTILIZING BOTH ASSEMBLY AND BUSINESS USE BROKEN DOWN PER AREA FUNCTION. SEE LIFE SAFETY PLANFOR AREAS. PLUMBING OCCUPANT QUANTITIES WILL NOT MATCH LIFE SAFETY QUANTITIES DUE TO MIXED USE.

MAXIMUM FLOOR AREA ALLOWABLE / OCCUPANT (TABLE 1004.5)

|           |                |
|-----------|----------------|
| ASSEMBLY: | 15 SF/P NET    |
| BUSINESS: | 150 SF/P GROSS |

OCCUPIED AREA OCCUPANT LOAD

|                           |                       |               |
|---------------------------|-----------------------|---------------|
| ASSEMBLY USE(BOARD ROOM): | 1,534 SF NET/ 15 =    | 103 OCCUPANTS |
| BUSINESS USE(CALL ROOM):  | 695 SF NET/ 150 =     | 5 OCCUPANTS   |
| ASSEMBLY USE(EXISTING)    | 2,409 SF NET/ 15 =    | 160 OCCUPANTS |
| ASSEMBLY USE(EXISTING)    | 1,479 SF NET/ 15 =    | 100 OCCUPANTS |
| STORAGE USE(EXISTING)     | 43 SF GROSS/ 300 =    | 1 OCCUPANT    |
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| BUSINESS USE(EXISTING)    | 277 SF GROSS/ 150 =   | 2 OCCUPANTS   |
| BUSINESS USE(EXISTING)    | 1,048 SF GROSS/ 150 = | 10 OCCUPANTS  |
| TOTAL =                   | 8,107 SF              | 386 OCCUPANTS |

PLUMBING FIXTURES (TABLE 2902.1)

|                      |                       |                    |          |
|----------------------|-----------------------|--------------------|----------|
| ASSEMBLY (A-3) - 363 | 1 / 125(M); 1 / 65(F) | REQUIRED 2(M);3(F) | PROVIDED |
|----------------------|-----------------------|--------------------|----------|

WATER CLOSETS

|                   |                          |                  |  |
|-------------------|--------------------------|------------------|--|
| BUSINESS (B) - 19 | 1 / 25 ≤ 50; 1 / 50 ≥ 50 | 1(M&F)           |  |
| STORAGE (S) - 4   | 1/ 100                   | 1(M&F)           |  |
| TOTAL             | 4(M);5(F)                | 8(M);8(F) EXIST. |  |

LAVATORIES

|                      |                          |                  |  |
|----------------------|--------------------------|------------------|--|
| ASSEMBLY (A-3) - 363 | 1 / 200                  | 1(M);1(F)        |  |
| BUSINESS (B) - 19    | 1 / 40 ≤ 80; 1 / 80 ≥ 80 | 1(M);1(F)        |  |
| STORAGE (S) - 4      | 1/ 100                   | 1(M);1(F)        |  |
| TOTAL                | 3(M);3(F)                | 7(M);7(F) EXIST. |  |

DRINKING FOUNTAINS

|                      |          |               |  |
|----------------------|----------|---------------|--|
| ASSEMBLY (A-3) - 362 | 1/ 500   | 2(IBC 1107.1) |  |
| BUSINESS (B) - 19    | 1 / 100  | 2(IBC 1107.1) |  |
| STORAGE (S) - 4      | 1 / 1000 | 2(IBC 1107.1) |  |
| TOTAL                | 2        | 2 EXIST.      |  |

SERVICE SINKS

|                      |                |          |  |
|----------------------|----------------|----------|--|
| ASSEMBLY (A-3) - 362 | 1 SERVICE SINK | 1        |  |
| BUSINESS (B) - 19    | 1 SERVICE SINK | 1        |  |
| STORAGE (S) - 4      | 1 SERVICE SINK | 1        |  |
| TOTAL                | 1              | 1 EXIST. |  |



3500 Parkway Lane  
Suite 500  
Peachtree Corners  
Georgia 30092

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COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



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SUMMARY

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G-003

ORIGINAL SHEET SIZE:  
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12/1/2025 2:24:09 PM Autodesk Docs://1230561 CAT ITC Board Room/1230561\_CAT ITC\_ARCH\_v23.rvt

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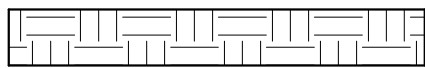
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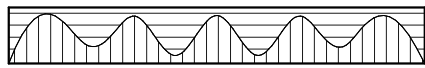
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MATERIALS



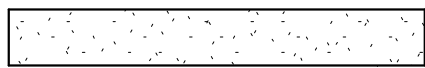
COMPACTED EARTH



ROCK



ROCKFILL



SAND / MORTAR



CONCRETE



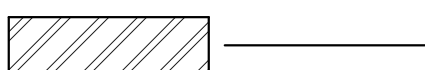
CONCRETE BLOCK(CMU)



EXTERIOR INSULATION  
FINISH SYSTEM



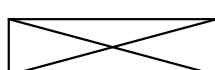
BRICK



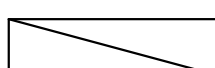
METAL-LARGE SCALE



METAL-SMALL SCALE



WOOD-FRAMING (CONTINUOUS)



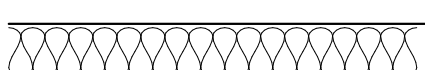
WOOD-BLOCKING  
(DISCONTINUOUS)



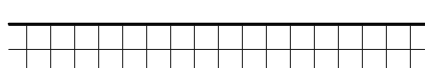
WOOD-FINISH



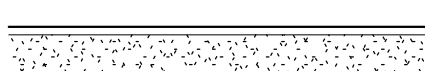
ACOUSTICAL TILE



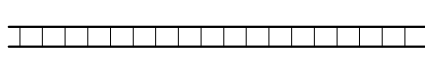
INSULATION BATT



INSULATION RIGID



GYPSUM BOARD



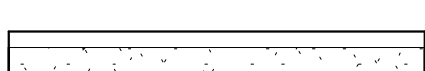
CERAMIC TILE



GLASS

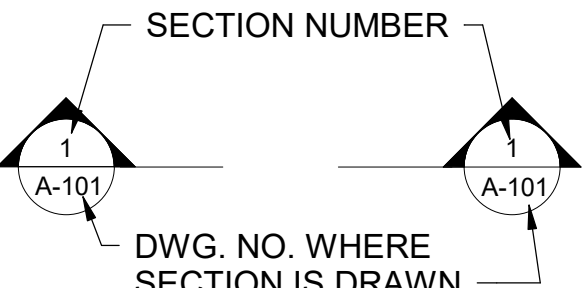


PLYWOOD

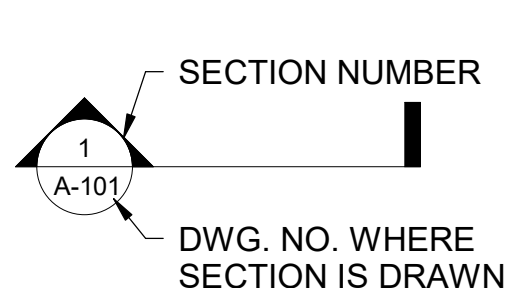


PLASTER/ROCK LATH

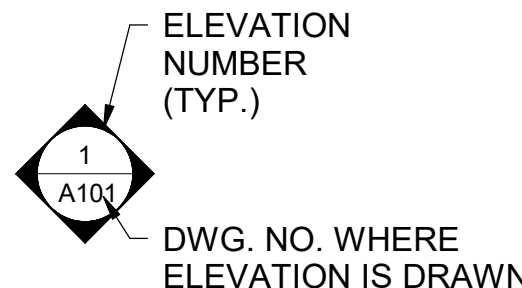
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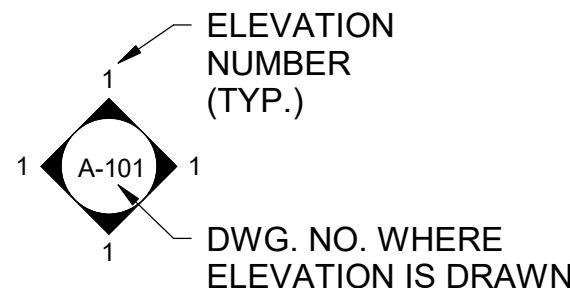
BUILDING SECTION MARK



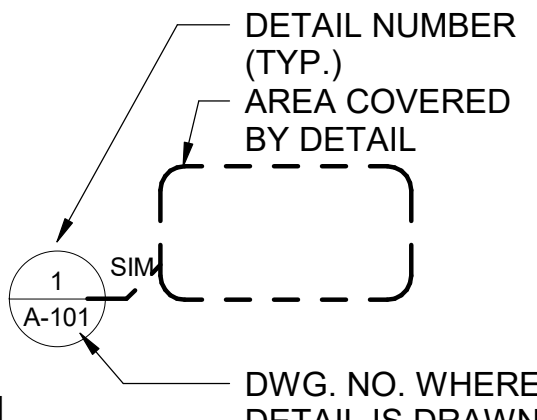
WALL SECTION MARK



EXTERIOR ELEVATION MARK

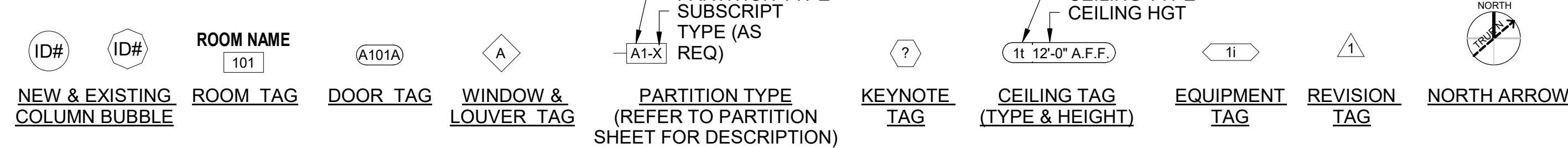


INTERIOR ELEVATION MARK



CALLOUT HEAD

PLAN SYMBOLS:



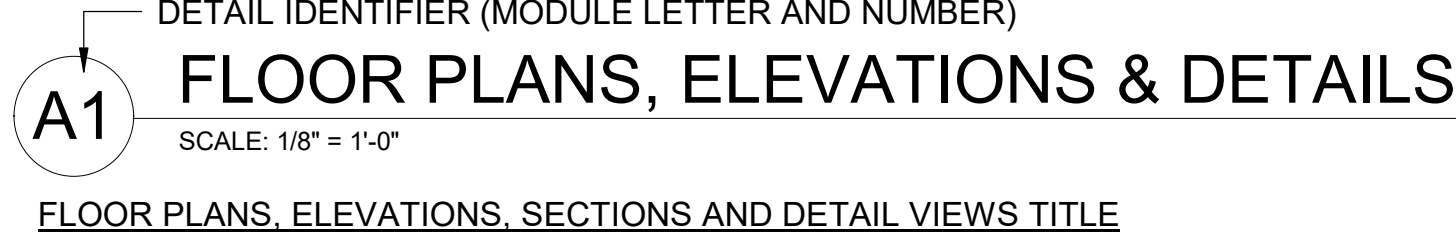
ARCHITECTURAL GENERAL NOTES:

- THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE DRAWINGS ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- THE ENUMERATION OF PARTICULAR ITEMS OF WORK IN ONE PORTION OF THE CONTRACT DOCUMENTS SHALL NOT BE CONSTRUED TO EXCLUDE OTHER ITEMS NECESSARY OR IMPLIED THEREFROM.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE WORK SO THAT NO WORK SHALL BE LEFT IN AN UNFINISHED OR INCOMPLETE CONDITION.
- WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS FOR QUALITY OF MATERIALS AND WORKMANSHIP AS WELL AS REQUIREMENTS IN THE CONSTRUCTION DOCUMENTS. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL PROTECT EXISTING, IN-PLACE, AND NEW WORK.
- WORK NOTED "N.I.C." IS NOT MEANT TO BE PART OF THE CONSTRUCTION SCOPE OF WORK AGREEMENT.
- THE CONTRACTOR SHALL PAY FOR AND COORDINATE THE REMOVAL AND LEGAL DISPOSAL OF MATERIALS AND RUBBISH.
- ONCE ON SITE, THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS THAT CORRESPOND TO THOSE SHOWN ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK.
- DO NOT SCALE DRAWINGS; DIMENSIONS GOVERN, LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK.
- DIMENSIONS NOTED AS 'HOLD' SHALL NOT VARY BY MORE THAN 1/8" FROM SIDE TO SIDE OR FROM FRONT TO BACK, FINISHED SURFACE TO FINISHED SURFACE.
- WALL AND/OR CEILING ASSEMBLIES THAT ARE IDENTIFIED WITH A FIRE RESISTIVE RATING SHALL BE CONSTRUCTED AS DETAILED HEREIN.
- DIMENSIONS SHOWN ARE TO FACE OF STUD OR CMU (U.N.O.).
- THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES AND SHALL OBTAIN NECESSARY BUILDING AND FIRE PERMITS FROM AUTHORITIES HAVING JURISDICTION.
- INTERIOR FINISH MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES.
- DISSIMILAR METALS SHALL BE ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
- NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON INDIVIDUAL SHEETS SHALL BE APPLIED TO RELATED DRAWINGS AND DETAILS.
- A FINISH INDICATION ON A WALL SHALL MEAN THE ENTIRE LENGTH AND HEIGHT OF WALL IS TO BE FINISHED OR FIRE-RATED AS INDICATED.
- WHEN NON-DIMENSIONED PARTITIONS APPEAR IN CONJUNCTION WITH DOOR OPENINGS, THE DOOR WIDTH AND THE DOOR FRAME DETAILS DETERMINE THE LOCATION OF ADJACENT WALLS AND FRAMES.
- DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE OWNER BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL COORDINATE MECHANICAL AND ELECTRICAL FLOOR AND WALL SLEEVES INCLUDING CONDUITS WITH MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR MECHANICAL EQUIPMENT AND PLUMBING WORK. ACCESS PANELS SHALL BE CONCEALED AND LOCATIONS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO PROCEEDING.
- PIPE DUCTS AND BUS DUCTS THAT PENETRATE FLOOR SLABS OR WALL PARTITIONS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE MOISTURE RESISTIVENESS, FIRE RATING, AND STRUCTURAL INTEGRITY OF THE BUILDING.
- DO NOT CUT INTO, REMOVE OR ALTER ANY STRUCTURAL MEMBER OR PORTION OF THE FLOOR SYSTEM UNLESS IT IS SPECIFICALLY NOTED OR SHOWN ON THE STRUCTURAL DRAWINGS.
- PROVIDE EXPANSION AND CONTROL JOINTS IN WORK AS PER PRODUCT MANUFACTURER'S STANDARDS.
- INTERIOR PARTITION MOVEMENT CONTROL:
  - VERTICAL CONTROL JOINTS FOR ANY WALL LENGTH ARE TO OCCUR AT NOT MORE THAN 30'-0" O.C. IN THE HORIZONTAL DIRECTION, UNLESS NOTED OTHERWISE.
  - PROVISIONS SHALL BE MADE IN THE DESIGN, FABRICATION, AND INSTALLATION OF INTERIOR PARTITIONS FOR TYPICAL FLOOR DEFLECTIONS OF THE STRUCTURE UNDER SUPERIMPOSED LOADS AS FOLLOWS:
    - TYPICAL ROOF/FLOOR MEMBERS: SPAN/360 BUT NOT LESS THAN 1/2".
- THE CONTRACTOR SHALL PLAN HIS/HER WORK TO PROVIDE ADEQUATE PROTECTION FOR PERSONS AND PROPERTY AT ALL TIMES, AND EXECUTE THE WORK IN SUCH A MANNER TO AVOID ANY HAZARD TO PERSONS AND PROPERTY AS NECESSARY.
- THE CONTRACTOR SHALL COORDINATE THE PHASING OF THE WORK TO BE PERFORMED IN OR ABOUT EXISTING FACILITIES, IF APPLICABLE, WITH THE OWNER PRIOR TO START OF SUCH WORK.

ARCHITECTURAL ABBREVIATIONS:

|            |                                                   |           |                                        |           |                                 |
|------------|---------------------------------------------------|-----------|----------------------------------------|-----------|---------------------------------|
| AFF        | ABOVE FINISHED FLOOR                              | FDN       | FOUNDATION                             | PL        | PLATE                           |
| ADAAG      | AMERICAN W/ DISABILITIES ACCESSIBILITY GUIDELINES | GA        | GAGE / GAUGE                           | PLMB      | PLUMBING                        |
| ADJ        | ADJUST/ ADJUSTABLE                                | GALV      | GALVANIZED                             | PLYWD.    | PLYWOOD                         |
| ACT        | ACOUSTICAL CEILING TILE                           | GFCI      | GOVERNMENT FURNISHED                   | PT        | PORCELAIN TILE                  |
| ANOD       | ANODIZED                                          | GFGI      | CONTRACTOR INSTALLED                   | LBS. OR # | POUNDS                          |
| AL / ALUM. | ALUMINIUM                                         | GL        | GOVERNMENT FURNISHED                   | PSF       | POUNDS / SQUARE FOOT            |
| APPROX     | APPROXIMATE                                       | GOVT      | GOVERNMENT                             | PSI       | POUNDS / SQUARE INCH            |
| AR/ARCH    | ARCHITECTURAL                                     | GYP       | GYPSUM                                 | PEMB      | PRE-ENGINEERED                  |
| AT / FP    | ANTI TERRORISM / FORCE PROTECTION                 | GWB       | GYPSUM WALL BOARD                      | PRE-FAB   | METAL BUILDING                  |
| AVG        | AVERAGE                                           | HDW       | HARDWARE                               | PREFIN    | PREFABRICATED                   |
| A / V      | AUDIO/VISUAL                                      | HGT       | HEIGHT                                 | Q.T.      | PREFINISHED                     |
| BLKG       | BLOCKING                                          | HM        | HOLLOW METAL                           | RAF       | QUARRY TILE                     |
| BD         | BOARD                                             | HORIZ     | HORIZONTAL                             | RCPT      | RAISED ACCESS FLOOR             |
| BTM        | BOTTOM                                            | HB        | HOSE BIBB                              | REF       | RECEPTIONIST / RECEPTION        |
| B / O      | BOTTOM OF                                         | HVAC      | HEATING VENTILATION & AIR CONDITIONING | REINF     | REFERENCE                       |
| BLDG       | BUILDING                                          | IMP       | INSULATED METAL PANEL                  | REQ'D     | REINFORCEMENT / REINFORCED      |
| CFCI       | CONTRACTOR FURNISHED                              | IN        | INCH                                   | REV       | REQUIRED                        |
| CFMF       | COLD FORMED METAL FRAMING                         | INSUL     | INSULATION                             | R / D     | REVISIONS / REVISED             |
| CPT        | CARPET                                            | INT       | INTERIOR                               | RH        | RIGHT HAND                      |
| CLG        | CEILING                                           | JAN       | JANITOR                                | RHR       | RIGHT HAND REVERSE              |
| CLG HT     | CEILING HEIGHT                                    | JC        | JANITOR'S CLOSET                       | RM        | ROOM                            |
| CTR        | CENTER                                            | JT        | JOINT                                  | RO        | ROUGH OPENING                   |
| ¢          | CENTER LINE                                       | KP        | KICK PLATE                             | RB        | RUBBER BASE                     |
| CT         | CERAMIC TILE                                      | LAM       | LAMINATE                               | SG        | SAFETY GLASS / GLAZING          |
| CLR        | CLEAR                                             | LDG       | LANDING                                | SC        | SEALED CONCRETE                 |
| CO         | CLEANOUT                                          | LAV       | LAVATORY                               | SCW       | SOLID CORE WOOD                 |
| COL        | COLUMN                                            | LH        | LEFT HAND                              | SCHED     | SCHEDULE                        |
| CONC       | CONCRETE                                          | LHR       | LEFT HAND REVERSE                      | SECT      | SECTION                         |
| CORR       | CORRIDOR                                          | LGT       | LENGTH                                 | SSK       | SERVICE SINK                    |
| CMU        | CONCRETE MASONRY UNIT                             | LT        | LIGHT                                  | SIM       | SIMILAR                         |
| CONF       | CONFERENCE                                        | LTG       | LIGHTING                               | ST        | STAINED                         |
| CONST      | CONSTRUCTION                                      | LTV       | LONGITUDINAL                           | STC       | SOUND TRANSMISSION CLASS        |
| CONT       | CONTINUOUS                                        | LVR       | LOUVER                                 | SPEC(S)   | SPECIFICATION                   |
| CONTR      | CONTRACTOR                                        | L / V     | LOW VOLTAGE                            | SFRM      | SPRAYED FIRE RESISTIVE MATERIAL |
| CJ         | CONTROL JOINT                                     | MAS       | MASONRY                                | SQ        | SQUARE                          |
| CY         | CUBIC YARD                                        | MO        | MASONRY OPENING                        | ST        | STAIN                           |
| DET        | DETAIL                                            | MGR       | MANAGER                                | S.S.      | STAINLESS STEEL                 |
| DIA        | DIAMETER                                          | MANUF     | MANUFACTURER                           | STD       | STANDARD                        |
| DIM        | DIMENSION                                         | MATL      | MATERIAL                               | STL       | STEEL                           |
| DISP       | DISPENSER                                         | MAX       | MAXIMUM                                | STOR      | STORAGE                         |
| DN         | DOWN                                              | MECH      | MECHANICAL                             | STR       | STRUCTURAL                      |
| DS         | DOWNSPOUT                                         | MTL       | METAL                                  | SUSP      | SUSPENDED                       |
| DESC       | DESCRIPTION                                       | MWP       | METAL WALL PANEL                       | TELECOMM  | TELECOMMUNICATIONS              |
| DWG        | DRAWING                                           | MB        | MINI BLIND                             | TEL       | TELEPHONE                       |
| EA         | EACH                                              | MIN       | MINIMUM                                | THK       | THICK / THICKNESS               |
| ELEC       | ELECTRICAL OR ELECTRIC                            | MIR       | MIRROR                                 | TLT       | TOILET                          |
| EL         | ELEVATION                                         | MISC      | MISCELLANEOUS                          | T / O     | TOP OF                          |
| EWC        | ELECTRIC WATER COOLER                             | N.I.C.    | NOT IN CONTRACT                        | TYP       | TYPICAL                         |
| EP         | EPOXY PAINT                                       | NO. (#)   | NUMBER                                 | T         | TEMPERED                        |
| ENGR       | ENGINEER                                          | NTS       | NOT TO SCALE                           | U.L.      | UNDERWRITERS                    |
| EOS        | EDGE OF SLAB                                      | NFPA      | NATIONAL FIRE PROTECTION ASSOCIATION   | UNFIN     | UNFINISHED                      |
| EQUIP      | EQUIPMENT                                         | O.C.      | ON CENTER                              | U.N.O.    | UNLESS NOTED OTHERWISE          |
| EQ         | EQUAL                                             | OFCI      | OWNER FURNISHED                        | VERT      | VERTICAL                        |
| EXIST      | EXISTING                                          | OFGI      | CONTRACTOR INSTALLED                   | VEST      | VESTIBULE                       |
| EXP        | EXPOSED                                           | O.H.      | OWNER FURNISHED                        | VCT       | VINYL COMPOSITION TILE          |
| EJ         | EXPANSION JOINT                                   | OPNG      | GOVERNMENT INSTALLED                   | VCB       | VINYL COVE BASE                 |
| EXP ST     | EXPOSED TO STRUCTURE                              | OPP       | OPPOSITE HAND                          | WDT       | WIDTH                           |
| EXT        | EXTERIOR                                          | OSHA      | OPENING                                | W /       | WITH                            |
| FDC        | FIRE DEPARTMENT CONNECTION                        | O.D.      | OUTSIDE DIAMETER                       | WC        | WATER CLOSET                    |
| FT         | FEET                                              | OVHD / OH | OCCUPATIONAL SAFETY AND HEALTH ACT     | WD        | WOOD                            |
| FV         | FIELD VERIFY                                      | O / D     | OVERHEAD                               | WDW       | WINDOW                          |
| FIN        | FINISH                                            | P         | OVERFLOW DRAIN                         | W / O     | WITHOUT                         |
| FF         | FINISHED FLOOR                                    | PR        | PAINT                                  | WRGB      | WATER RESISTANT                 |
| FE         | FIRE EXTINGUISHER                                 | PNL       | PANEL                                  | YD        | GYPSUM BOARD                    |
| FEC        | FIRE EXTINGUISHER CABINET                         | PART      | PARTITION                              |           | YARD                            |
| FP         | FIRE PROTECTION                                   | PLAS      | PLASTIC                                |           |                                 |
| FLR        | FLOOR                                             | PLAM      | PLASTIC LAMINATE                       |           |                                 |
| FD         | FLOOR DRAIN                                       |           |                                        |           |                                 |
| F / O      | FACE OF                                           |           |                                        |           |                                 |
| FTG        | FOOTING                                           |           |                                        |           |                                 |

VIEW TITLES:



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COA EXPIRATION: 06/30/2026



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

GENERAL NOTES,  
ABBREVIATIONS &  
SYMBOLS

SHEET NUMBER

A-001

ORIGINAL SHEET SIZE:  
22" X 34"

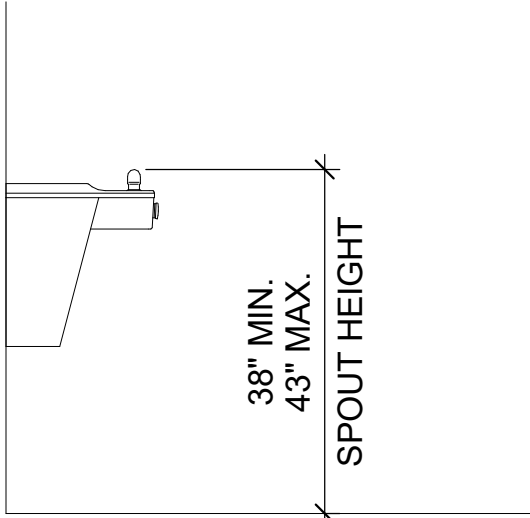
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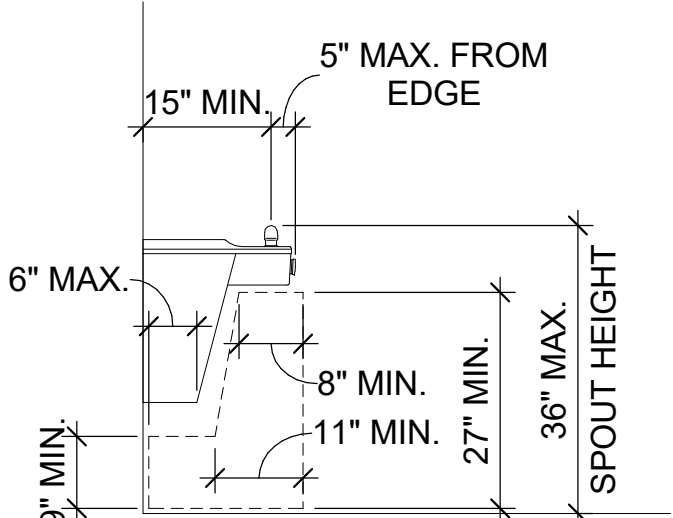
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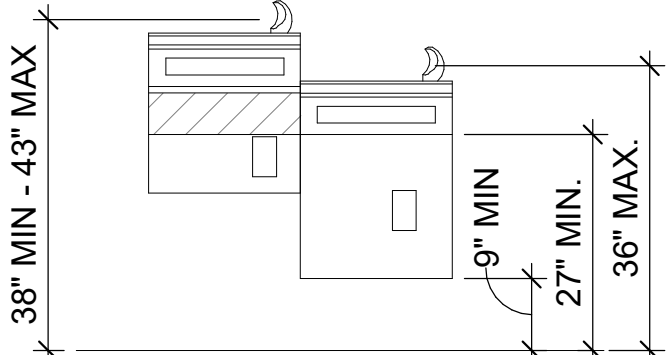
A



STANDARD HEIGHT  
DRINKING FOUNTAIN  
SCALE: 1/2"=1'-0"



ACCESSIBLE HEIGHT  
DRINKING FOUNTAIN  
SCALE: 1/2"=1'-0"



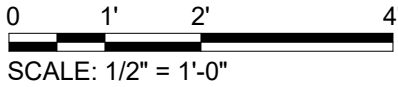
HI-LO DRINKING  
FOUNTAIN  
SCALE: 1/2"=1'-0"

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- THE ACCESSIBLE CRITERIA INDICATED ON THIS SHEET ARE IN COMPLIANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN (2010).
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- INFORM ARCHITECT OF ANY DISCREPANCY WITH OTHER DRAWINGS PRIOR TO INSTALLATION.



"INTERNATIONAL SYMBOL OF ACCESSIBILITY"



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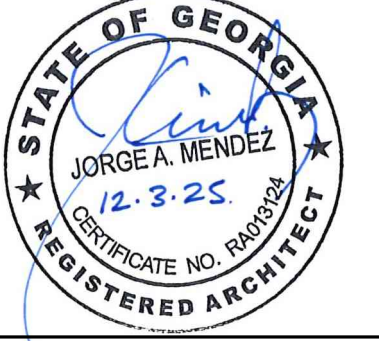
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PROJECT NAME

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DESIGNED BY: CB/JB  
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SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

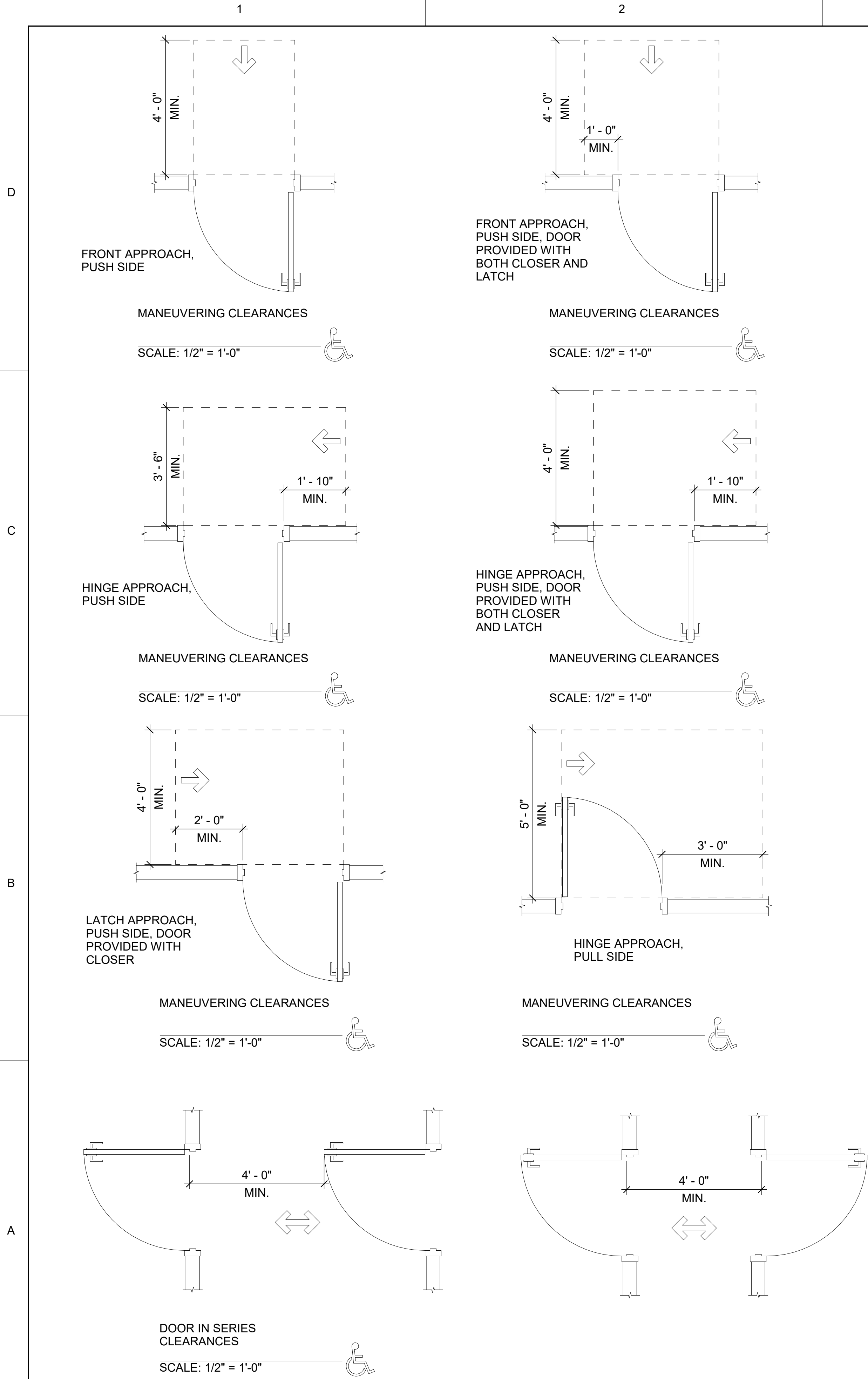
TYPICAL  
MOUNTING  
HEIGHTS &  
LOCATIONS

SHEET NUMBER

A-002

ORIGINAL SHEET SIZE:  
22" X 34"

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- CONTRACTOR TO INFORM ARCHITECT OF ANY DISCREPANCY WITH OTHER DRAWINGS PRIOR TO INSTALLATION.

"INTERNATIONAL SYMBOL OF ACCESSIBILITY"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"



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CHATHAM AREA  
TRANSIT

**PROJECT NAME**

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ROOM

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TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

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DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

**SHEET TITLE**

MANEUVERING  
CLEARANCES

**SHEET NUMBER**

A-003

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

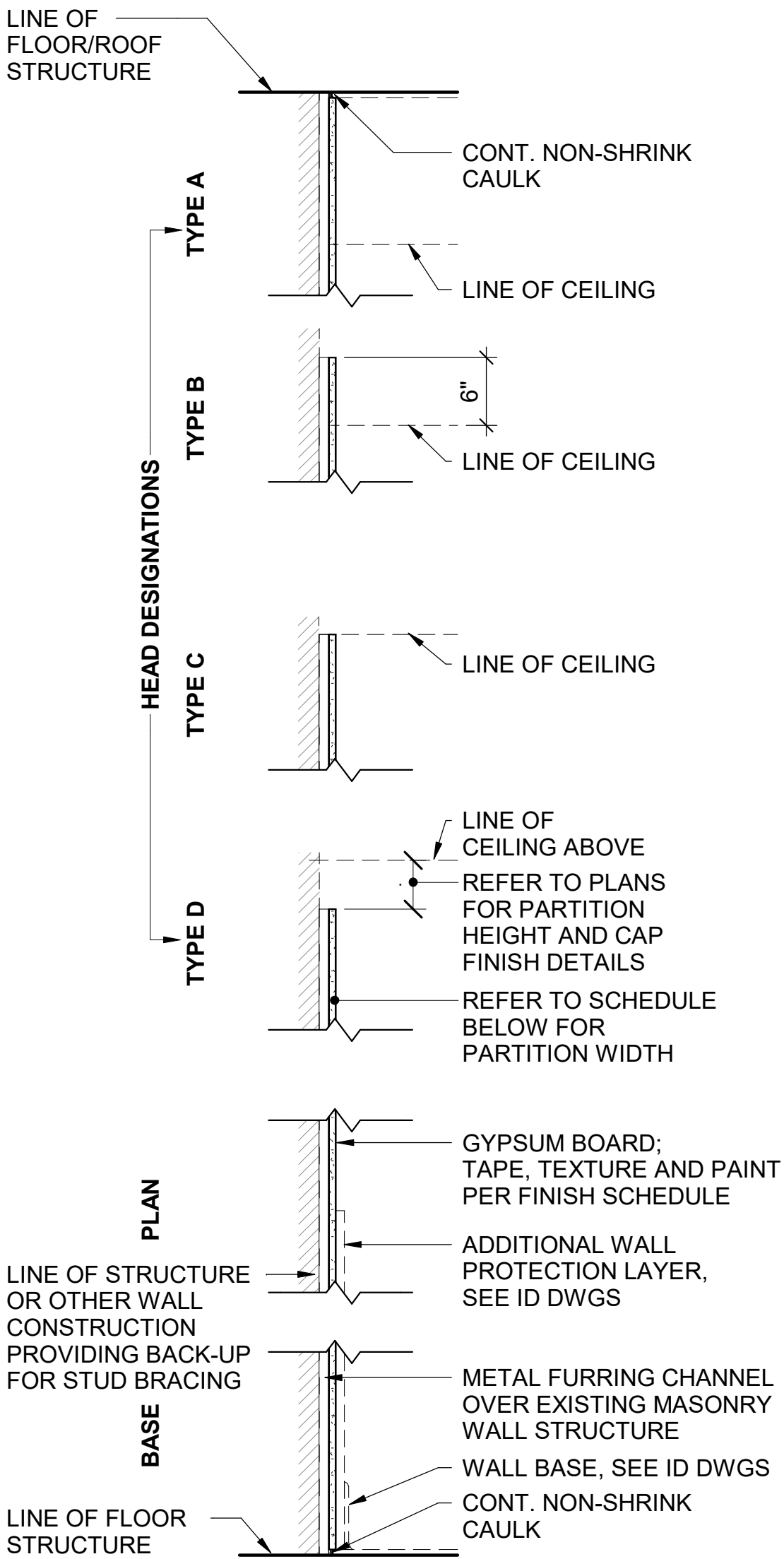
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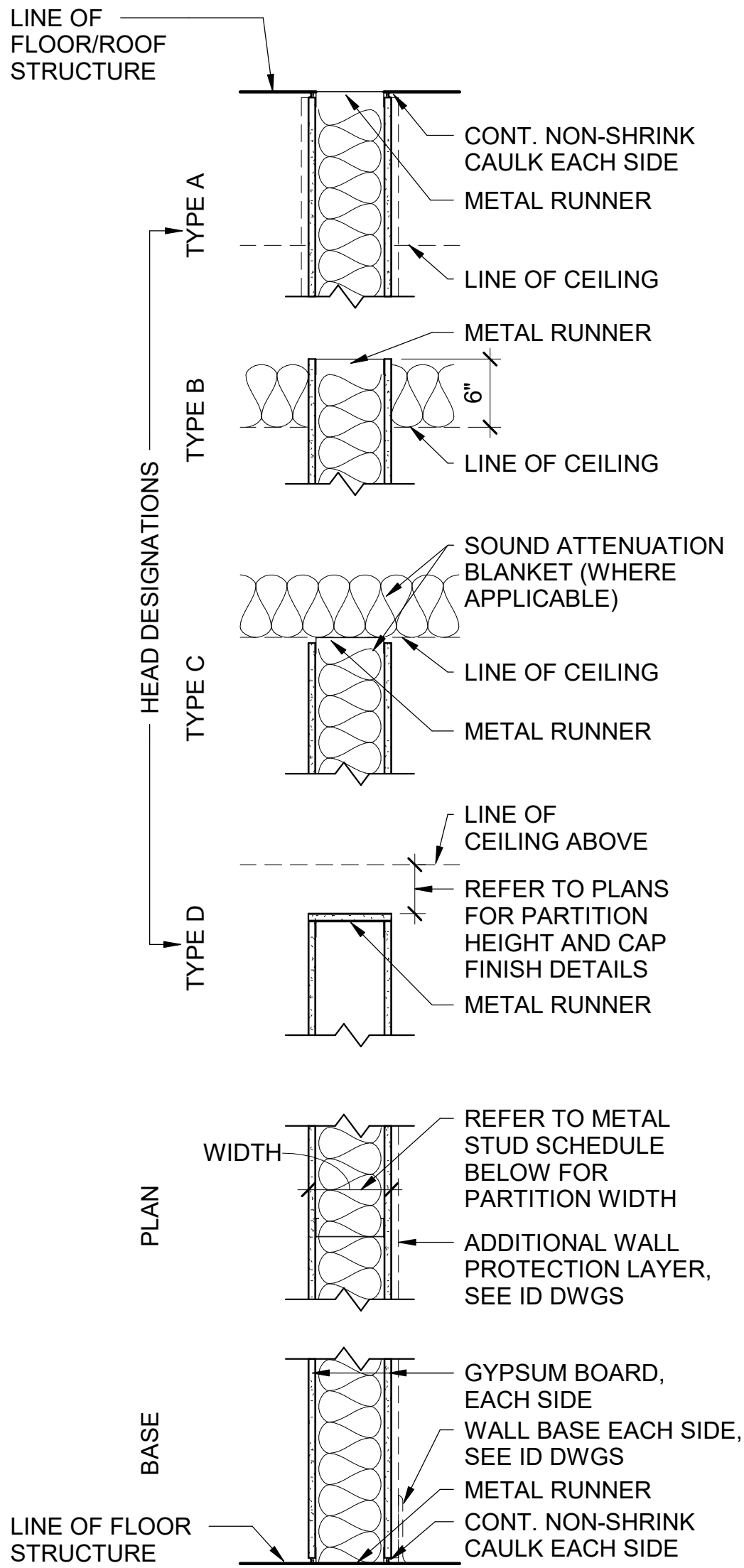
B

A



PARTITION TYPE F0A

| FURRING STUD SCHEDULE |            |              |                 |             |            |
|-----------------------|------------|--------------|-----------------|-------------|------------|
| MARK                  | STUD WIDTH | GWB (LAYERS) | PARTITION WIDTH | FIRE RATING | UL LISTING |
| F0A                   | 1 1/2"     | (1) 5/8"     | 2 1/8"          | 0 HR        | N/A        |
| F0B                   | 1 1/2"     | (1) 5/8"     | 2 1/8"          | 0 HR        | N/A        |



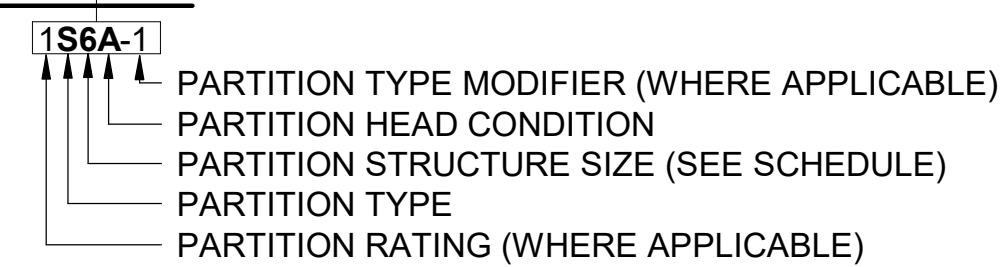
PARTITION TYPE G

| METAL STUD SCHEDULE |            |                        |                 |             |            |
|---------------------|------------|------------------------|-----------------|-------------|------------|
| MARK                | STUD WIDTH | GWB (LAYERS EACH SIDE) | PARTITION WIDTH | FIRE RATING | UL LISTING |
| G3B                 | 3 5/8"     | (1) 5/8"               | 4 7/8"          | 0 HR        | N/A        |
| G3B-1               | 3 5/8"     | (1) 5/8"               | 4 7/8"          | 0 HR        | N/A        |

INTERIOR PARTITION GENERAL NOTES

- PARTITION TYPES DESCRIBE GENERAL REQUIREMENTS FOR PARTITIONS. REFER TO THE MANUFACTURER'S SPECIFICATIONS AND REQUIREMENTS OF APPLICABLE TESTING AGENCIES FOR SPECIFICS OF PARTITION CONSTRUCTION.
- REFER TO "PARTITION TYPE NOMENCLATURE" FOR SYMBOLS USED TO IDENTIFY ADDITIONAL REQUIREMENTS AND MODIFIERS TO BASIC PARTITION TYPES.
- "LINE OF STRUCTURE" INDICATED FOR EACH PARTITION IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS OR GEOMETRY.
- TYPICAL FLOOR PLAN DIMENSIONS OF PARTITIONS ARE TO FACE OF STUD OR CMU UNLESS NOTED OTHERWISE.
- WHERE A CLEAR OPENING DIMENSION IS INDICATED, THE DIMENSION IS MEASURED FACE-TO-FACE BETWEEN FINISHED SURFACES.
- REFER TO SPECIFICATIONS FOR MINIMUM STUD DESIGN CRITERIA, MAXIMUM SPACING AND ALLOWABLE LIMITING HEIGHTS DEFLECTION CRITERIA FOR GYPSUM BOARD.
- METAL STUD GAUGE (IF NOTED) AND UL TEST NUMBERS WILL VARY DEPENDING ON THE MANUFACTURER OF COMPONENTS ACTUALLY USED.
- REFER TO FLOOR PLANS FOR FIRE PROTECTION RATINGS.
- RATED PARTITIONS SHALL BE LABELED ABOVE CEILING WITH LABELS PER AHJ AS REQUIRED. IBC CHAPTER 7 AT MINIMUM.
- PENETRATIONS IN RATED PARTITIONS AND CONNECTIONS OF THE PARTITIONS TO OTHER PORTIONS OF THE WORK TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED DETAILS AND IN COMPLIANCE WITH APPLICABLE TESTING AGENCY REQUIREMENTS.
- INSTALLATION OF GYPSUM BOARD, BACKER BOARD AND BASE BOARD TO CONFORM TO REQUIREMENTS FOR FIRE RATINGS AND ACOUSTICAL RATINGS.
- PROVIDE WATER RESISTANT TYPE GYPSUM BOARD AT AREAS THAT ARE NOTED IN ROOM FINISH SCHEDULE TO RECEIVE CERAMIC OR PORCELAIN TILE FINISH.
- INSTALL BLOCKING OR BACKER MATERIAL FOR ATTACHMENT / MOUNTING OF WALL HUNG ITEMS OR EQUIPMENT DESCRIBED IN THE DOCUMENTS. ALL BLOCKING TO BE FIRE RETARDANT TREATED.
- PARTITIONS THAT ARE REQUIRED TO EXTEND TO THE DECK ABOVE ARE TO HAVE THE GYPSUM BOARD CUT TO FIT WITHIN A 1/4" MAXIMUM TOLERANCE TO THE SHAPE OF THE DECK ABOVE. GYPSUM BOARD SHALL BE CONTINUOUSLY SEALED FOR THE FULL DEPTH OF THE GYPSUM BOARD WITH FLEXIBLE SEALANT.
- PROVIDE METAL STRAPPING @ 24" VERT. TO HOLD BATT INSULATION FOR AREAS WITHOUT GYPSUM WALLBOARD. GYPSUM BOARD IS TO BE CUT SO THAT THE CLEARANCE BETWEEN METALLIC ELECTRICAL OUTLET BOXES AND THE GYPSUM BOARD DOES NOT EXCEED 1/8".
- THE BOTTOM OF THE GYPSUM BOARD AT INTERIOR PARTITIONS IS TO BE 1/4" MINIMUM AND 1/2" MAXIMUM ABOVE THE FLOOR STRUCTURE AND IS TO BE SEALED FOR THE FULL DEPTH OF THE GYPSUM BOARD WITH FLEXIBLE SEALANT.
- AT WALLS WITH SOUND ATTENUATION BLANKETS PROVIDE SOUND ATTENUATION BLANKETS ON CEILING TO 2'-0" ON BOTH SIDES OF WALL EXCEPT AT WALLS WITH SOUND ATTENUATION BLANKETS EXTENDING TO STRUCTURE.
- REFER TO INTERIOR FINISH SCHEDULE FOR WALL FINISHES.
- REFER TO PARTITION TYPE MODIFIERS FOR STC RATED PARTITIONS

PARTITION TYPE NOMENCLATURE



| PARTITION TYPES           |                             |         |                             | PARTITION HEAD CONDITION |                                      |
|---------------------------|-----------------------------|---------|-----------------------------|--------------------------|--------------------------------------|
| M                         | CONCRETE MASONRY UNIT (CMU) | F       | FURRING                     | A                        | BOTTOM OF STRUCTURE                  |
|                           |                             | W       | WOOD STUD                   | B                        | 6" ABOVE CEILING                     |
| G                         | METAL STUD                  | P       | INSULATED METAL PANEL (IMP) | C                        | TO BOTTOM OF CEILING                 |
| S                         | SHAFTWALL                   |         |                             | D                        | PARTIAL HEIGHT                       |
| PARTITION STRUCTURE WIDTH |                             |         |                             | PARTITION TYPE MODIFIER  |                                      |
| #                         | METAL                       | WOOD    | CMU                         | IMP                      | 1 SOUND BATT MINIMUM STC RATING - 50 |
| 0                         | *0-7/8"                     | --      | --                          | --                       | 2                                    |
| 1                         | *1-1/2"                     | --      | --                          | --                       |                                      |
| 2                         | 2-1/2"                      | *1-1/2" | --                          | 2"                       |                                      |
| 3                         | 3-5/8"                      | 2-1/2"  | --                          | 3"                       |                                      |
| 4                         | 4"                          | 3-1/2"  | 3-5/8"                      | 4"                       | 3                                    |
| 6                         | 6"                          | 5-1/2"  | 5-5/8"                      | 6"                       |                                      |
| 7                         | --                          | --      | --                          | 7"                       |                                      |
| 8                         | 8"                          | 7-1/4"  | 7-5/8"                      | 8"                       |                                      |
| 10                        | 10"                         | 9-1/4"  | --                          | --                       | 4                                    |
| 12                        | 12"                         | 11-1/4" | 11-5/8"                     | --                       |                                      |
|                           |                             |         |                             | *                        | FURRING MEMBER                       |



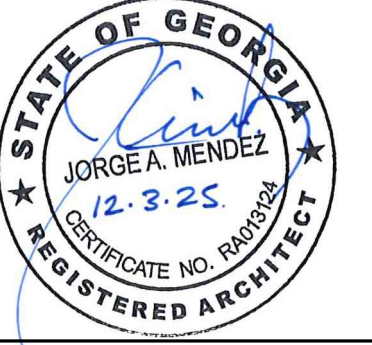
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DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

PARTITION TYPES  
& DETAILS

SHEET NUMBER

A-004

ORIGINAL SHEET SIZE:  
22" X 34"



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DEMOLITION KEYNOTES

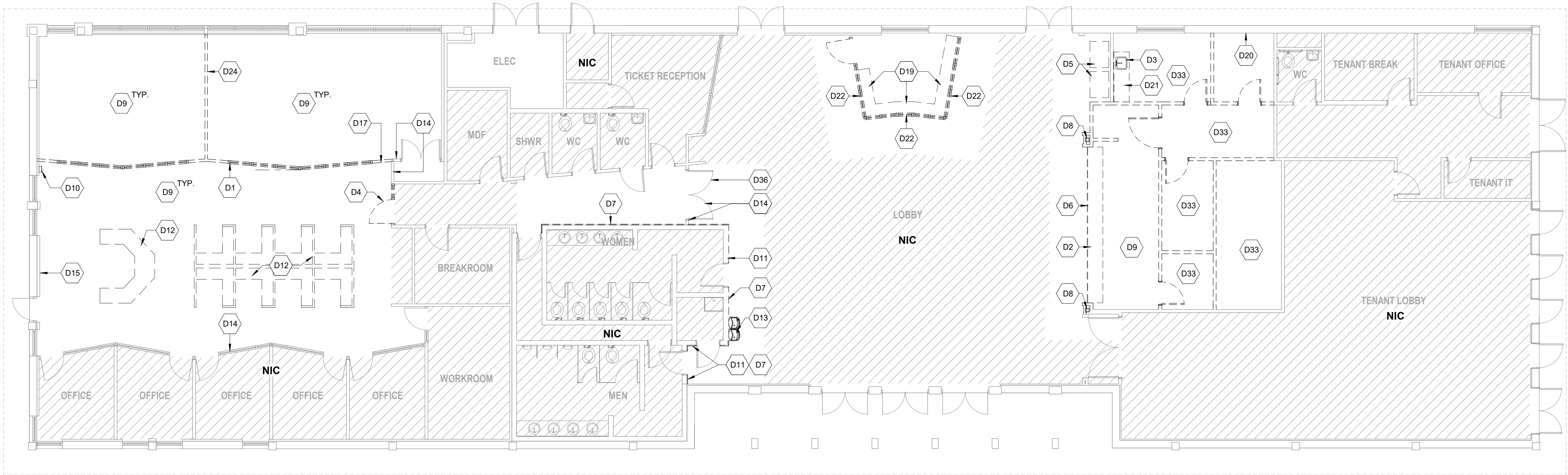
|     |                                                                                                                                                                                                                                                                                                         |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D1  | REMOVE EXISTING DEMOUNTABLE WALL AND RETURN TO OWNER FOR REUSE AT THEIR DISCRETION. REPAIR ADJACENT SURFACES AS NEEDED.                                                                                                                                                                                 |
| D2  | REMOVE EXISTING MILLWORK. PATCH AND REPAIR FLOOR.                                                                                                                                                                                                                                                       |
| D3  | REMOVE EXISTING MILLWORK AND PLUMBING FIXTURES. SEE MECHANICAL DRAWINGS.                                                                                                                                                                                                                                |
| D4  | EXISTING DOOR SWING DIRECTION TO BE CHANGED TO EGRESS TOWARD LOBBY. GC TO CONSULT DEMOUNTABLE WALL CONSULTANT. ASSOCIATED EXIT SIGNAGE TO BE RELOCATED ACCORDINGLY. REPAIR ADJACENT SURFACES.                                                                                                           |
| D5  | REMOVE VENDING AND RETURN TO OWNER FOR REUSE AT THEIR DISCRETION.                                                                                                                                                                                                                                       |
| D6  | REMOVE EXISTING GREYHOUND GRAPHIC AND RETURN TO OWNER FOR REUSE.                                                                                                                                                                                                                                        |
| D7  | REMOVE EXISTING WALL TILE AND ASSOCIATED SUBSTRATE AND SHEATHING. PATCH AND REPAIR WALLS.                                                                                                                                                                                                               |
| D8  | REMOVE EXISTING ROLL-UP DOOR AND TUBE-STEEL STRUCTURE. GRIND DOWN STRUCTURE AT FLOOR, GROUT-FILL TUBE STEEL, AND PROVIDE ARDEX LEVELING. PREPARE TO RECEIVE FLOOR FINISHES.                                                                                                                             |
| D9  | REMOVE EXISTING FLOOR FINISHES. COORDINATE CUTTING AND PATCHING FLOOR SLAB FOR ELECTRICAL FLOOR BOX LOCATIONS WITH ELECTRICAL DRAWINGS. PREPARE SURFACE FOR FINISHES.                                                                                                                                   |
| D10 | RELOCATE EXISTING FIRE EXTINGUISHER CABINET TO OPPOSITE SIDE OF ADJACENT WINDOW.                                                                                                                                                                                                                        |
| D11 | REMOVE EXISTING ROOM SIGNAGE. STORE AND PROTECT DURING CONSTRUCTION. PREPARE TO REINSTALL EXISTING SIGNAGE AT SAME LOCATION.                                                                                                                                                                            |
| D12 | REMOVE AND RETURN EXISTING FURNIURE AND FUNITURE SYSTEMS TO OWNER FOR STORAGE DURING CONSTRUCTION. COORDINATE RELOCATION WITH OWNER.                                                                                                                                                                    |
| D13 | REMOVE AND STORE DRINKING FOUNTAIN DURING CONSTRUCTION. REINSTALL BACK TO EXACT LOCATION AS EXISTING, ENSURING THAT THE LEADING EDGE IS MOUNTED AT 27" HEIGHT A.F.F. PER ADA. PREPARE TO EXTEND OUTLETS AND PLUMBING FOR DRINKING FOUNTAIN. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFO. |
| D14 | PROTECT DEMOUNTABLE WALLS DURING CONSTRUCTION.                                                                                                                                                                                                                                                          |
| D15 | PROTECT CAT GRAPHICS AND SIGNAGE DURING CONSTRUCTION.                                                                                                                                                                                                                                                   |
| D17 | EXISTING DEMOUNTABLE WALL CORNER TO RECEIVE STUD WALL. GC TO CONSULT DEMOUNTABLE WALL CONSULTANT TO ACHIEVE A SMOOTH AND CONTINOUS APPEARANCE.                                                                                                                                                          |
| D19 | REMOVE EXISTING SOLID SURFACE COUNTER AT DEMOUNTABLE WALLS. GC TO COORDINATE WITH DEMOUNTABLE WALL CONSULTANT FOR REUSE OF ASSOCAITED STORAGE UNITS BELOW.                                                                                                                                              |
| D20 | EXISTING REFRIGERANT PIPES TO BE CAPPED AND SEALED. PATCH AND REPAIR WALLS AS NEEDED. SEE MECHANICAL DRAWINGS.                                                                                                                                                                                          |
| D21 | REMOVE EXISTING WATER HEATER. SEE MECHANICAL AND ELECTRICAL DRAWINGS.                                                                                                                                                                                                                                   |
| D22 | RELOCATE EXISTING DEMOUNTABLE WALL. GC TO COORDINATE WITH DEMOUNTABLE WALL CONSULTANT FOR REUSE AND RECONFIGURATION.                                                                                                                                                                                    |
| D24 | REMOVE EXISTING DEMOUNTABLE WALL AND RETURN TO OWNER FOR REUSE AT THEIR DISCRETION. REPAIR ADJACENT SURFACES- FILL CONNECTOR HOLES AND ANY ASSOCIATED DAMAGES. PATCH AND REPAIR GRID AND INFILL WITH NEW ACT.                                                                                           |
| D33 | REMOVE EXISTING WALL AND FLOOR FINISHES.                                                                                                                                                                                                                                                                |
| D36 | EQUIP EXISTING DOOR WITH PANIC HARDWARE ON PUSH SIDE.                                                                                                                                                                                                                                                   |

DEMOLITION PLAN LEGEND

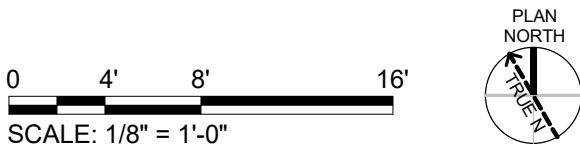
|  |                                                                |
|--|----------------------------------------------------------------|
|  | EXISTING CMU AND / OR STUD WALLS / PARTITIONS TO REMAIN        |
|  | EXISTING CMU AND / OR STUD WALLS / PARTITIONS TO BE DEMOLISHED |
|  | EXISTING DOOR, FRAME AND ACCESSORIES TO REMAIN                 |
|  | EXISTING DOOR, FRAME AND ACCESSORIES TO BE DEMOLISHED          |
|  | EXISTING WINDOW SYSTEM AND ACCESSORIES TO REMAIN               |
|  | EXISTING DOOR, FRAME AND ACCESSORIES TO BE DEMOLISHED          |
|  | N.I.C. - NOT IN CONTRACT                                       |

GENERAL NOTES

- SEE SHEET A-001 FOR GENERAL NOTES.
- EXISTING CONDITIONS INDICATED ON THE DRAWINGS SHALL BE FIELD-VERIFIED BY THE CONTRACTOR. ANY DIFFERING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER.
- DO NOT CUT INTO, REMOVE OR ALTAR ANY STRUCTURAL MEMBER UNLESS IT IS SPECIFICALLY NOTED OR SHOWN ON THE STRUCTURAL DRAWINGS.
- WHILE WORK UNDER THIS CONTRACT IS IN PROGRESS, PROTECT EXISTING BUILDING, GROUNDS AND CONTENTS INCLUDING ADJACENT AREAS FROM DAMAGE OR HARM. COORDINATE DEMOLITION WORK WITH OTHER ELEMENTS OF THE WORK TO ENSURE THAT THE BUILDING ENVELOPE REMAINS WATER TIGHT.
- THE PROJECT REQUIRES PLANNED SCHEDULING OF THE SEQUENCE OF PHASES, APPROVALS, COORDINATION WITH THE OWNER'S REPRESENTATIVE AND DELIVERY OF MATERIALS IN A TIMELY FASHION ARE REQUIRED TO INSURE THAT THE AREAS TO REMAIN OPERATIONAL AND IT'S CONTENTS ARE NOT DAMAGED OR DISTURBED IN ANY WAY. THIS INCLUDES BUT IS NOT LIMITED TO WATER LEAKING THROUGH OPENINGS EXPOSED BY WINDOW, ROOF DEMOLITION & ETC.
- DEMOLITION MATERIAL, EQUIPMENT AND DEBRIS SHALL BE REMOVED AT THE END OF WORK DAY FROM THE SITE TO AN AREA DESIGNATED BY THE OWNER.
- THE DEMOLITION CONTRACTOR SHALL REVIEW INSTALLATION DRAWINGS FOR NEW MATERIALS AND BE FAMILIAR WITH LIMITS OF DEMOLITION. THE CONTRACTOR SHALL KNOW AND UNDERSTAND NEW MATERIAL INSTALLATION IN AREAS WHERE EXISTING MATERIALS ARE REMOVED.
- PROVIDE TEMPORARY SHELTER OR PORTALS AT ENTRANCES AND EXIT DOORS AS MAY BE REQUIRED FOR PROTECTION FROM FALLING DEBRIS OR OPEN TRENCHES. TEMPORARY PORTALS AND WALKWAYS ARE TO MEET CODE REQUIREMENTS FOR WIDTH AND WALKING SURFACE CONTINUITY.
- NOTIFY OWNER'S TECHNICAL REPRESENTATIVE IMMEDIATELY IF ANY SUSPECTED HAZARDOUS MATERIAL IS FOUND.
- REMOVE EXISTING FLOOR FINISHES DOWN TO BARE CONCRETE. PREPARE CONCRETE SLAB TO RECEIVE FINISHES.
- REMOVE EXISTING WALL FINISHES DOWN TO GYPSUM BOARD. PREPARE SUBSTRATE TO RECEIVE FINISHES.
- INCIDENTAL PATCHING, PAINTING, FACE-PLATE REPLACEMENT AND OTHER SUCH REPAIRS MAY BE REQUIRED FOR INSTALLATION OF UTILITIES THROUGH NON-SCOPE AREAS. CONTRACTOR IS RESPONSIBLE FOR RESTORING SUCH AREAS TO THE SAME CONDITION AS PRIOR CONSTRUCTION.
- REFER TO ELECTRICAL, AND MECHANICAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION & REPAIRS.



A1 DEMOLITION FLOOR PLAN  
SCALE: 1/8" = 1'-0"



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COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

DEMOLITION  
FLOOR PLAN

SHEET NUMBER

AD101

ORIGINAL SHEET SIZE:  
22" X 34"

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D

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B

A

DEMOLITION KEYNOTES

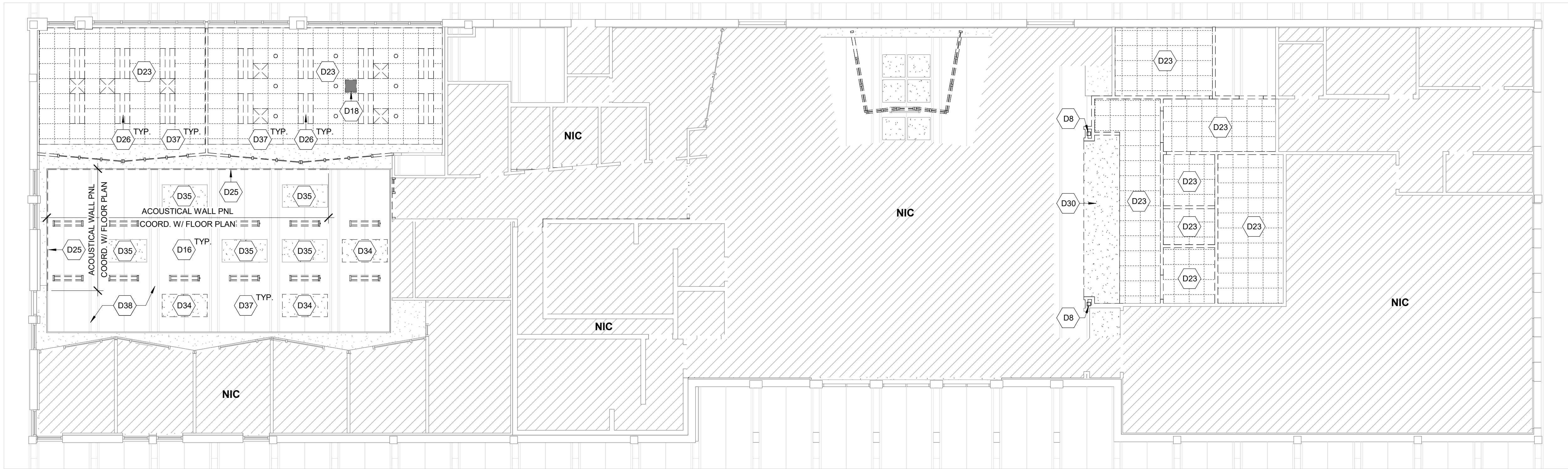
|     |                                                                                                                                                                             |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D8  | REMOVE EXISTING ROLL-UP DOOR AND TUBE-STEEL STRUCTURE. GRIND DOWN STRUCTURE AT FLOOR, GROUT-FILL TUBE STEEL, AND PROVIDE ARDEX LEVELING. PREPARE TO RECEIVE FLOOR FINISHES. |
| D16 | REMOVE EXISTING LIGHT FIXTURES. STORE AND PROTECT DURING CONSTRUCTION. PREPARE TO REINSTALL EXISTING FIXTURES AT CORRIDOR PER ELECTRICAL DRAWINGS.                          |
| D18 | REMOVE EXISTING CEILING-MOUNTED PROJECTOR AND RETURN TO OWNER FOR REUSE AT THEIR DISCRETION. PATCH OR REPLACE CEILING PANEL.                                                |
| D23 | REMOVE EXISTING ACOUSTICAL CEILING TILE. PATCH AND REPAIR WALL.                                                                                                             |
| D25 | REMOVE EXISTING ACOUSTICAL WALL PANEL. PATCH AND REPAIR WALLS. PREPARE TO REINSTALL ON CORRIDOR WALL. CONTRACTOR TO MATCH MOUNTING HEIGHT WITH EXISTING PANELS.             |
| D26 | REMOVE EXISTING LIGHTING. PATCH AND REPAIR CEILING.                                                                                                                         |
| D30 | REMOVE EXISTING CEILING FOR REMOVAL OF DUCTWORK. SEE MECHANICAL FOR FURTHER DIRECTIVE.                                                                                      |
| D34 | REMOVE EXISTING ACOUSTICAL CEILING BAFFLE. PATCH AND REPAIR WALL.                                                                                                           |
| D35 | EXISTING ACOUSTICAL CEILING BAFFLE TO REMAIN. PATCH AND REPAIR WALL.                                                                                                        |
| D37 | ENSURE EXISTING FIRE SPRINKLER HEADS ARE PROTECTED DURING CONSTRUCTION.                                                                                                     |
| D38 | SPRINKLER HEADS TO BE EXTENDED INTO BOARD ROOM AREA; WORK TO BE DELEGATED DESIGN.                                                                                           |

DEMOLITION RCP PLAN LEGEND

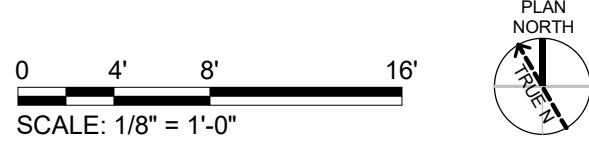
|  |                                                                |
|--|----------------------------------------------------------------|
|  | EXISTING CMU AND / OR STUD WALLS / PARTITIONS TO REMAIN        |
|  | EXISTING CMU AND / OR STUD WALLS / PARTITIONS TO BE DEMOLISHED |
|  | EXISTING 2X2 ACT TO BE DEMOLISHED                              |
|  | EXISTING GYP. CEILING TO BE DEMOLISHED                         |
|  | EXISTING 1X4 LIGHT FIXTURE TO BE DEMOLISHED                    |
|  | EXISTING DOWNLIGHT TO REMAIN                                   |
|  | EXISTING SUPPLY DIFFUSER TO REMAIN                             |
|  | EXISTING RETURN DIFFUSER TO REMAIN                             |
|  | N.I.C. - NOT IN CONTRACT                                       |

GENERAL NOTES

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**A1** DEMOLITION REFLECTED CEILING PLAN  
SCALE: 1/8" = 1'-0"



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PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
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610 WEST  
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SAVANNAH, GA 31401

DRAWING ISSUE

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DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

DEMOLITION  
REFLECTED  
CEILING PLAN

SHEET NUMBER

AD131

ORIGINAL SHEET SIZE:  
22" X 34"

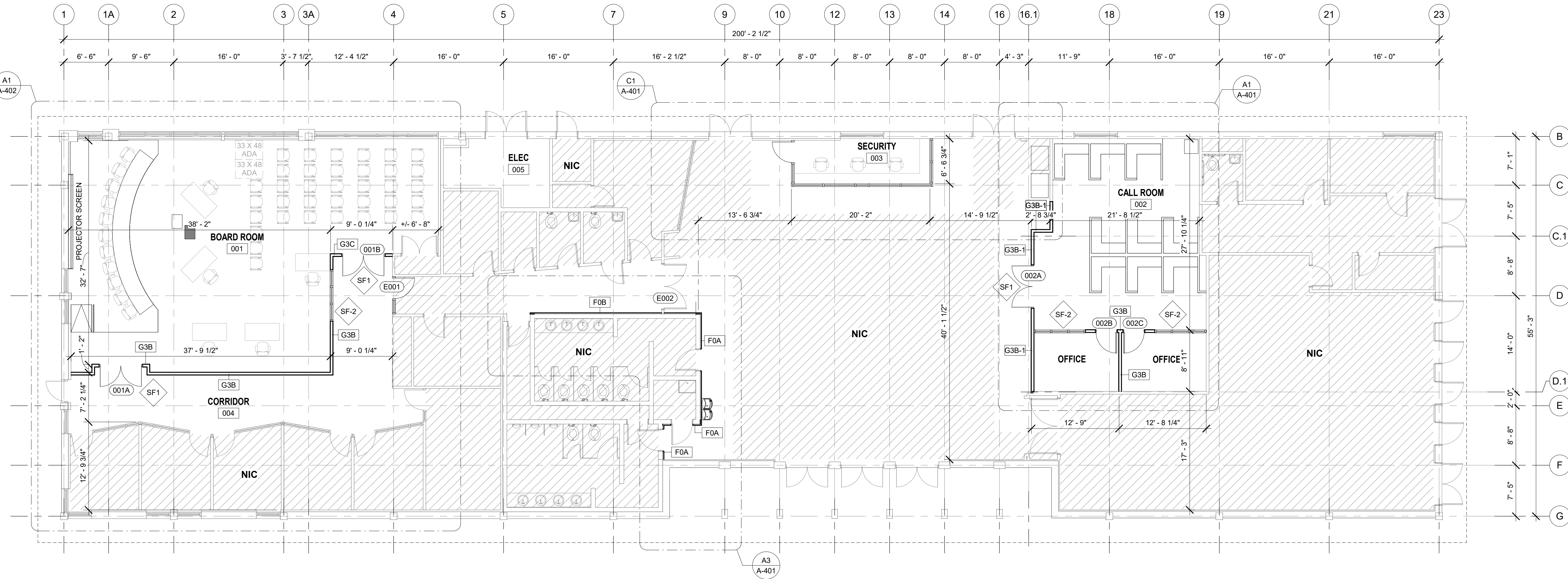
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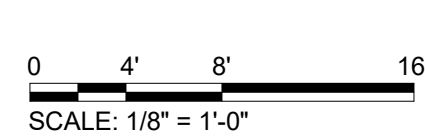
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**A1** FLOOR PLAN  
SCALE: 1/8" = 1'-0"



### SPRINKLER AND FIRE ALARM DESIGN REQUIREMENTS

1. A GEORGIA LICENSED FIRE SPRINKLER CONTRACTOR SHALL AMEND THE EXISTING FIRE SPRINKLER SYSTEM IN THE IN SCOPE AREAS, IN ACCORDANCE WITH NFPA 13 AND GEORGIA AMENDMENTS. THE FIRE SUPPRESSION SCOPE OF WORK CONSISTS OF THE REMOVAL OF EXISTING SPRINKLER HEADS THROUGHOUT ALL SCOPE AREAS. EXISTING BRANCHLINES AND PIPING MUST REMAIN AND BE REUSED TO SERVE NEW SPRINKLER HEADS. NEW SPRINKLER HEADS WILL BE INSTALLED THROUGHOUT ALL SCOPE AREAS.
2. A GEORGIA LICENSED FIRE ALARM CONTRACTOR SHALL AMEND THE EXISTING FIRE ALARM SYSTEM IN THE IN SCOPE AREAS, IN ACCORDANCE WITH NFPA 72 AND GEORGIA AMENDMENTS. THE FIRE ALARM SCOPE OF WORK CONSISTS OF THE REMOVAL OF EXISTING FIRE ALARM DEVICES, ASSOCIATED CONDUIT, AND BACKBOXES THROUGHOUT ALL SCOPE AREAS. SCOPE AREAS WILL BE PROVIDED WITH NEW FIRE ALARM DEVICES INCLUDING NOTIFICATION APPLIANCES AND INITIATING DEVICES. NEW FIRE ALARM DEVICES WILL BE CONNECTED TO THE EXISTING FACU.

### SHEET NOTES

1. SEE SHEET A-001 FOR GENERAL NOTES, ABBREVIATIONS & SYMBOLS.
2. SEE SHEET A-002 FOR TYPICAL MOUNTING HEIGHTS, LOCATIONS AND DETAILS.
3. SEE SHEET A-005 FOR PARTITION TYPES.
4. SEE SHEET A-601 FOR DOOR SCHEDULE AND TYPES.
5. SEE SHEET I-131 FOR ROOM FINISH SCHEDULE.
6. DIMENSIONS OF EXTERIOR WALLS ARE TO INSIDE FACE OF CMU OR EXTERIOR FINISH FACE U.N.O.
7. DIMENSIONS OF INTERIOR WALLS AND PARTITIONS ARE TO FACE OF STUD, FACE OF CMU OR FACE OF IMP U.N.O.
8. DOOR OPENINGS SHALL BE LOCATED @ 8" FROM FACE OF ADJACENT PARTITION IN CMU PARTITIONS OR 5" FROM FACE OF PARTITION IN STUD AND PANEL PARTITIONS, U.N.O.
9. CONTRACTOR SHALL LOCATE BLOCKING AND BACKING AS REQUIRED FOR WALL MOUNTED EQUIPMENT, CASEWORK/MILLWORK AND FURNISHINGS.
10. SEE SHEET I-300 FOR FURNITURE LAYOUT.
11. MONITORS, PROJECTOR, AND PROJECTOR SCREEN TO BE OWNER PROVIDED. CONTRACTOR TO COORDINATE POWER SUPPLY LOCATIONS.

### FLOOR PLAN LEGEND

- EXISTING STUD WALLS / PARTITIONS TO REMAIN
- NEW STUD WALLS / PARTITIONS
- N.I.C. - NOT IN CONTRACT



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CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

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DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

FLOOR PLAN

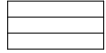
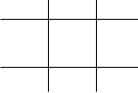
SHEET NUMBER

A-101

ORIGINAL SHEET SIZE:  
22" X 34"

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### REFLECTED CEILING PLAN LEGEND

- |                                                                                     |                                                           |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------|
|  | DOWNLIGHT- CENTER IN ACOUST. CEILING PANELS, TYP., U.N.O. |
|  | 1' X 4' PENDANT LIGHT FIXTURE                             |
|  | 2' X 4' LAY-IN LIGHT FIXTURE                              |
|  | SUPPLY AIR DEVICE                                         |
|  | RETURN AIR DEVICE                                         |
|  | EXHAUST AIR DEVICE                                        |
|  | CEILING MOUNTED EXIT SIGN                                 |
|  | WALL MOUNTED EXIT SIGN                                    |
|  | ACT-1: 2'-0" x 2'-0" ACOUSTICAL CEILING SYSTEM            |
|  | GYP-1: 5/8" STANDARD GYPSUM BOARD                         |

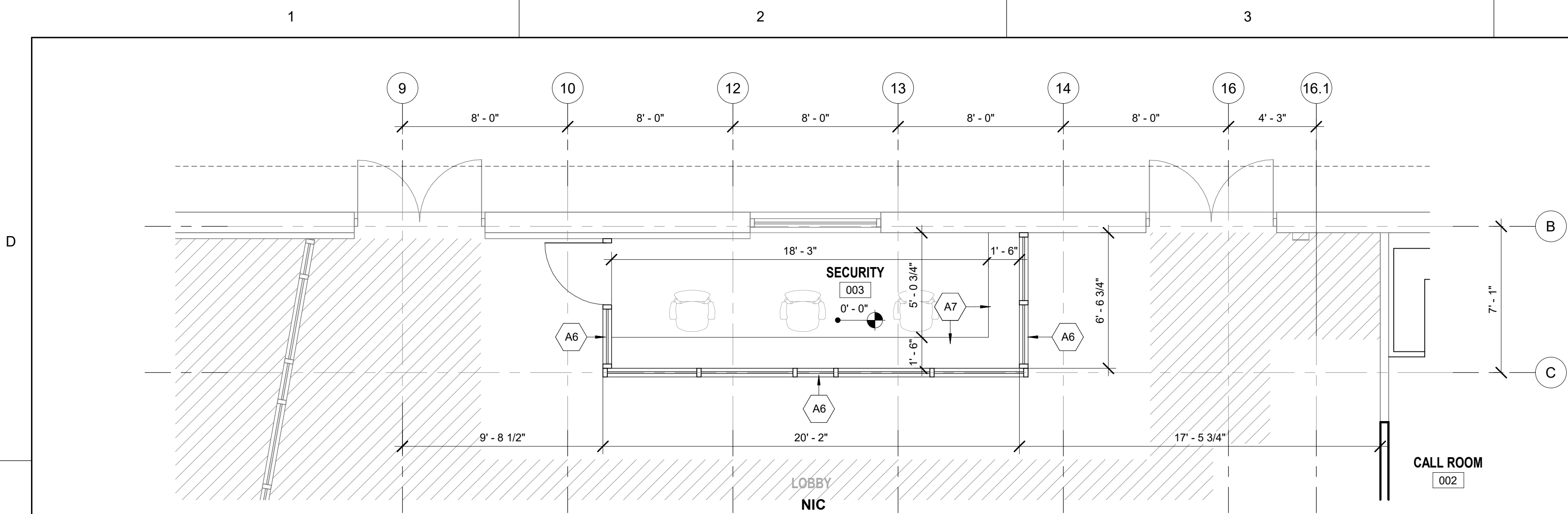
|                                                                                     |                                                                                                              |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| EXP                                                                                 | EXP: EXPOSED TO STRUCTURE; PAINT                                                                             |
|  | NIC - NOT IN CONTRACT                                                                                        |
| <b>MONITOR</b>                                                                      | MONITOR WITH MOUNT - PROVIDED BY ALLOWANCE, CONTRACTOR INSTALLED                                             |
| <b>PROJECTION SCREEN</b>                                                            | PROJECTION SCREEN - SEE SPECIFICATION ON INTERIOR ELEVATIONS, PROVIDED BY CONTRACTOR INSTALLED BY CONTRACTOR |
|  | MOUNTED PROJECTOR - CEILING-MOUNTED, PROVIDED BY ALLOWANCE, CONTRACTOR INSTALLED                             |
| <b>PROJECTOR</b>                                                                    |                                                                                                              |



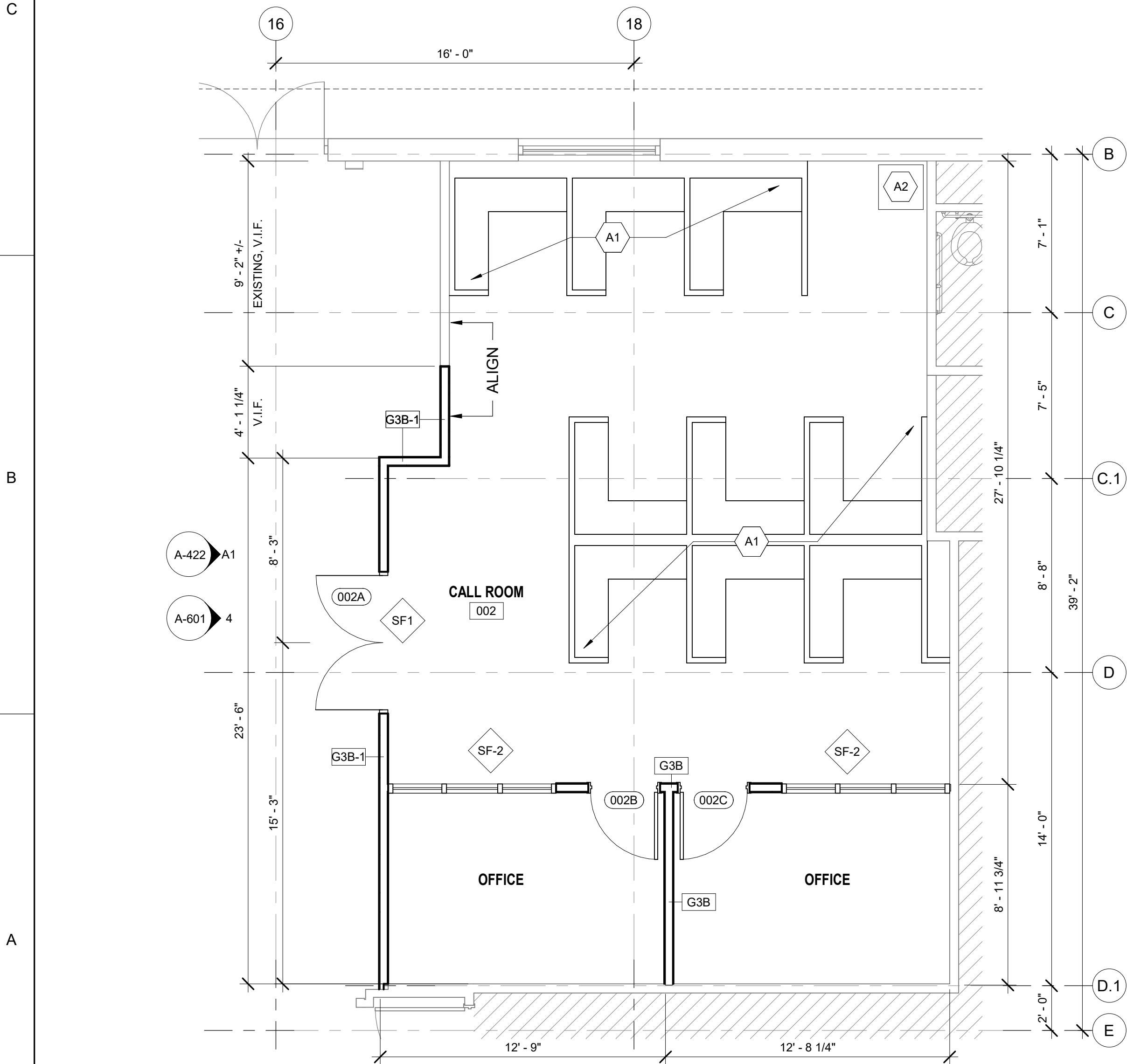
ORIGINAL SHEET SIZE:  
22" X 34"

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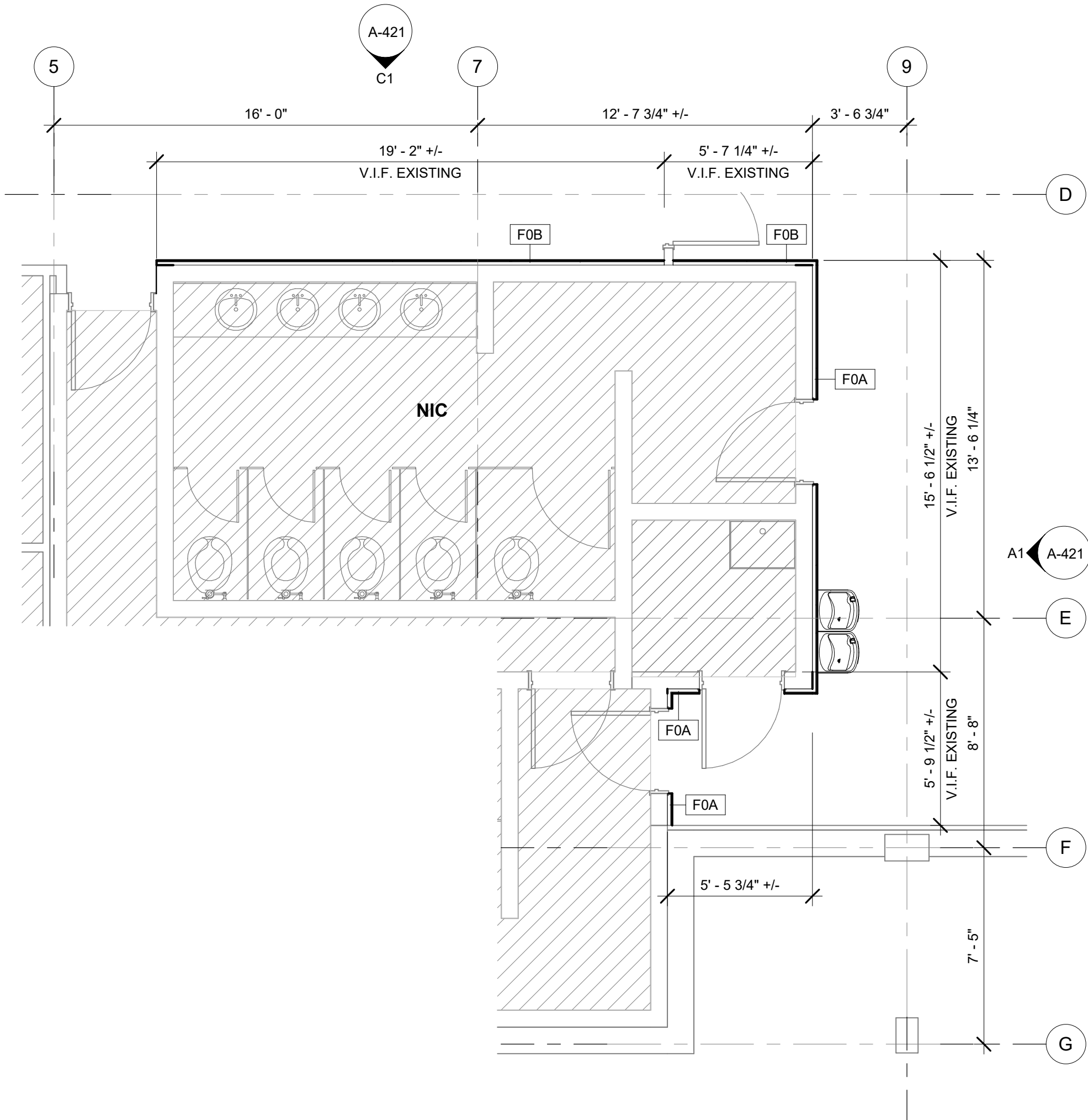
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**C1** ENLARGED SECURITY ROOM FLOOR PLAN  
SCALE: 1/4" = 1'-0"



**A1** ENLARGED CALL ROOM FLOOR PLAN  
SCALE: 1/4" = 1'-0"



**A3** ENLARGED RESTROOM FLOOR PLAN  
SCALE: 1/4" = 1'-0"

### SHEET NOTES

- SEE SHEET A-001 FOR GENERAL NOTES, ABBREVIATIONS & SYMBOLS.
- SEE SHEET A-002 FOR TYPICAL MOUNTING HEIGHTS, LOCATIONS AND DETAILS.
- SEE SHEET A-005 FOR PARTITION TYPES.
- SEE SHEET A-601 FOR DOOR SCHEDULE AND TYPES.
- SEE SHEET I-131 FOR ROOM FINISH SCHEDULE.
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- DOOR OPENINGS SHALL BE LOCATED @ 8" FROM FACE OF ADJACENT PARTITION IN CMU PARTITIONS OR 5" FROM FACE OF PARTITION IN STUD AND PANEL PARTITIONS, U.N.O.
- CONTRACTOR SHALL LOCATE BLOCKING AND BACKING AS REQUIRED FOR WALL MOUNTED EQUIPMENT, CASEWORK/MILLWORK AND FURNISHINGS
- SEE SHEET I-300 FOR FURNITURE LAYOUT.
- MONITORS, PROJECTOR, AND PROJECTOR SCREEN TO BE OWNER PROVIDED. CONTRACTOR TO COORDINATE POWER SUPPLY LOCATIONS.

### FLOOR PLAN LEGEND

- EXISTING STUD WALLS / PARTITIONS TO REMAIN
- NEW STUD WALLS / PARTITIONS
- N.I.C. - NOT IN CONTRACT

### KEYNOTES

|    |                                                                                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------------------------------|
| A1 | FURNITURE BY OWNER. SEE FURNITURE PLAN.                                                                                                     |
| A2 | EQUIPMENT BY OWNER.                                                                                                                         |
| A6 | REUSED EXISTING DEMOUNTABLE WALL. GLAZING TO RECEIVE ONE-WAY SEE-THROUGH FILM. COORDINATE WITH DEMOUNTABLE WALL CONSULTANT FOR APPLICATION. |
| A7 | SOLID SURFACE COUNTER AND ASSOCIATED STORAGE BELOW BY DEMOUNTABLE WALL CONSULTANT.                                                          |

0 2' 4' 8'  
SCALE: 1/4" = 1'-0"



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COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

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610 WEST  
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SAVANNAH, GA 31401

DRAWING ISSUE

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DESCRIPTION

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DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

ENLARGED  
FLOOR PLANS

SHEET NUMBER

A-401

ORIGINAL SHEET SIZE:  
22" X 34"

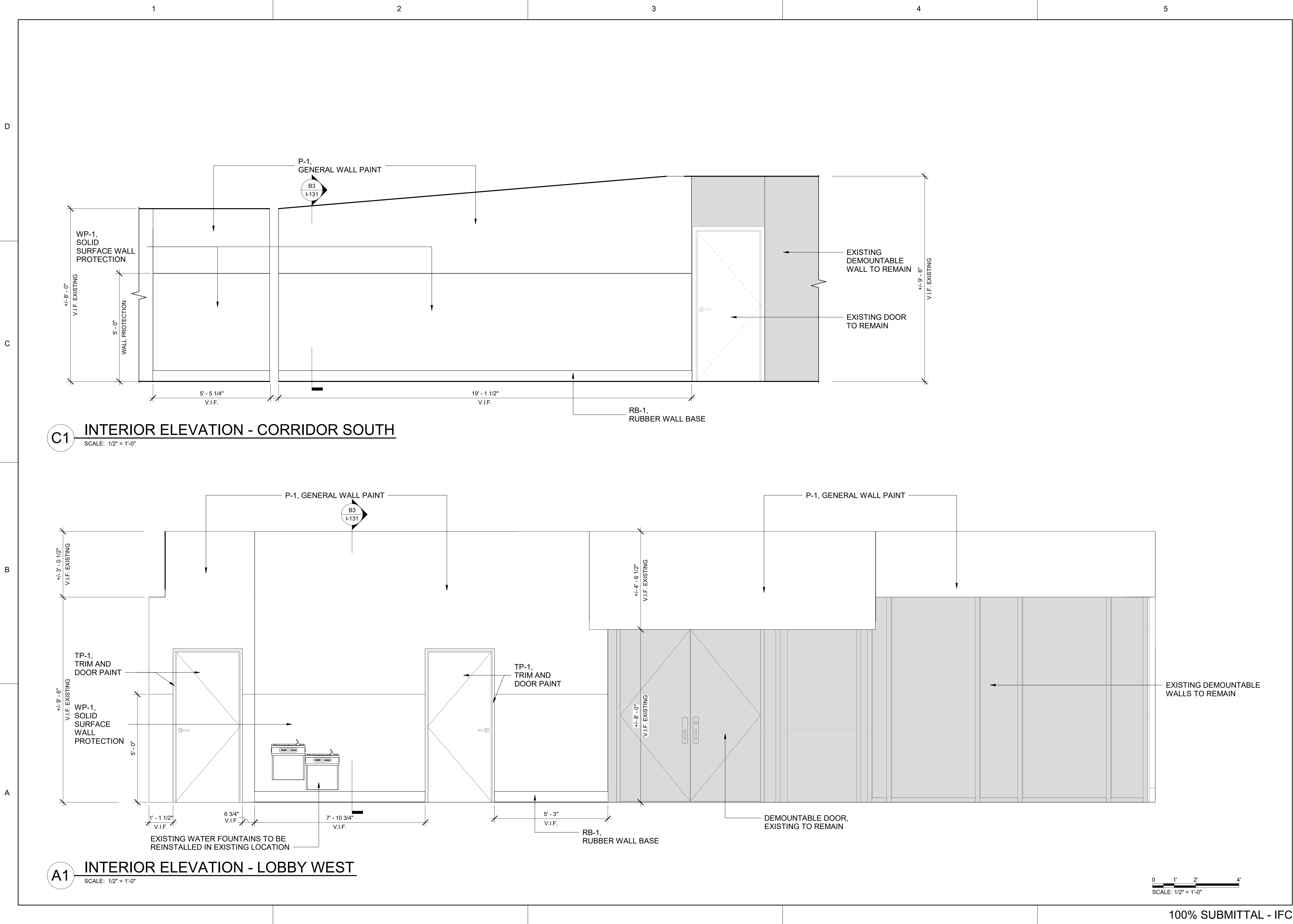
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|    |                                                                                           |
|----|-------------------------------------------------------------------------------------------|
| A3 | PROJECTOR AND PROJECTOR SCREEN BY OWNER. CONTRACTOR TO COORDINATE POWER SUPPLY LOCATIONS. |
| A5 | BUILT-UP RAISED FLOORING. WOOD TRIM TO BE PAINTED WD-1, SEE FINISH LEGEND.                |

ORIGINAL SHEET SIZE:  
22" X 34"

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EOR/AOR SEAL



CLIENT INFORMATION

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TRANSIT

PROJECT NAME

ITC BOARD  
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CHATHAM AREA  
TRANSIT  
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OGLETHORPE AVE  
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DRAWN BY: JB/EB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

INTERIOR  
ELEVATIONS

SHEET NUMBER

A-421

ORIGINAL SHEET SIZE:  
22" X 34"

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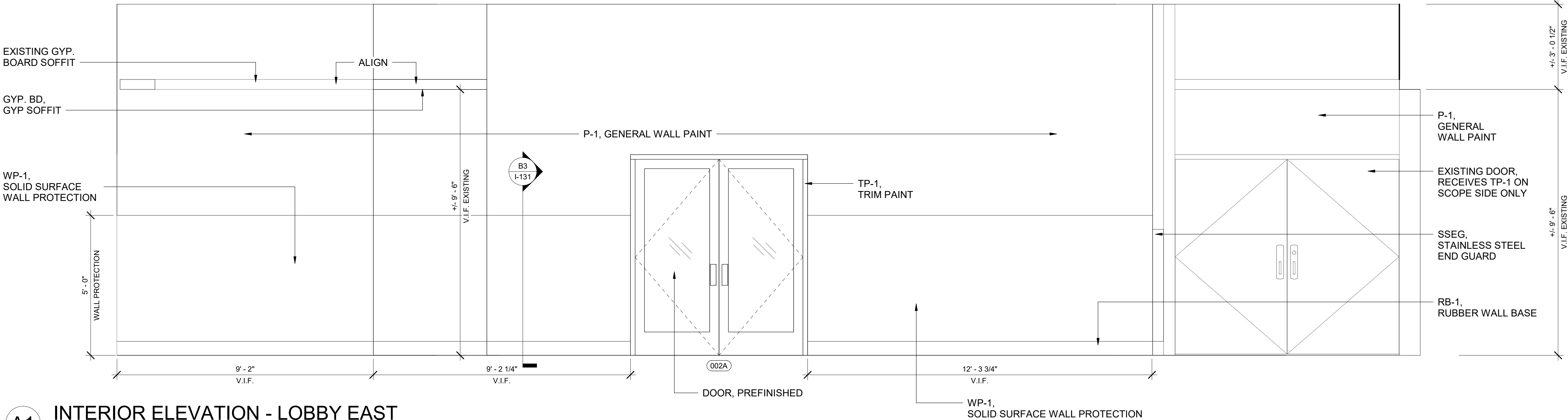
A

A1

INTERIOR ELEVATION - LOBBY EAST

SCALE: 1/2" = 1'-0"

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"



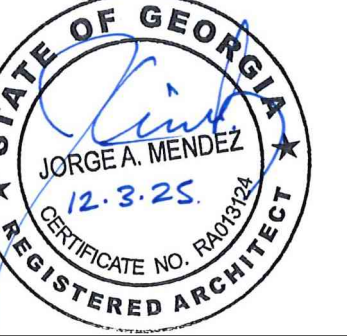
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SHEET TITLE

INTERIOR  
ELEVATIONS

SHEET NUMBER

A-422

ORIGINAL SHEET SIZE:  
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D

C

B

A

ACT-1,  
ACOUSTICAL CEILING

GYP-1,  
EXISTING GYP. SOFFIT TO REMAIN

ACT-1,  
ACOUSTICAL CEILING

EXISTING  
DEMOUNTABLE  
WALL TO REMAIN

ALIGN

CEILING MOUNTED PROJECTION  
SCREEN DRAPER, 119" HDTV FORMAT,  
MODEL "ACCESS V ELECTRIC  
PROJECTION SCREEN" OR APPROVED  
EQUAL BY OWNER. CONTRACTOR TO  
MOUNT SECURELY TO THE  
STRUCTURE ABOVE. SEE ELECTRICAL  
FOR POWER REQUIREMENTS.

P-2,  
EXISTING WALL TO REMAIN,  
CONTRACTOR TO PAINT  
WHERE DEMOUNTABLE  
WALLS ARE REMOVED

RB-2,  
RUBBER WALL BASE

RAISED FLOORING,  
SEE FLOOR PLANS FOR  
ADDITIONAL INFORMATION

+/- 9'-6"  
V.I.F. EXISTING

C1

### INTERIOR ELEVATION - BOARD ROOM WEST

SCALE: 1/2" = 1'-0"

ACT-1,  
ACOUSTICAL CEILING

GYP-1,  
EXISTING GYP. SOFFIT TO REMAIN

ACT-1,  
ACOUSTICAL CEILING

EXISTING  
RUBBER WALL  
BASE TO REMAIN

EXISTING DEMOUNTABLE WALL  
BEYOND TO REMAIN

ALIGN

P-2,  
GENERAL WALL  
PAINT FOR NEW  
WALLS ONLY

STOREFRONT,  
PREFINISHED

THERMOSTAT,  
SEE MECH DWGS

CG,  
CORNER GUARD

RB-2,  
RUBBER  
WALL BASE

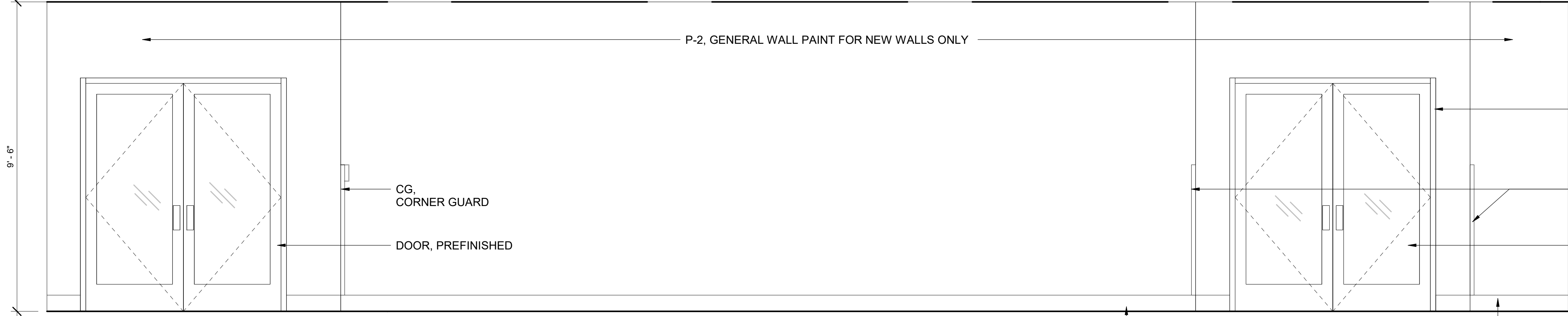
9'-6"

B1

### INTERIOR ELEVATION - BOARD ROOM EAST

SCALE: 1/2" = 1'-0"

SF-2



A1

### INTERIOR ELEVATION - BOARD ROOM SOUTH

SCALE: 1/2" = 1'-0"

TP-1,  
TRIM PAINT

CG,  
CORNER GUARD

DOOR, PREFINISHED

RB-2,  
RUBBER WALL BASE

0 1' 2' 4'  
SCALE: 1/2" = 1'-0"

**POND**

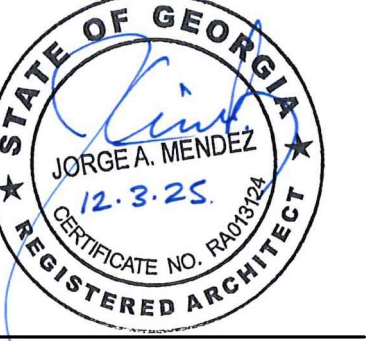
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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: CB/JB  
DRAWN BY: JB/EB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

INTERIOR  
ELEVATIONS

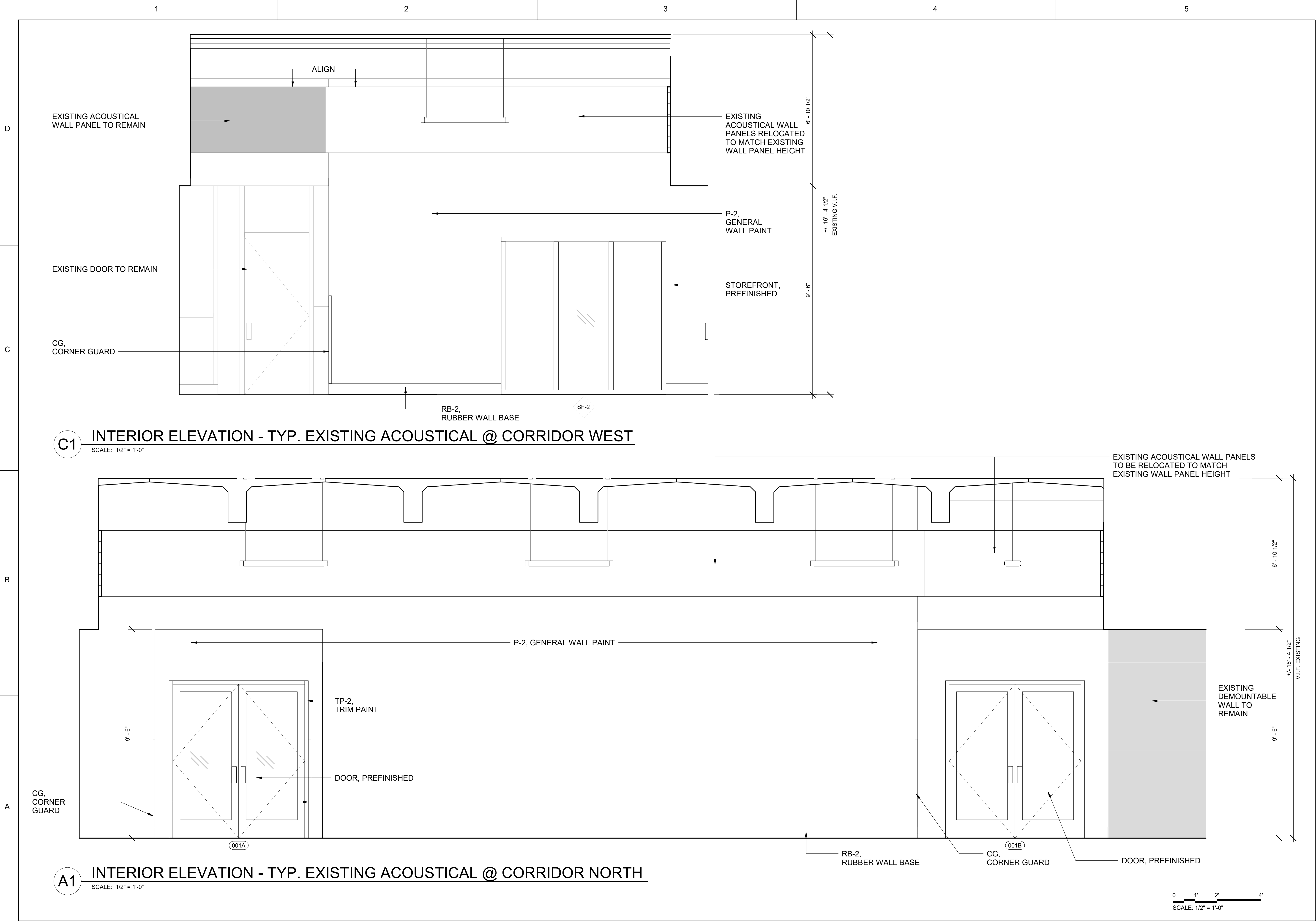
SHEET NUMBER

A-423

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

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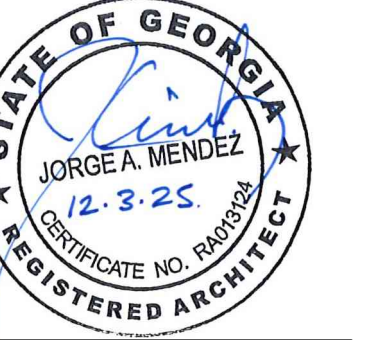


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CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

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DESIGNED BY: CB/JB  
DRAWN BY: JB/EB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

INTERIOR  
ELEVATIONS

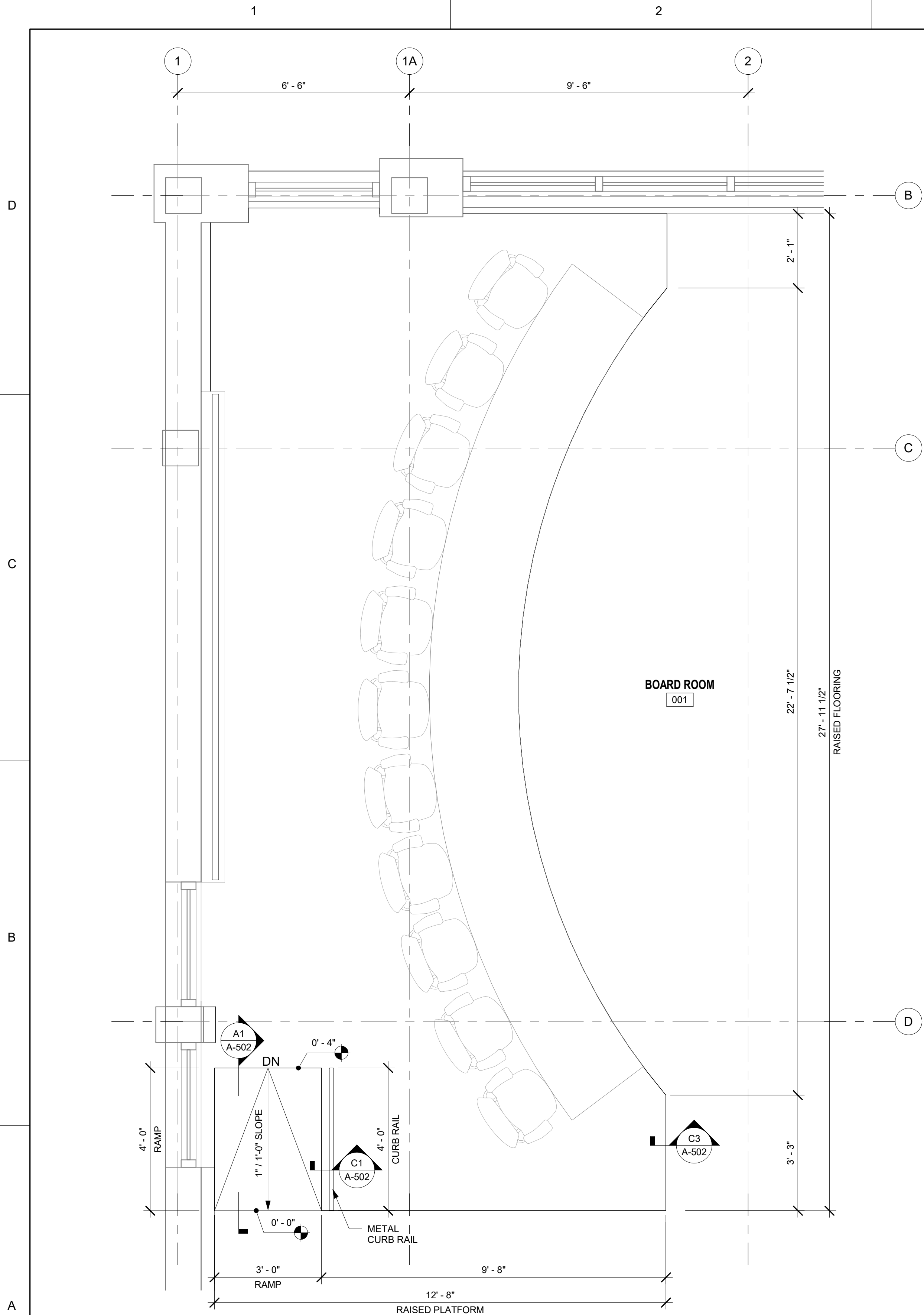
SHEET NUMBER

A-424

ORIGINAL SHEET SIZE:  
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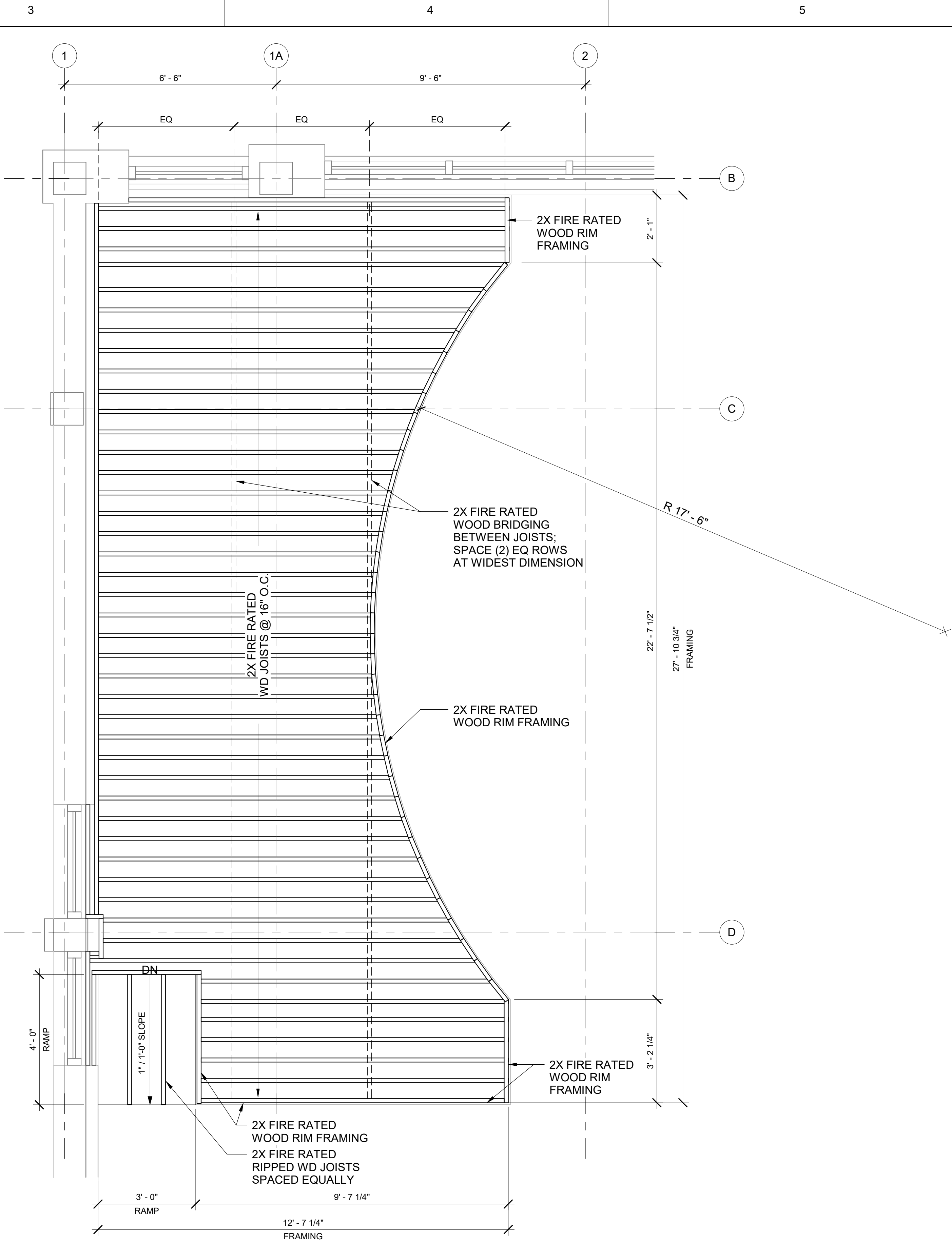
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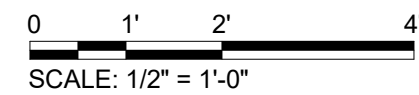
**A1** ENLARGED RAISED FLOORING PLAN

SCALE: 1/2" = 1'-0"



**A3** ENLARGED RAISED FLOORING FRAMING PLAN

SCALE: 1/2" = 1'-0"



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CLIENT INFORMATION  
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TRANSIT

PROJECT NAME  
ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

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DATE

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DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE  
ENLARGED  
RAISED  
FLOORING PLAN

SHEET NUMBER  
**A-501**

ORIGINAL SHEET SIZE:  
22" X 34"

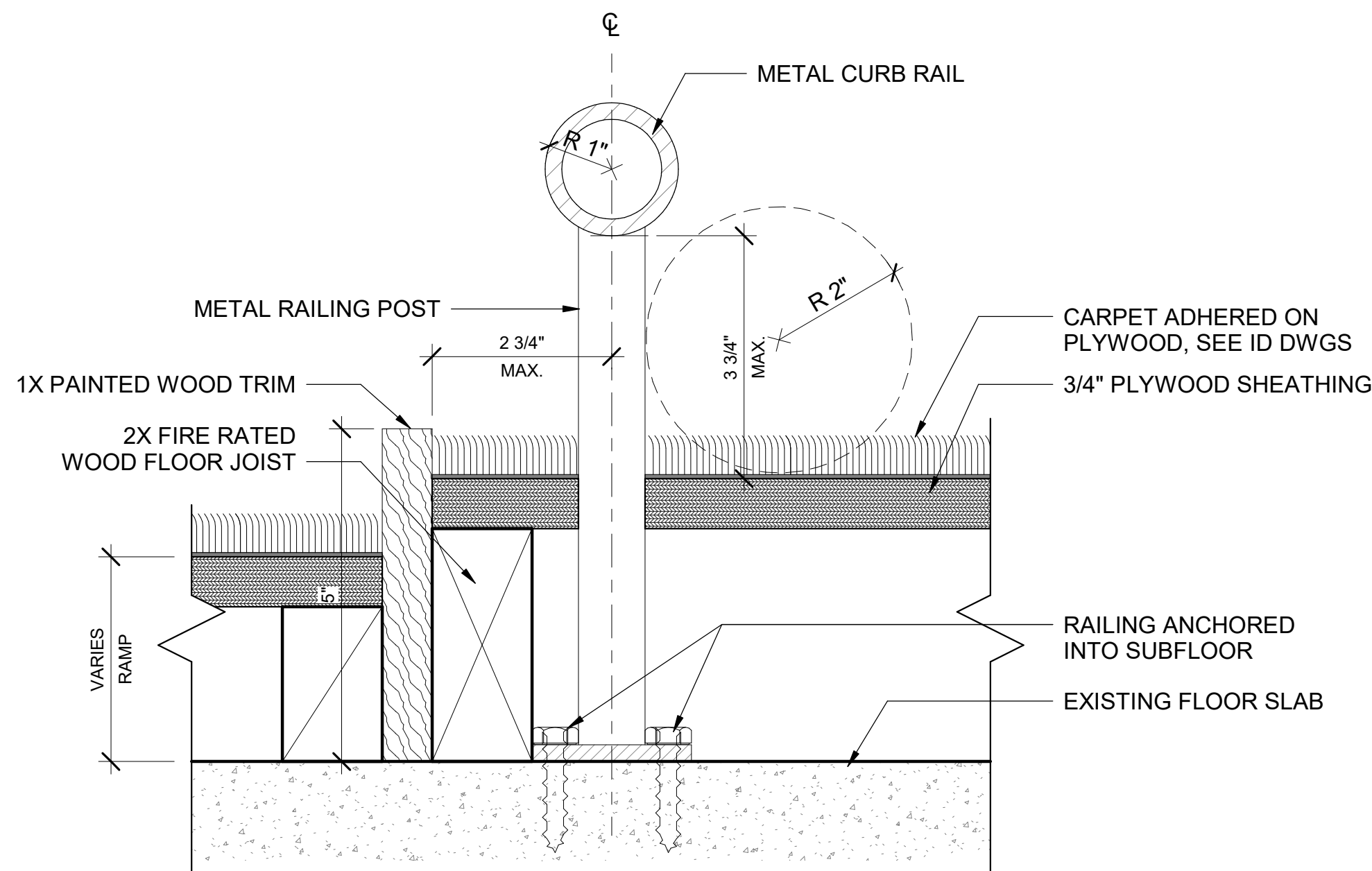
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D

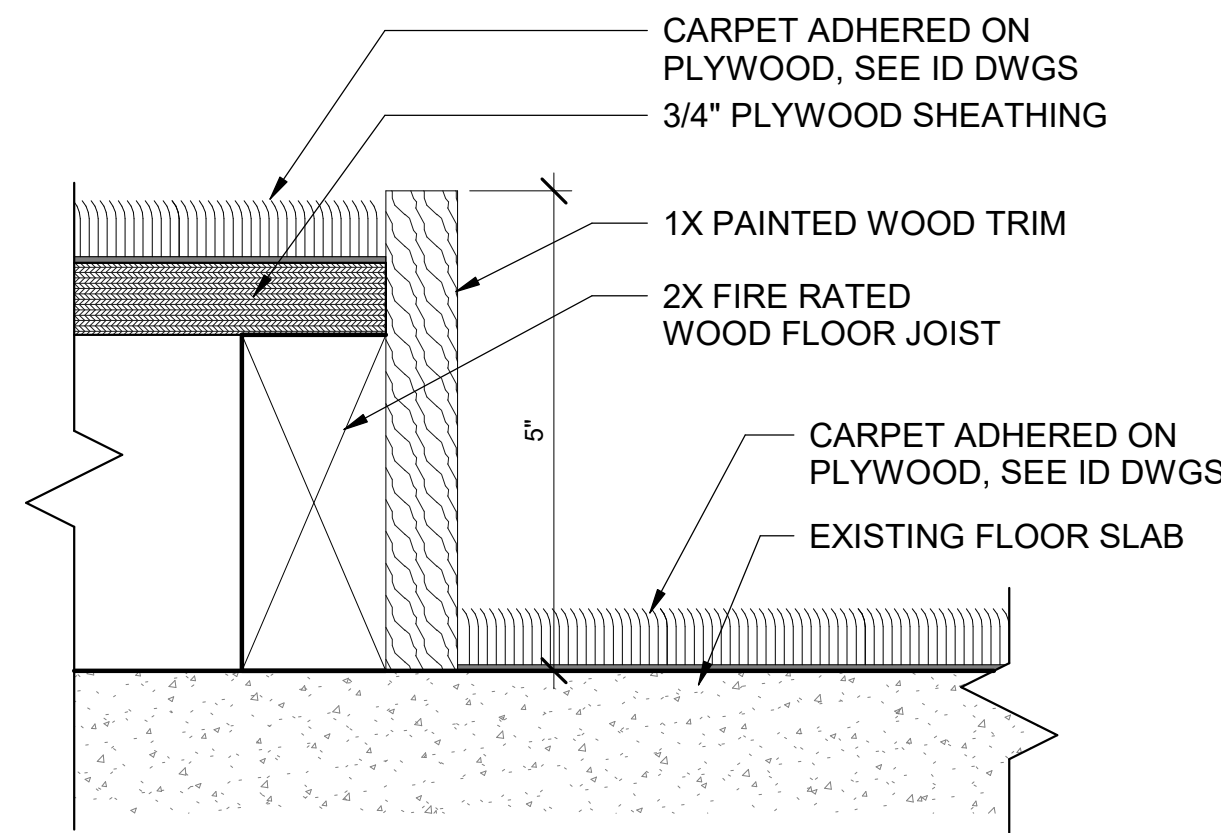
C

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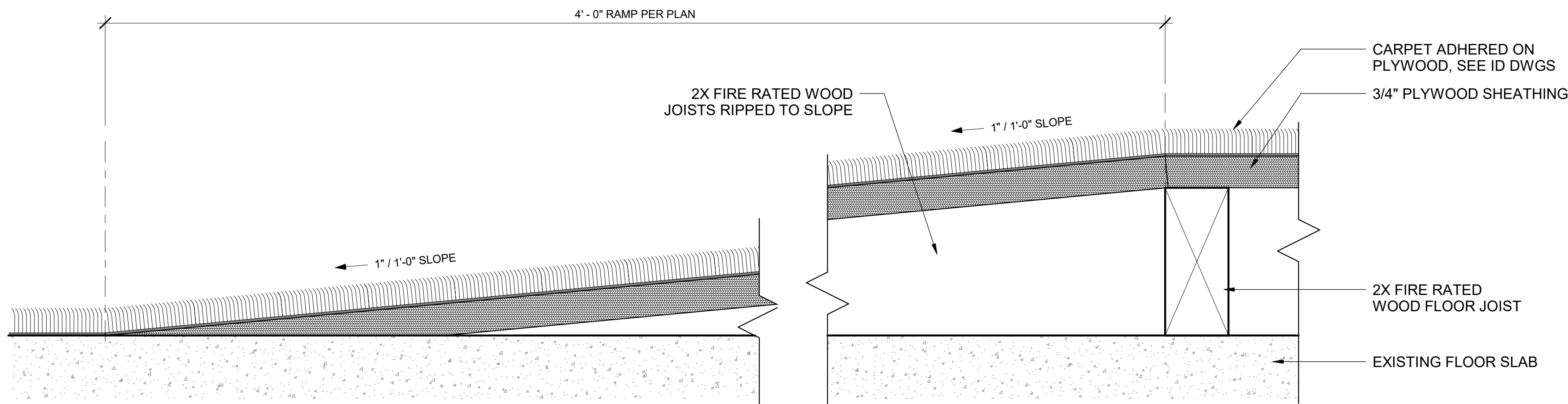
A



**C1** CURB RAIL DETAIL  
SCALE: 6" = 1'-0"



**C3** RAISED FLOORING EDGE DETAIL  
SCALE: 6" = 1'-0"



**A1** RAMP SECTION  
SCALE: 6" = 1'-0"

0 1" 2" 4"  
SCALE: 6" = 1'-0"



**POND**

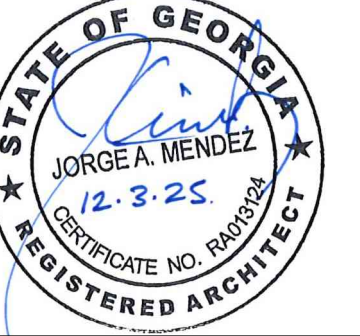
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CLIENT INFORMATION

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TRANSIT

PROJECT NAME

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ROOM

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TRANSIT  
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DESIGNED BY: Designer  
DRAWN BY: Author  
CHECKED BY: Checker  
SUBMITTED BY: Approver  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

RAISED  
FLOORING  
DETAILS

SHEET NUMBER

**A-502**

ORIGINAL SHEET SIZE:  
22" X 34"

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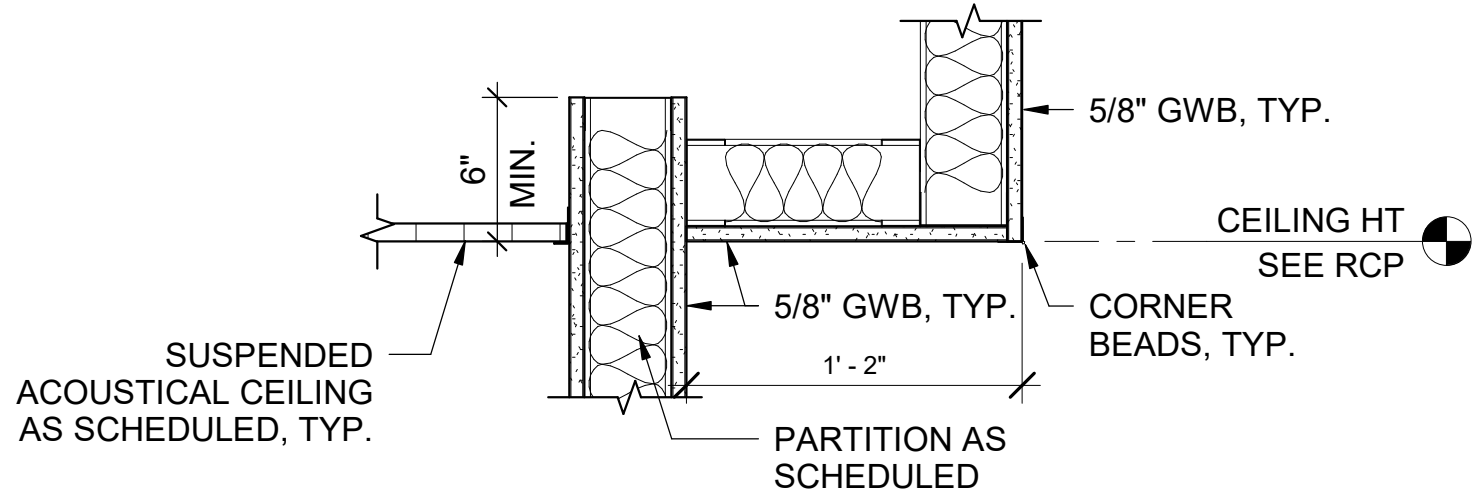
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D

C

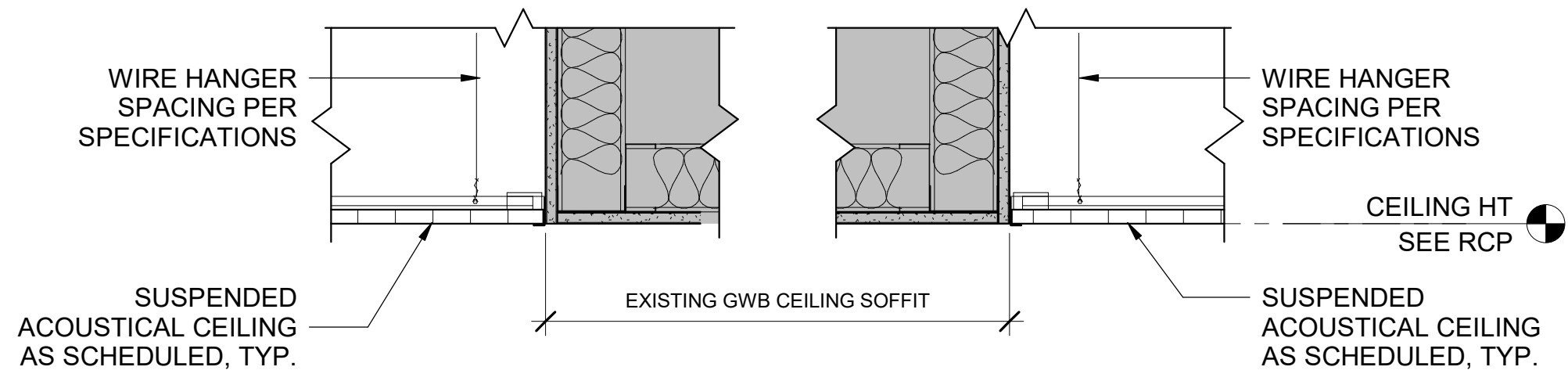
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A



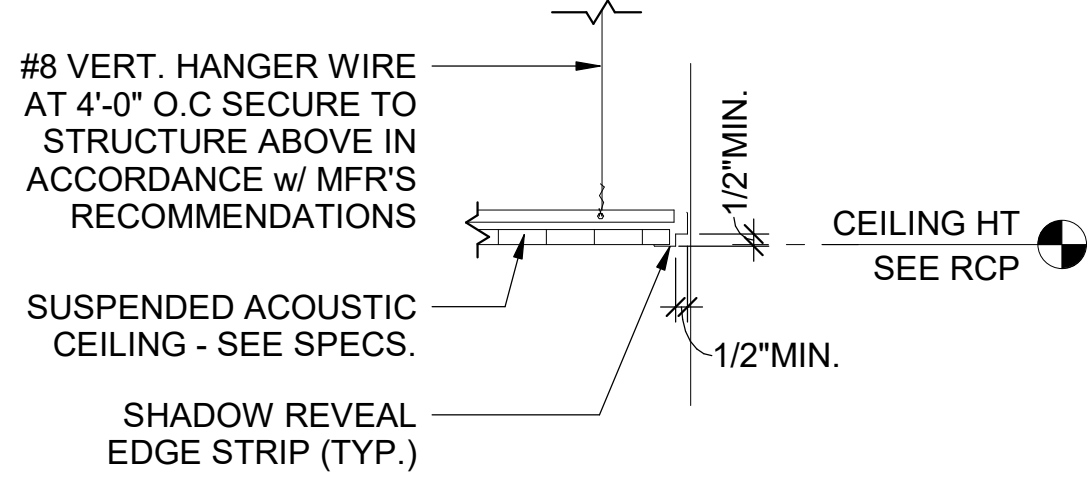
**B1** CEILING DETAIL - GYP SOFFIT

SCALE: 1 1/2" = 1'-0"



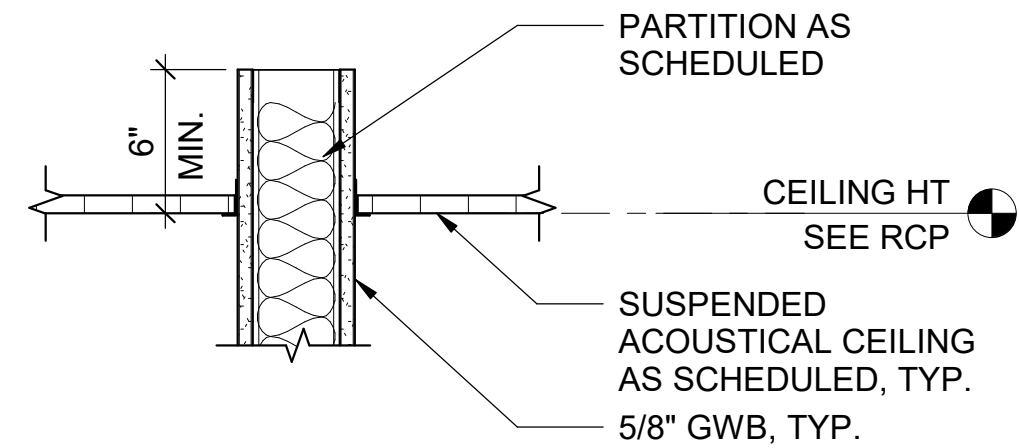
**A1** CEILING DETAIL - EXISTING GYP TO ACT

SCALE: 1 1/2" = 1'-0"



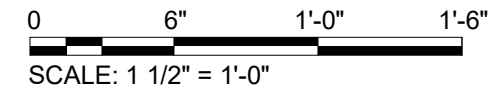
**A3** CEILING DETAIL - ACT, TYP.

SCALE: 1 1/2" = 1'-0"



**A4** CEILING DETAIL - ACT AT WALL, BOTH SIDES

SCALE: 1 1/2" = 1'-0"



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CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

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DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

CEILING DETAILS

SHEET NUMBER

**A-531**

ORIGINAL SHEET SIZE:  
22" X 34"

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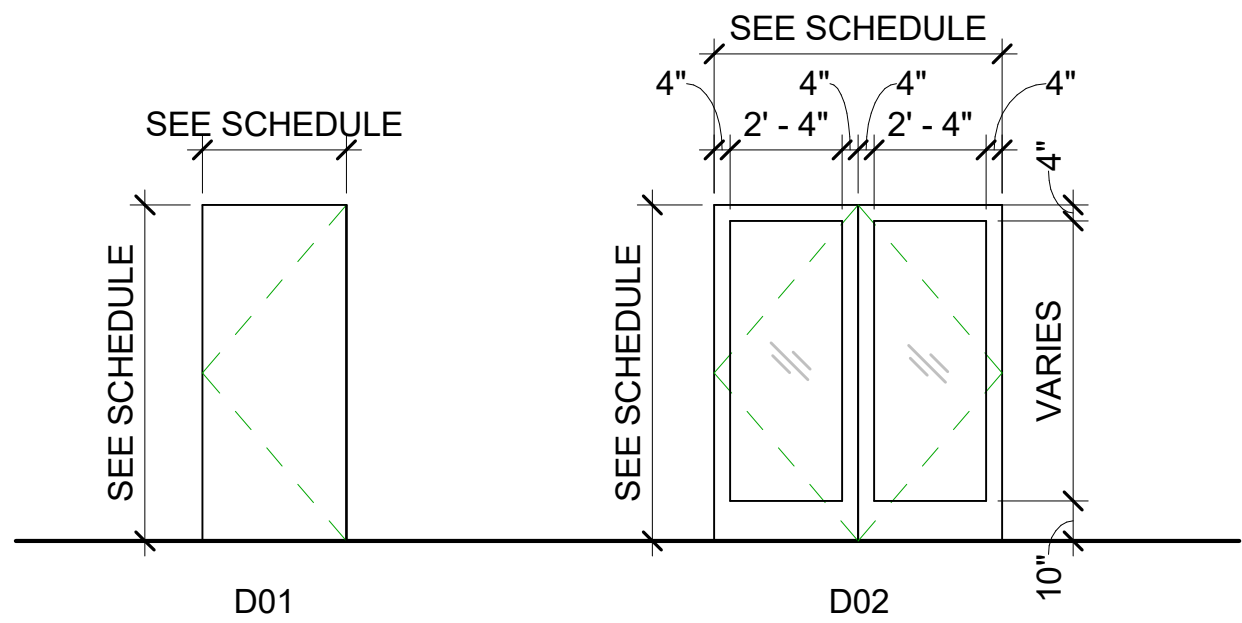
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C

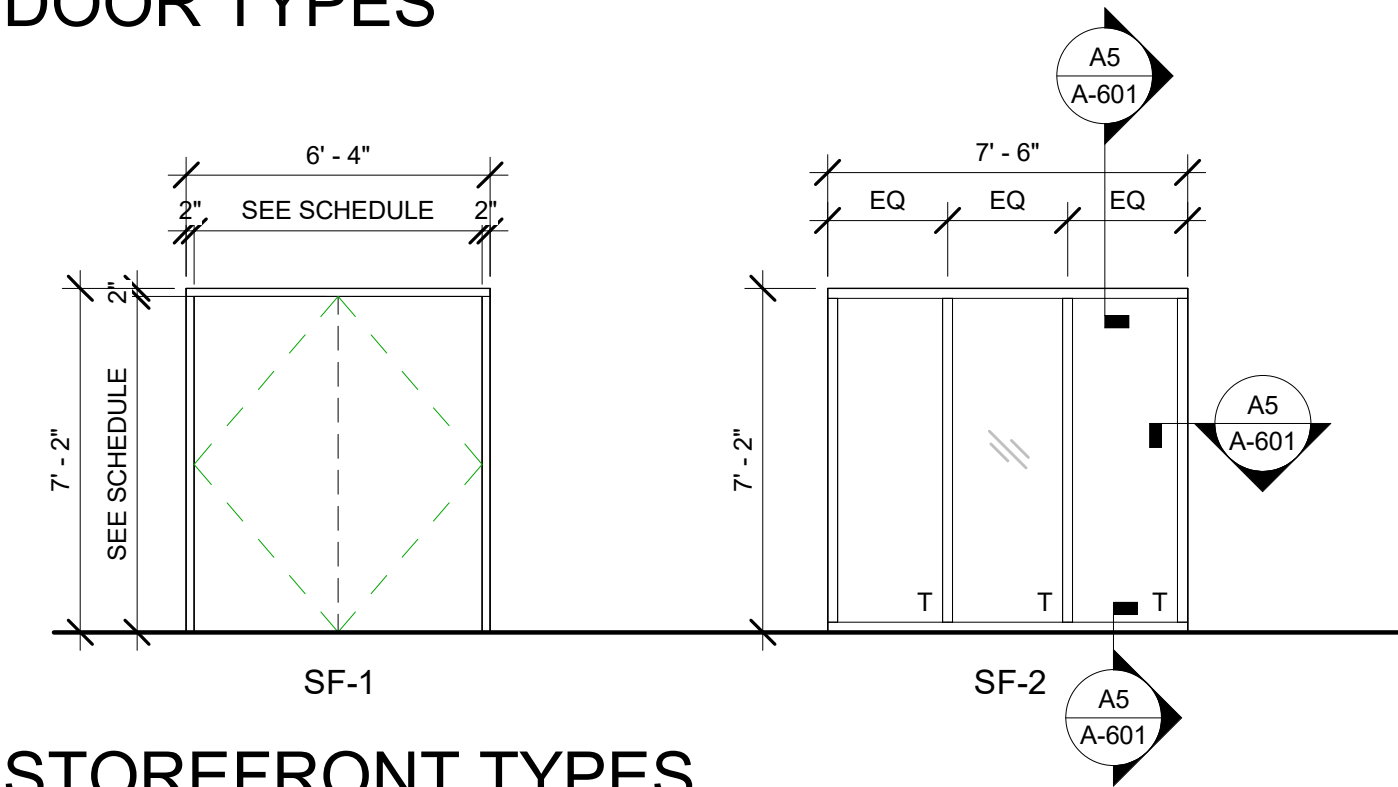
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A

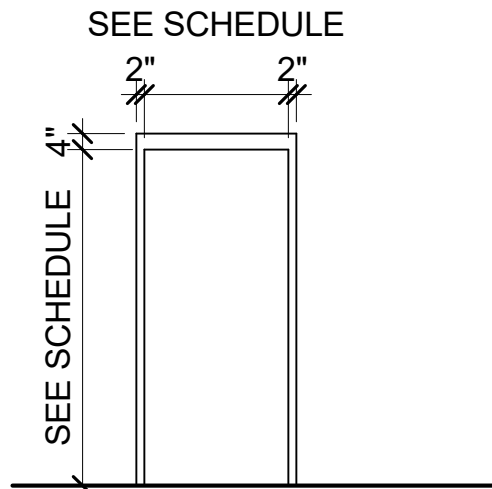
| DOOR SCHEDULE |       |         |             |        |            |         |       |       |         |         |         |         |             |          |                                                                                                                                                                  |
|---------------|-------|---------|-------------|--------|------------|---------|-------|-------|---------|---------|---------|---------|-------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOOR NO.      | PANEL |         |             |        |            |         | FRAME |       |         | DETAILS |         |         | FIRE RATING | HARDWARE | REMARKS                                                                                                                                                          |
|               | TYPE  | WIDTH   | HEIGHT      | THK.   | MATL.      | FIN.    | TYPE  | MATL. | FIN.    | SILL    | JAMB    | HEAD    |             |          |                                                                                                                                                                  |
| 001A          | D02   | 6' - 0" | 7' - 0"     | 1 3/4" | ALUM/GLASS | PREFIN. | -     | AL    | PREFIN. | A3/A601 | A3/A601 | A3/A601 |             | SET 1.0  | PANIC HARDWARE REQUIRED                                                                                                                                          |
| 001B          | D02   | 6' - 0" | 7' - 0"     | 1 3/4" | ALUM/GLASS | PREFIN. | -     | AL    | PREFIN. | A3/A601 | A3/A601 | A3/A601 |             | SET 1.0  | PANIC HARDWARE REQUIRED                                                                                                                                          |
| 002A          | D02   | 6' - 0" | 7' - 0"     | 1 3/4" | ALUM/GLASS | PREFIN. | -     | AL    | PREFIN. | A3/A601 | A3/A601 | A3/A601 |             | SET 2.0  |                                                                                                                                                                  |
| 002B          | D01   | 3' - 0" | 7' - 0"     | 1 3/4" | SCW        | ST      | F01   | HM    | P       | A4/A601 | A4/A601 | A4/A601 |             | SET 3.0  |                                                                                                                                                                  |
| 002C          | D01   | 3' - 0" | 7' - 0"     | 1 3/4" | SCW        | ST      | F01   | HM    | P       | A4/A601 | A4/A601 | A4/A601 |             | SET 3.0  |                                                                                                                                                                  |
| E001          | -     | 3' - 0" | 9' - 3 1/2" | 1 3/4" | ALUM/GLASS | PREFIN. | -     | AL    | PREFIN. | -       | -       | -       |             |          | EXISTING DOOR IN DEMOUNTABLE WALL. EQUIP WITH PANIC HARDWARE ON PUSH SIDE IN DIRECTION OF EGRESS. ENSURE ACCESS CONTROL IS FAIL SAFE UPON FIRE ALARM ACTIVATION. |
| E002          | -     | 6' - 6" | 8' - 0"     | 1 3/4" | ALUM/GLASS | PREFIN. | -     | AL    | PREFIN. | -       | -       | -       | -           | -        | EXISTING DOOR IN DEMOUNTABLE WALL. EQUIP WITH PANIC HARDWARE ON PUSH SIDE IN DIRECTION OF EGRESS. ENSURE ACCESS CONTROL IS FAIL SAFE UPON FIRE ALARM ACTIVATION. |



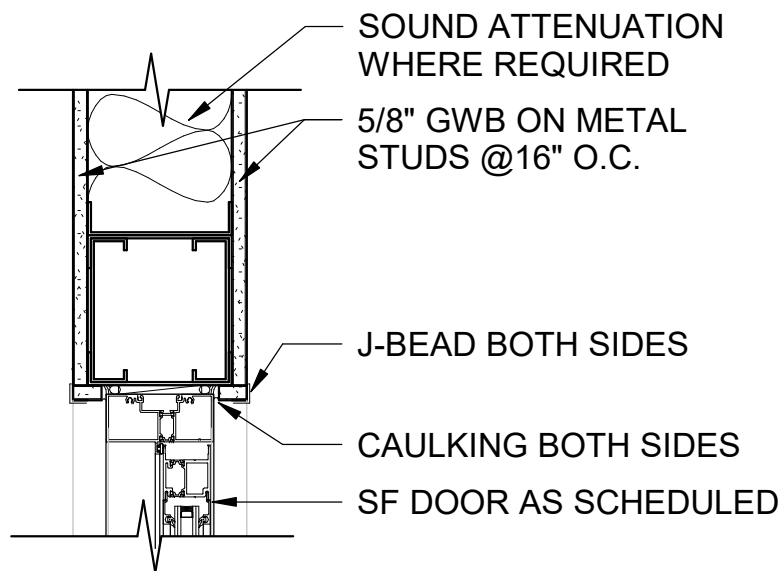
### DOOR TYPES



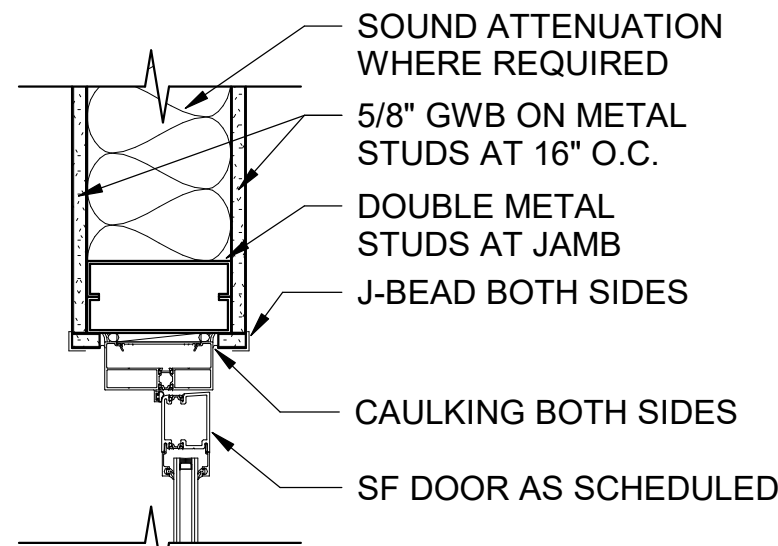
### STOREFRONT TYPES



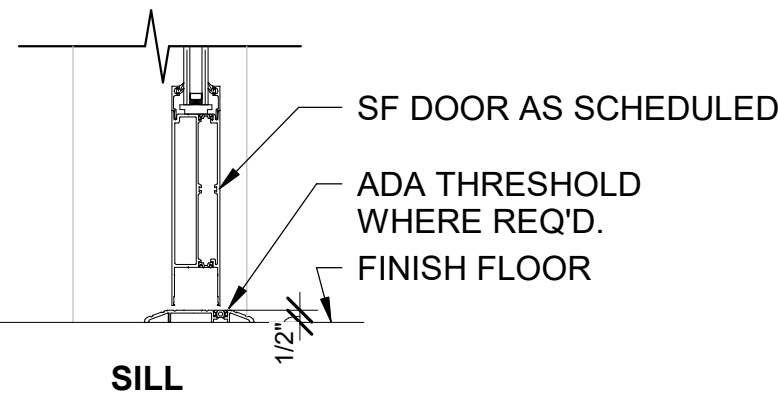
### FRAME TYPES



HEAD



JAMB



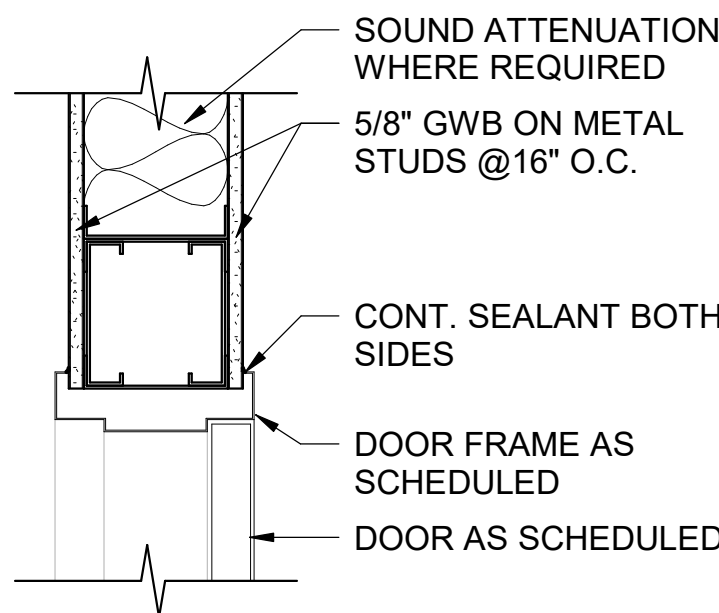
SILL

NOTE:  
SEE ID DWGS FOR FLOOR SILL TRASNTIONS

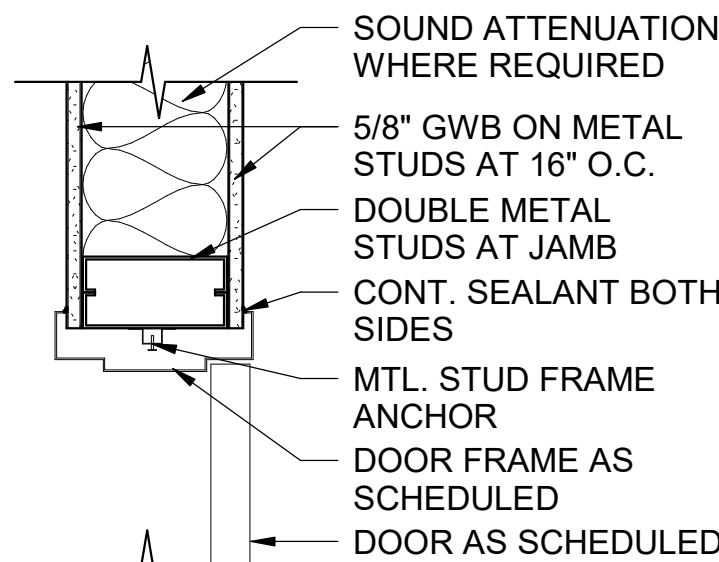
A3

### DOOR DETAILS - SF

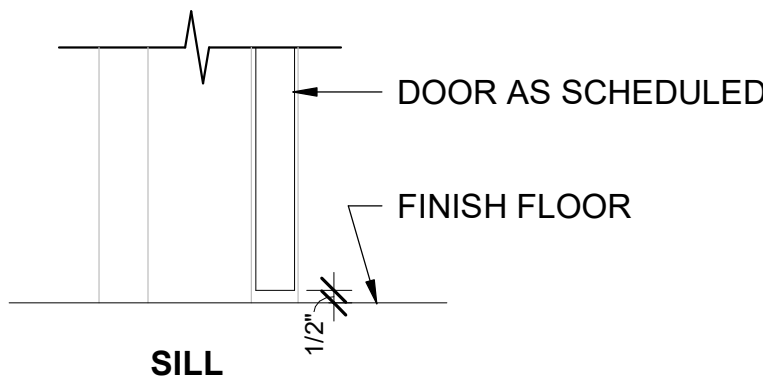
SCALE: 1 1/2" = 1'-0"



HEAD



JAMB

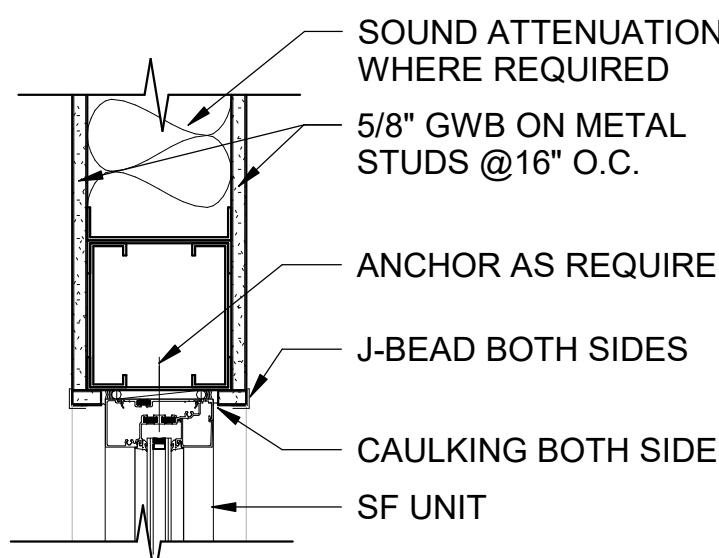


SILL

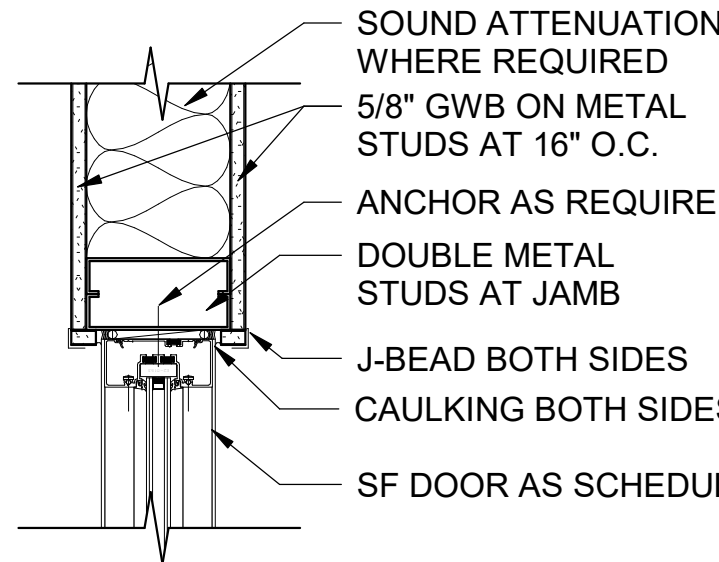
A4

### DOOR DETAILS - GWB

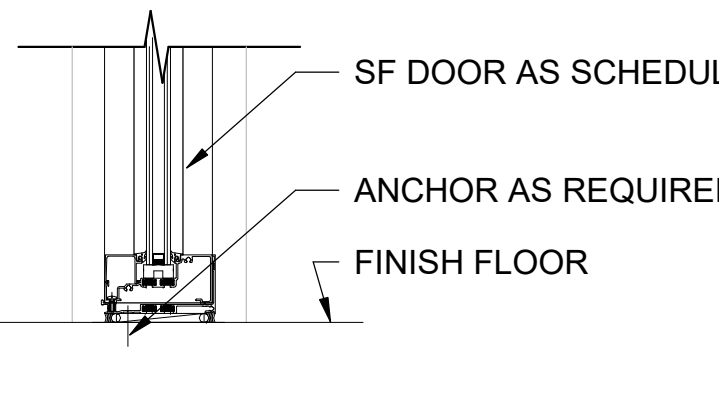
SCALE: 1 1/2" = 1'-0"



HEAD



JAMB



SILL

A5

### STOREFRONT DETAILS

SCALE: 1 1/2" = 1'-0"

0 6" 1'-0" 1'-6"  
SCALE: 1 1/2" = 1'-0"

### SHEET NOTES

#### LEGEND

HM HOLLOW METAL  
P PAINT  
PREFIN. PREFINISHED  
SCW SOLID CORE WOOD  
ST STAINED  
T TEMPERED

#### GENERAL DOOR NOTES

- PROVIDE 18" MINIMUM CLEARANCE AT THE STRIKE SIDE OF DOOR JAMBS.
- FIELD VERIFY ADJACENT WALL THICKNESSES PRIOR TO ORDERING HOLLOW METAL FRAMES.
- FIELD VERIFY FRAME OPENING WIDTHS AND HEIGHTS.
- VERIFY KEYING AND MASTER KEYING OF LOCKSETS WITH OWNER.

**POND**

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CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
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SAVANNAH, GA 31401

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DESIGNED BY: CB/JB  
DRAWN BY: JB  
CHECKED BY: CB  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

DOOR SCHEDULE  
AND DETAILS

SHEET NUMBER

A-601

ORIGINAL SHEET SIZE:  
22" X 34"

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D  
  
  
  
C  
  
  
  
B  
  
  
  
A

1

2

3

4

5

### FINISH PLAN LEGEND

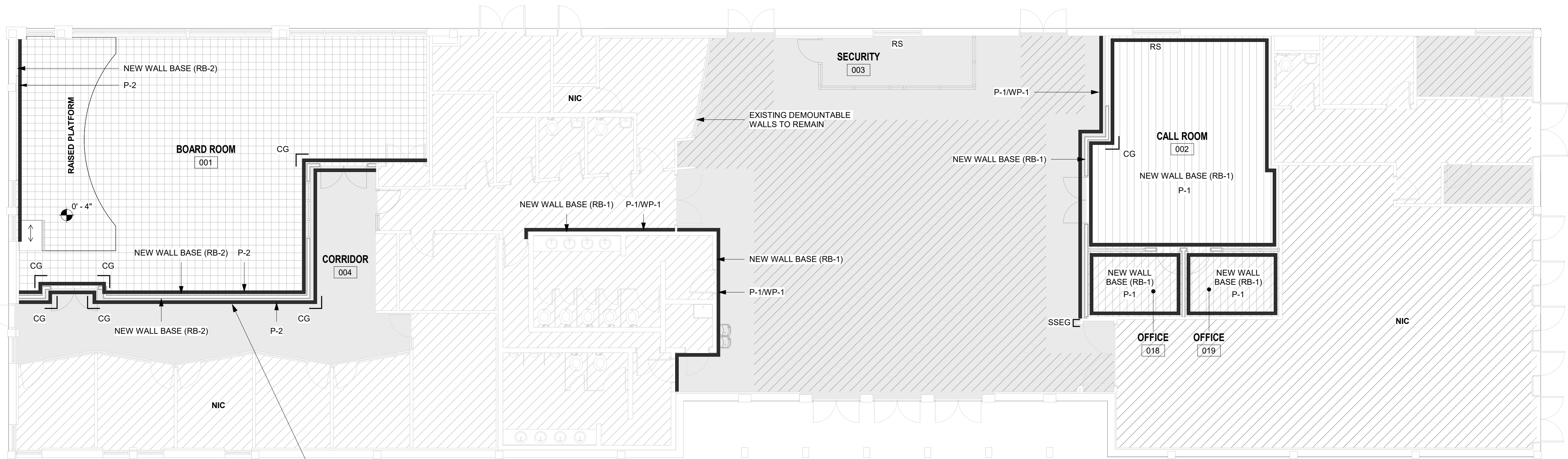
|  |                              |
|--|------------------------------|
|  | FINISH LOCATION              |
|  | STAINLESS STEEL<br>END GUARD |
|  | CORNER GUARD                 |
|  | ROLLER SHADE                 |

### FLOOR FINISH LEGEND

|  |       |                    |
|--|-------|--------------------|
|  | CPT-1 | CARPET TILE        |
|  | CPT-2 | CARPET TILE        |
|  | ETR   | EXISTING TO REMAIN |
|  | NIC   | NOT IN CONTRACT    |

### SHEET NOTES

- SEE SHEET A-001 FOR GENERAL NOTES, ABBREVIATIONS & SYMBOLS.
- SEE SHEET I-131 FOR ROOM FINISH SCHEDULE.
- ALL WALLS TO BE PAINTED P-1 UNLESS OTHERWISE NOTED.
- INSTALL CARPET INSETS AT ALL ELECTRICAL FLOOR BOX LOCATIONS, CARPET TO MATCH ADJACENT FLOORING MATERIAL.
- ALL FINISH SELECTIONS IDENTIFIED IN LEGENDS, SCHEDULES, AND SPECIFICATIONS ARE NOT SUBJECT TO 'OR EQUAL' SUBSTITUTIONS UNLESS NOTED OTHERWISE. THE CONTRACTOR AND SUBCONTRACTORS SHALL SUBMIT PRODUCTS AND FINISHES AS INDICATED IN THE DOCUMENTS.
- NOTIFY ARCHITECT OF SCHEDULED FINISHES THAT ARE UNAVAILABLE OR DISCONTINUED AT THE EARLIEST OPPORTUNITY SUCH THAT A SUBSTITUTION CAN BE SELECTED WITHOUT JEOPARDIZING THE CONSTRUCTION SCHEDULE.
- INSTALL ALL FINISH MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS, SURFACE PREPARATION, ADHESIVES AND BACKINGS; INCLUDING WALLCOVERINGS, COATINGS, FLOORING MATERIALS, LAMINATES, ETC.
- FLOOR MATERIAL TRANSITIONS AT DOOR OPENINGS ARE TO BE CENTERED BELOW THE DOOR IN THE CLOSED POSITION, UNLESS NOTED OTHERWISE. SEE TRANSITION DETAILS ON SHEET A-005.
- ACCESS PANELS, VISIBLE COVES OR ENCASEMENTS, VISIBLE ELECTRICAL PANELS, ETC. TO BE PAINTED TO MATCH ADJACENT SURFACES.
- ALL INTERIOR WALLS, TRIM AND CEILING FINISHES OF PUBLIC AREAS TO COMPLY WITH CLASS A MATERIAL CLASSIFICATION; FLAME SPREAD RATING 0 TO 25, SMOKE DEVELOPED 200. ALL INTERIOR WALL AND CEILING FINISHES AND TRIM IN NON PUBLIC AREAS TO COMPLY WITH CLASS B MATERIAL CLASSIFICATION; FLAME SPREAD RATING 26 TO 75, SMOKE DEVELOPED 450, PER IBC CHAPTER 8.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR MEETING ALL ACCESSIBILITY REQUIREMENTS FOR ALL FLOORING AND WALL SYSTEMS.
- PROVIDE MOISTURE TESTING OF CONCRETE PER FLOOR MFR PRIOR TO INSTALLATION OF FLOORING SYSTEMS.



## A1 INTERIOR FINISH FLOOR PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'  
SCALE: 1/8" = 1'-0"



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SAVANNAH, GA 31401

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DESIGNED BY: EB  
DRAWN BY: EB  
CHECKED BY: EM  
SUBMITTED BY: AS  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

INTERIOR FINISH  
FLOOR PLAN

SHEET NUMBER

I-101

ORIGINAL SHEET SIZE:  
22" X 34"

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D

C

B

A

| FINISH SCHEDULE |               |       |      |              |              |              |             |             |                |
|-----------------|---------------|-------|------|--------------|--------------|--------------|-------------|-------------|----------------|
| SPACE           |               | FLOOR |      | WALLS        |              |              |             | CEILING     | REMARKS        |
| ROOM NO.        | ROOM NAME     | MAT.  | BASE | NORTH        | EAST         | SOUTH        | WEST        | FIN.        |                |
| 001             | BOARD ROOM    | CPT-1 | RB-2 | ETR/P-2      | ETR/P-2      | ETR/P-2      | ETR/P-2     | ACT-1/GYP-1 | R1, R6, R8, R9 |
| 002             | CALL ROOM     | CPT-2 | RB-1 | P-1          | P-1          | P-1          | P-1         | ACT-1       |                |
| 003             | SECURITY      | ETR   | RB-1 | ETR          | ---          | ---          | ---         | ---         |                |
| 004             | CORRIDOR      | ETR   | RB-2 | ETR/P-2      | ETR/P-2      | ETR/P-2      | ETR/P-2     | ETR/GYP-1   | R1, R2, R3, R7 |
| 009             | LOBBY         | ETR   | RB-1 | ETR/P-1/WP-1 | ETR/P-1/WP-1 | ETR/P-1/WP-1 | ETR/P-1WP-1 | ETR/GYP-1   | R1, R4, R5, R7 |
| 012             | TENANT IT     | ETR   | ETR  | ETR          | ETR          | ETR          | ETR         | ETR         |                |
| 013             | TENANT OFFICE | ETR   | ETR  | ETR          | ETR          | ETR          | ETR         | ETR         |                |
| 018             | OFFICE        | CPT-2 | RB-1 | P-1          | P-1          | P-1          | P-1         | ACT-1       | R1             |
| 019             | OFFICE        | CPT-2 | RB-1 | P-1          | P-1          | P-1          | P-1         | ACT-1       | R1             |

FINISH LEGEND

CEILING

ACT-1 ACOUSTICAL CEILING TILE: ULTIMA LAY-IN, BEVELED TEGULAR 9/16", 24" x 24"x 3/4", SUPRAFINE XL, COLOR: WHITE.  
GYP-1 GYPSUM BOARD, PAINTED: SHERWIN WILLIAMS, CRUSHED ICE SW 7647, FLAT.

WALLS

P-1 PAINT: SHERWIN WILLIAMS, COLOR: CRUSHED ICE SW 7647, EGGSHELL.  
P-2 PAINT: SHERWIN WILLIAMS, COLOR: CONTRACTOR TO MATCH EXISTING GENERAL WALL PAINT, EGGSHELL.  
TP-1 TRIM PAINT: SHERWIN WILLIAMS, COLOR: CRUSHED ICE SW 7647, SEMIGLOSS.

WALL BASE

RB-1 RUBBER WALL BASE: JOHNSONITE, MILLWORK, MANDALAY, 6" H, COLOR: MYSTIFY CG-469.  
RB-2 RUBBER WALL BASE: CONTRACTOR TO MATCH EXISTING RUBBER WALL BASE AND COLOR.

FLOOR

CPT-1 CARPET TILE: MILLIKEN, MAJOR FREQUENCY: THREE, COUNTER BALANCE, COLOR: AUDIO MIX CTB162-103-133, SIZE: 10" x 40",  
INSTALLATION: ASHLAR.  
CPT-2 CARPET TILE: INTERFACE, OPEN AIR 418, COLOR: NICKEL 107044, SIZE: 20" x 20", INSTALLATION: MONOLITHIC.  
ETR EXISTING FLOOR TO REMAIN, FLOOR SHALL BE PROTECTED DURING CONSTRUCTION AND CLEANED TO SAME CONDITION AS PROJECT START.

MISC.

CG CORNER GUARD: INPRO CORPORATION, TAPE-ON CORNER GUARD, HEIGHT: 48" H, 1-1/2" WING, COLOR: GALA 0380.  
SSEG STAINLESS STEEL END GUARD: INPRO, SURFACE MOUNT STAINLESS STEEL END WALL PROTECTOR, 2" WING, 48" H, MOUNTED 6" A.F.F.  
RS-1 ROLLER SHADE: MECHOSHADE, M7 W/ FASCIA, SOHO 1900, COLOR: SMOKE 1915, MANUAL CHAIN, 5% OPENNESS, SEE SPECS.  
DF-1 DOOR FINISH: VT INDUSTRIES, SPECIES: 5 PLY BIRCH VENEER, ROTARY CUT, VENEER INSTALLATION: BOOK MATCH, COLOR: GC TO MATCH EXISTING WOOD DOORS.  
WP-1 WALL PROTECTION: INPRO, COLOR/STYLE SIMILAR TO: PRISM SOLID SURFACE SHEET, 60" H, BEVELED EDGE, COLOR: GLACIER P9055.  
WT-1 WOOD TRIM, PAINTED: PAINTED TO MATCH SHERWIN WILLIAMS, BLACK MAGIC SW6991, EGGSHELL.

FINISH PLAN GENERAL NOTES

- ALL FINISHES ARE TO BE CONFIRMED AND COORDINATED WITH OWNER.
- CONTRACTOR SHALL READ ALL NOTES BEFORE BEGINNING WORK.
- FURNISH AND INSTALL MATERIALS IN COMPLIANCE WITH MANUFACTURER'S PRINTED SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
- ANY DISCONTINUED ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. CONTRACTOR TO NOTIFY OWNER OF ANY ITEMS REQUIRING FURTHER CLARIFICATION OF FINISH SELECTION.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING OF MATERIALS. DO NOT SCALE ARCHITECTURAL DRAWINGS. REFER TO DIMENSIONED PLANS.
- CONTRACTOR SHALL PROVIDE TO OWNER ALL MANUFACTURER'S RECOMMENDED MAINTENANCE INSTRUCTIONS ON ALL FINISH MATERIALS. CONTRACTOR TO PROVIDE OWNER WITH SHOP DRAWINGS FOR APPROVAL OF ALL NEW MATERIALS INSTALLED.
- INTERIOR CONSTRUCTION REQUIRING FINISH / COLOR SELECTION NOT NOTED WITHIN THE SCHEDULE SHALL BE SUBMITTED TO THE OWNER IN WRITING, WITH SAMPLES OR FINISH / COLORS AVAILABLE. CLEARLY IDENTIFYING ANY THAT MIGHT BE AT A PREMIUM ABOVE THE PRODUCT BID.
- ALL PRODUCT SPECIFICATIONS ARE GIVEN TO DEFINE DESIGN, COLOR AND QUALITY. SUBSTITUTIONS REQUIRE THE PRIOR APPROVAL OF THE OWNER. PROPOSED SUBSTITUTIONS SHALL ADHERE TO THE INTENT OF THE QUALITY, DESIGN, COLOR AND PATTERN.
- ALL FIRE HOSE CABINETS, FIRE EXTINGUISHER CABINETS AND ELECTRICAL PANELS SHALL NOT BE PAINTED AS THEY ARE PRE-FINISHED.

WALL FINISH NOTES

- MISCELLANEOUS GRILLS AND ACCESSORIES SHALL BE PAINTED TO MATCH ADJACENT WALL FINISHES UNLESS THEY ARE PREFINISHED. CONTRACTOR TO VERIFY PAINT COLOR WITH OWNER.
- WALL FINISHES SHOULD CONTINUE BEHIND ALL EQUIPMENT.
- EXISTING FINISHED WALLS TO TO BE ABRAINED TO A DULL FINISH AND PREPPED TO RECEIVE NEW SPECIFIED WALL FINISH.

FLOOR FINISH NOTES

- CONTRACTOR TO FOLLOW MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS ON ALL FLOORING PRODUCTS AND USE THE ADHESIVES, EQUIPMENT / TOOLS REQUIRED / RECOMMENDED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- CONTRACTOR TO FOLLOW MANUFACTURER'S PRINTED INSTRUCTIONS ON PROTECTION OF FLOORING MATERIAL AFTER INSTALLATION. PROTECT FLOORING AGAINST MARS, INDENTATIONS AND OTHER DAMAGE FROM CONSTRUCTION OPERATIONS. PLACEMENT OF EQUIPMENT AND FIXTURES DURING THE REMAINDER OF THE CONSTRUCTION PERIOD. USE PROTECTION METHODS INDICATED OR RECOMMENDED INWRITING BY THE FLOOR COVERING MANUFACTURER.
- CONTRACTOR TO PROVIDE AND INSTALL APPROPRIATE TRANSITION STRIPS WHERE DIFFERING MATERIALS ABUT IF NOT NOTED OTHERWISE. PROVIDE OWNER WITH COLOR SAMPLES TO SELECT FROM.
- FLOOR FINISH CHANGES SHALL OCCUR UNDER THE DOOR CENTERLINE (OR CENTER OF THE WALL OPENING IF NO DOOR) BETWEEN ROOMS.
- CONTRACTOR TO RECESS FLOOR SLAB WHERE RECESSED WALK OFF GRILLS ARE SPECIFIED, SEE MANUFACTURER FOR DEPTH.
- ALL FLOORING SHOULD CONTINUE UNDER EQUIPMENT

DOOR & FRAME NOTES

- ALL NEW DOOR FRAMES SHALL BE PAINTED TP-1 ON BOTH SIDES OF FRAME (UNLESS NOTED OTHERWISE).
- ALL NEW WOOD DOORS SHALL RECEIVE DF-1 (UNLESS NOTED OTHERWISE).
- EXISTING METAL DOORS AND SHALL BE PAINTED TP-1 ON PROJECT SIDE ONLY (UNLESS NOTED OTHERWISE).
- EXTERIOR DOORS AND DIRTT DOORS SHALL BE EXISTING TO REMAIN.



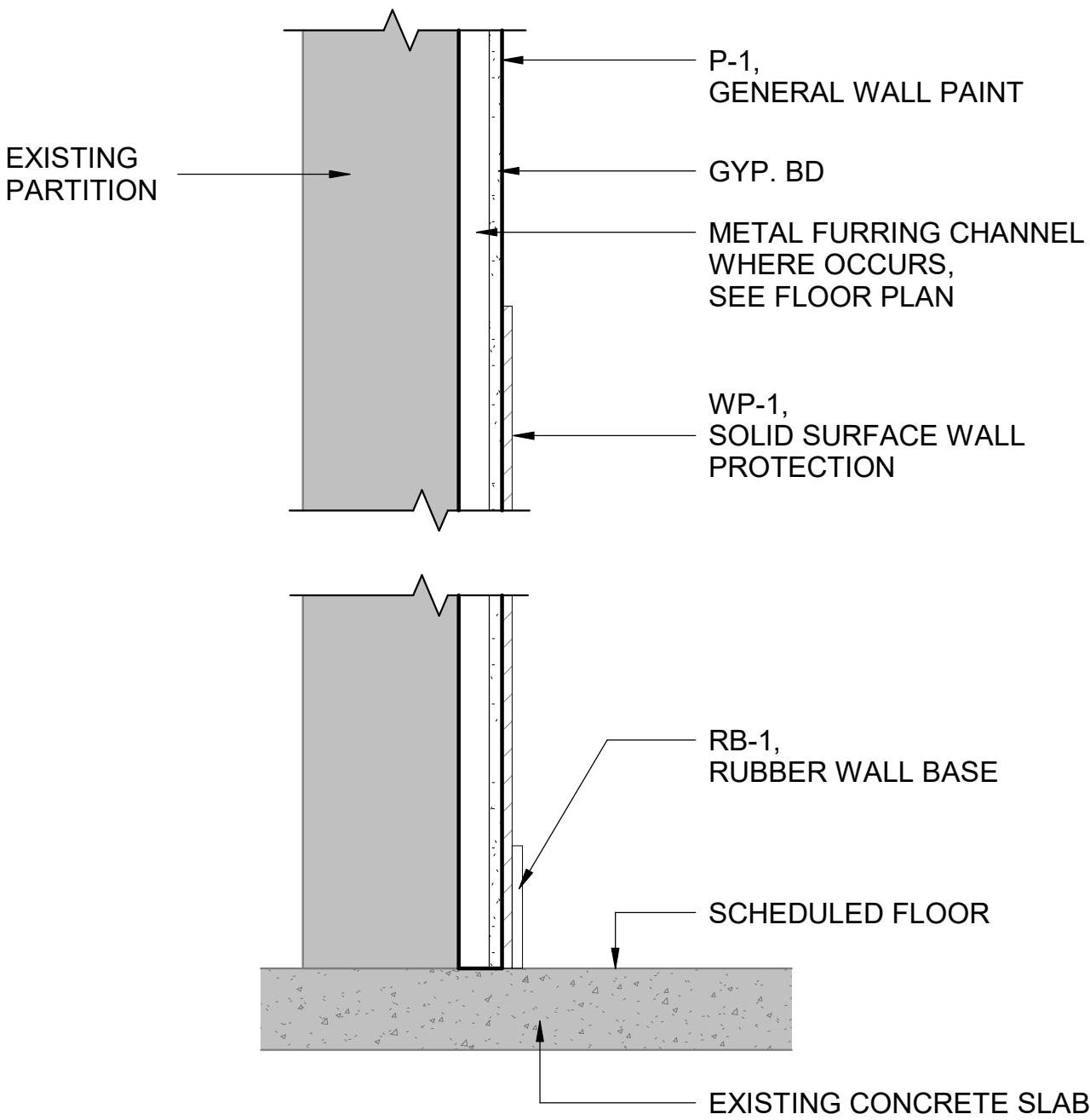
WALL DESIGNATION

REMARKS

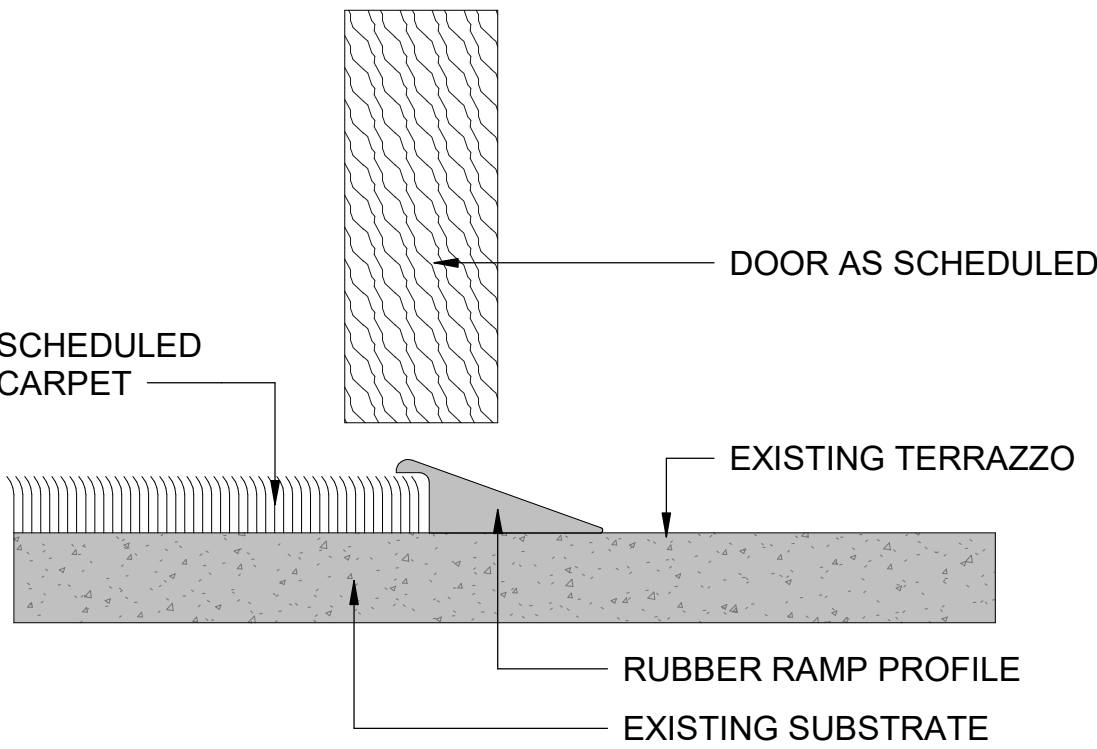
- EXISTING FINISHED WALLS TO TO BE ABRAINED TO A DULL FINISH AND PREPPED TO RECIEVE NEW SPECIFIED WALL FINISH.
- ONLY NEW WALLS ARE TO RECEIVE NEW WALL AND WALL BASE FINISHES. SEE INTERIOR FINISH PLAN FOR NEW FINISH LOCATIONS.
- SEE INTERIOR ELEVATIONS FOR RELOCATION OF ACOUSTICAL WALL PANELS.
- SEE INTERIOR FINISH PLAN FOR SOLID SURFACE WAINSCOTTING LOCATIONS.
- RUBBER WALL BASE NOT TO BE INSTALLED WHERE PORCELAIN WALL TILE IS LOCATED.
- NEW DOOR FRAMES TO BE PAINTED P-2.
- SEE REFLECTED CEILING PLANS FOR NEW GYP. BOARD CEILING LOCATIONS.
- NEW WALL BASE TO BE INSTALLED AT WALLS WHERE NEW RAISED PLATFORM OCCURS.
- WOOD TRIM AT RAISED PLATFORM TO BE PAINTED WT-1. SEE FINISH LEGEND.

INTERIOR MATERIALS & FINISHES ABBREVIATIONS LIST

|     |                       |      |                           |
|-----|-----------------------|------|---------------------------|
| ACT | ACOUSTIC CEILING TILE | RB   | RUBBER BASE               |
| CG  | CORNER GUARD          | RS   | ROLLER SHADE              |
| CPT | CARPET TILE           | SSEG | STAINLESS STEEL END GUARD |
| DF  | DOOR FINISH           | TP   | TRIM PAINT                |
| ETR | EXISTING TO REMAIN    | WP   | WALL PROTECTION           |
| GYP | GYPSUM BOARD          | WT   | WOOD TRIM, PAINTED        |
| NIC | NOT IN CONTRACT       |      |                           |
| P   | PAINT                 |      |                           |



B3 SOLID SURFACE WALL PROTECTION DETAIL  
SCALE: 1 1/2" = 1'-0"



A3 CPT TO TERRAZZO SILL DETAIL  
SCALE: N.T.S.



3500 Parkway Lane  
Suite 500  
Peachtree Corners  
Georgia 30092

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COA  
COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME

ITC BOARD  
ROOM

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: EB  
DRAWN BY: EB  
CHECKED BY: EM  
SUBMITTED BY: AS  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

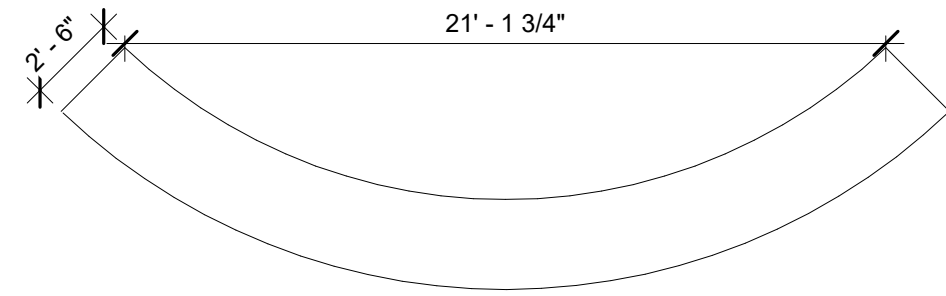
ROOM FINISH  
SCHEDULE &  
GENERAL NOTES

SHEET NUMBER

I-131

ORIGINAL SHEET SIZE:  
22" X 34"

T3 - U-SHAPE BOARD  
ROOM TABLE W/  
MODESTY PANEL



1. THIS PLAN IS PROVIDED FOR COORDINATION PURPOSES OF FURNITURE, EQUIPMENT, APPLIANCES, SIGNAGE, ACCESS CONTROL, AND SECURITY. IF CONFLICTS ARE IDENTIFIED, PLEASE NOTIFY TENANT AND/OR ARCHITECT IMMEDIATELY.
2. REFER TO ARCHITECTURAL GENERAL NOTES ON A-002 FOR ADDITIONAL INFORMATION.
3. REFER TO A-005 FOR WALL TYPES.
4. DETAIL REFERENCES SHOULD BE APPLIED TO ALL INSTANCES WHERE THE SAME CONDITIONS OCCUR, UNLESS NOTED OTHERWISE
5. FURNITURE PROVIDED BY OWNER, SHOWN FOR REFERENCE ONLY.



PROJECT NAME

CHATHAM AREA  
TRANSIT  
610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

## DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: EB  
DRAWN BY: EB  
CHECKED BY: EM  
SUBMITTED BY: AS  
DATE: 12/04/2025  
PROJECT #: 1230561

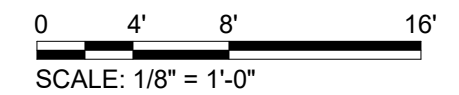
SHEET TITLE

FURNITURE  
FLOOR PLAN

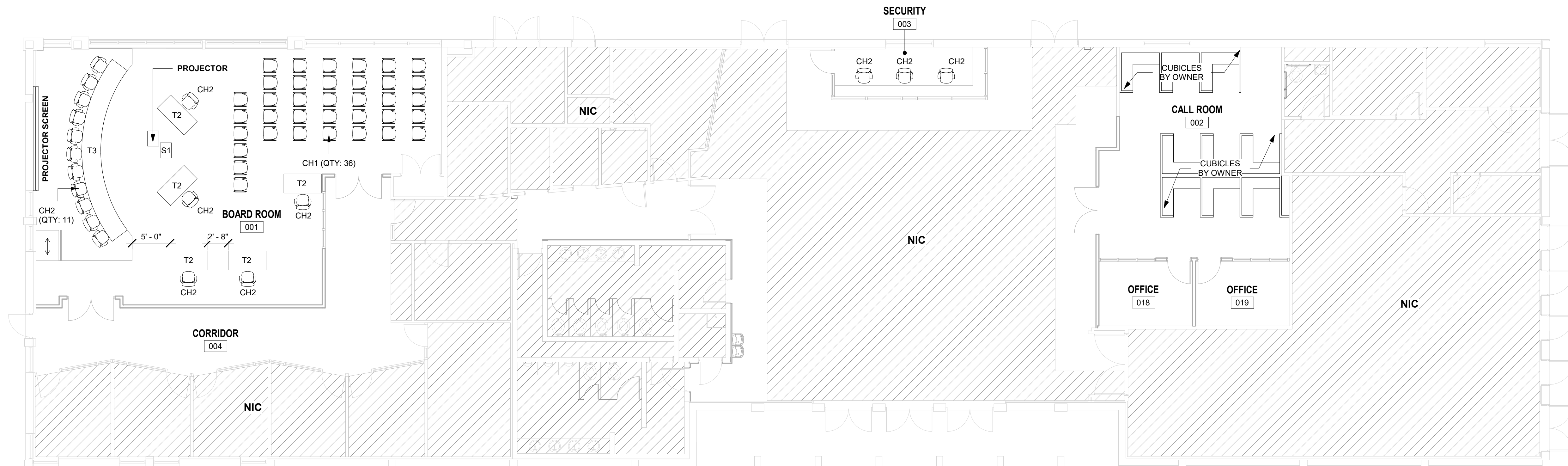
**SHEET NUMBER**

I-300

ORIGINAL SHEET SIZE:  
22" X 34"



100% SUBMITTAL - IFC



A1

## FURNITURE FLOOR PLAN

SCALE: 1/8" = 1'-0"

12/3/2025 7:20:17 PM Autodesk Docs://1230561 CAT ITC Board Room/1230561\_CAT ITC MEPF\_v23.rvt

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               |      |                                        |      |                         |      |                               |      |                             |      |          |            |                           |                |           |          |            |          |            |        |                            |  |                                 |         |                                |         |                                |         |                                    |  |                  |         |                        |       |                                  |         |                |         |  |         |  |                    |                      |              |                      |                       |    |    |      |    |  |  |  |  |    |
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| <div>NOTES:</div> <div><div><div>1. EXISTING EQUIPMENT IS SHOWN WITH THIN LINEWORK.</div><div>2. DEMOLISHED EQUIPMENT IS SHOWN WITH BOLD LINEWORK, DASHED, AND HATCHED.</div><div>3. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH BOLD LINEWORK.</div><div>4. BELOW IS AN EXAMPLE OF EACH:</div></div><div><div><div><div><div></div><div>EXISTING EQUIPMENT OR EQUIPMENT BY OTHERS</div></div><div><div><div>     </div><div>EQUIPMENT TO BE DEMOLISHED</div></div><div><div><div></div><div>NEW OR RELOCATED EQUIPMENT</div></div></div></div></div></div><div><div><div>CODE REFERENCES</div><table><tr><th>CODE REFERENCE (W/ GA AMENDMENTS)</th><th>EDITION</th></tr><tr><td>INTERNATIONAL BUILDING CODE</td><td>2018</td></tr><tr><td>INTERNATIONAL ENERGY CONSERVATION CODE</td><td>2018</td></tr><tr><td>INTERNATIONAL FIRE CODE</td><td>2018</td></tr><tr><td>INTERNATIONAL MECHANICAL CODE</td><td>2018</td></tr><tr><td>INTERNATIONAL PLUMBING CODE</td><td>2018</td></tr></table></div><div><div><div>HVAC DESIGN CRITERIA</div><table><tr><th>CATEGORY</th><th>DATA VALUE</th></tr><tr><td>CLIMATIC DESIGN LOCATION:</td><td>HUNTER AAF, GA</td></tr><tr><td>LATITUDE:</td><td>32.017 N</td></tr><tr><td>LONGITUDE:</td><td>81.133 W</td></tr><tr><td>ELEVATION:</td><td>41 FT.</td></tr><tr><td>STANDARD DESIGN CONDITIONS</td><td></td></tr><tr><td>WINTER DESIGN DRY BULB (99.0%):</td><td>31.6 °F</td></tr><tr><td>SUMMER DESIGN DRY BULB (1.0%):</td><td>93.3 °F</td></tr><tr><td>SUMMER DESIGN WET BULB (1.0%):</td><td>77.3 °F</td></tr><tr><td>DEHUMIDIFICATION DESIGN CONDITIONS</td><td></td></tr><tr><td>DEWPOINT (1.0%):</td><td>78.8 °F</td></tr><tr><td>HUMIDITY RATIO (1.0%):</td><td>149.9</td></tr><tr><td>MEAN COINCIDENT DRY BULB (1.0%):</td><td>83.7 °F</td></tr></table></div><div><div>INDOOR DESIGN CONDITIONS</div><table><tr><th rowspan="2">SPACE CATEGORY</th><th colspan="2">COOLING</th><th colspan="2">HEATING</th></tr><tr><th>OCC. DRY BULB (°F)</th><th>UNOCC. DRY BULB (°F)</th><th>OCC. DP (°F)</th><th>UNOCC. DRY BULB (°F)</th></tr><tr><td>ADMINISTRATION SPACES</td><td>75</td><td>85</td><td>57.9</td><td>70</td></tr><tr><td></td><td></td><td></td><td></td><td>55</td></tr></table></div></div><div><div>DEMOLITION LEGEND:</div><div><div><div><div></div><div>DEMOLISHED EQUIPMENT, DUCTWORK, APPURTENANCES</div></div><div><div><div>---</div><div>DEMOLISHED PIPING</div></div><div><div><div><div><div></div><div>CONNECT TO EXISTING</div></div><div><div><div></div><div>DISCONNECT FROM EXISTING</div></div></div></div></div></div></div><div><div>MECHANICAL GENERAL NOTES:</div><div><div><div>1. INSTALLATION OF HVAC WORK MUST BE COORDINATED WITH OTHER TRADES BEFORE ANY INSTALLATION IS MADE. PLANS ARE DIAGRAMMATIC IN NATURE. PROVIDE ALL TRANSITIONS, ELBOWS, ETC. REQUIRED TO AVOID CONFLICTS WITH OTHER TRADES AND BUILDING ELEMENTS. EQUIPMENT, PIPING, OR DUCTWORK INTERFERING WITH OTHER TRADES MUST BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER. DO NOT SCALE THE DRAWINGS.</div><div>2. THE MECHANICAL EQUIPMENT AND INSTALLATION MUST CONFORM TO THE CODE REFERENCES TABLE SHOWN HEREIN.</div><div>3. AT THE START OF CONSTRUCTION, PREPARE TYPED LISTS OF EQUIPMENT THAT ARE SUPPLIED REQUIRING ELECTRICAL WORK, AND SEND LISTS TO THE ELECTRICAL CONTRACTOR FOR REVIEW AND COORDINATION.</div><div>4. WRITTEN DIMENSIONS ON DRAWINGS HAVE PRECEDENCE OVER SCALED DIMENSIONS.</div><div>5. "PROVIDE" IS AN INCLUSIVE TERM USED TO DESCRIBE ASPECTS OF THE WORK THAT MUST BE ACCOMPLISHED AND IS HEREBY DEFINED TO REQUIRE TO STORE, FURNISH, INSTALL, MOUNT, CONNECT, CONTROL AND POWER EQUIPMENT INDICATED, AS WELL AS ALL APPURTENANCES REQUIRED TO MAKE SYSTEMS OPERATE AS INDICATED WITHIN THESE DRAWINGS AND SPECIFICATIONS AND TO FULFILL THE SCOPE OF WORK.</div><div>6. COORDINATE MECHANICAL AND ELECTRICAL WORK SUCH THAT MECHANICAL PIPING, DUCTWORK AND EQUIPMENT IS NOT LOCATED OVER OR ABOVE ANY ELECTRICAL, COMMUNICATIONS, OR DATA EQUIPMENT.</div><div>7. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S APPROVED PUBLISHED LITERATURE (INCLUDING SERVICE CLEARANCE), AND INTERNATIONAL BUILDING CODE / INTERNATIONAL MECHANICAL CODE, WHICHEVER IS MORE STRINGENT.</div><div>8. INSTALLATION OF EQUIPMENT MUST PERMIT ACCESSIBILITY FOR SERVICE AND/OR REPLACEMENT WITHOUT NECESSITATING REMOVAL OR MODIFICATION TO OTHER PIPING, WIRING, OR EQUIPMENT.</div><div>9. CEILING-MOUNTED EQUIPMENT MUST BE INSTALLED IN SUCH A MANNER THAT LIGHTS, PIPING, DUCTWORK, ETC., DO NOT BLOCK ACCESS TO EQUIPMENT AND RELATED ACCESSORIES.</div><div>10. COORDINATE WALL, FLOOR, AND ROOF PENETRATIONS WITH THE GENERAL CONTRACTOR.</div><div>11. CAULK WITH SILICONE ALL UNUSED PENETRATION GAPS BETWEEN WALL, CEILING AND FLOOR OPENINGS, AND HVAC EQUIPMENT PENETRATIONS MUST MATCH EXISTING OR AS SHOWN ON MECHANICAL DETAILS. PATCH LARGE GAPS BEFORE CAULKING IS APPLIED. REFER TO SPECIFICATION SECTION 23 30 00 - HVAC AIR DISTRIBUTION, SUBSECTION 3.6 - PENETRATIONS.</div><div>12. SUPPLEMENTAL STEEL MEMBERS REQUIRED TO SUPPORT HVAC EQUIPMENT FROM MAIN STRUCTURE MUST BE PROVIDED BY THE HVAC CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION TYPES. PROCURE AND INSTALL UPON APPROVAL FROM GENERAL CONTRACTOR. PROVIDE STRUCTURAL STEEL SUPPORT SUBMITTAL TO ENGINEER OF RECORD FOR REVIEW.</div><div>13. DUCTWORK AIR DISTRIBUTION SYSTEMS MUST BE INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND THE PRESSURE CLASSIFICATION OF EACH INDIVIDUAL DUCTWORK SYSTEM.</div><div>14. VOLUME DAMPERS MUST BE PROVIDED AT EACH NEW MAIN BRANCH TAKE-OFF AND IN SUCH OTHER LOCATIONS WHERE REQUIRED TO PROPERLY BALANCE THE SYSTEM. ALL REQUIRED VOLUME DAMPERS MAY NOT BE SHOWN ON THE PLANS, BUT MUST BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.</div><div>15. INSTRUMENT TEST HOLES MUST BE PROVIDED IN AIR DISTRIBUTION SYSTEMS WHEREVER VOLUME DAMPERS ARE INSTALLED. HOLES MUST BE SEAL WITH RUBBER OR PLASTIC TEST HOLE PLUGS.</div><div>16. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.</div><div>17. SQUARE ELBOWS SHALL ONLY BE USED WHERE SPACE LIMITATIONS PREVENT USE OF 1.5 RADIUS ELBOW AND ONLY UPON APPROVAL OF GENERAL CONTRACTOR. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS 45 DEGREES OR GREATER. TURNING VANES MUST BE SINGLE THICKNESS TYPE WITHOUT TRAILING EDGE. TURNING VANES LONGER THAN 36 INCHES MUST BE DOUBLE THICKNESS TYPE.</div><div>18. DUCTWORK RUNOUTS TO AIR DISTRIBUTION DEVICES MUST BE THE SAME DIAMETER AS THE AIR DISTRIBUTION DEVICE INLET CONNECTION UNLESS OTHERWISE NOTED ON THE DRAWINGS. DIMENSIONS SHOWN FOR DIFFUSERS AND GRILLES ARE NECK DIMENSIONS.</div><div>19. FLEXIBLE DUCTWORK RUNOUTS FROM BRANCH DUCTS TO AIR DISTRIBUTION DEVICES MUST NOT EXCEED 5 FEET IN LENGTH. BENDS IN FLEXIBLE DUCTWORK MUST NOT EXCEED A MAXIMUM OF 45 DEGREE CHANGE OF DIRECTION AND BE SUPPORTED SUCH THAT THE BEND RADIUS IS NOT RESTRICTIVE TO AIR FLOW THROUGH THE DUCT. FLEXIBLE DUCTWORK MUST NOT BE CRUSHED OR DISTORTED IN ITS FINAL CONFIGURATION.</div><div>20. ROUND DUCTWORK CONNECTIONS BETWEEN MAIN DUCT AND TERMINAL UNITS MUST BE RIGID DUCT OF THE SAME DIAMETER AS TERMINAL UNIT INLET CONNECTION UNLESS OTHERWISE NOTED ON THE DRAWINGS.</div><div>21. PROVIDE SHEETMETAL TRANSITIONS AT AIR HANDLING UNITS, HEAT PUMP UNITS, FANS, AND OTHER SIMILAR HVAC EQUIPMENT. TRANSITION TO FULL SIZE OF CONNECTION ON UNIT. FLEXIBLE DUCT CONNECTORS MUST BE USED ON FINAL CONNECTION TO AIR HANDLING EQUIPMENT, UNLESS NOTED OTHERWISE.</div><div>22. OPEN-ENDED AIR TRANSFER DUCTS AND OPEN-ENDED RETURN AIR DUCTS IN THE CEILING PLENUM MUST BE UNOBSTRUCTED FOR A MINIMUM DISTANCE OF 24 INCHES FROM THE OPENING TO ALLOW FOR FREE AIRFLOW. OPEN-ENDED AIR TRANSFER DUCTS AND OPEN-ENDED RETURN AIR DUCTS IN THE CEILING PLENUM MUST HAVE A 90 DEGREE ELBOW FOR SOUND ATTENUATION AND MUST HAVE WIRE MESH SCREEN COVERS. WIRE MESH SCREENS MUST BE ALUMINUM WITH 1/2" SQUARE HOLES. SIZE FOR MAXIMUM VELOCITY OF 400 FPM.</div><div>23. LOUVERED SUPPLY AIR DIFFUSERS MUST BE 4-WAY FLOW UNLESS OTHERWISE SHOWN BY FLOW ARROWS ON THE DRAWINGS. LINEAR DIFFUSERS MUST BE ADJUSTABLE 2-WAY FLOW. PROVIDE BATT INSULATION ON DIFFUSER AND GRILLES THAT ARE EXPOSED TO CEILING PLENUM.</div><div>24. EXACT LOCATION OF CEILING AIR DEVICES MUST BE DETERMINED BY ARCHITECTURAL REFLECTED CEILING PLAN.</div><div>25. EXACT LOCATIONS OF THERMOSTATS, SENSORS, AND HVAC CONTROL APPURTENANCES MUST BE COORDINATED WITH FINAL LOCATIONS OF WALL-MOUNTED ARCHITECTURAL, FIRE PROTECTION, AND ELECTRICAL EQUIPMENT. MOUNT THERMOSTATS AND SENSORS MINIMUM 4'-0" ABOVE FINISHED FLOOR.</div><div>26. PROVIDE ACCESS PANELS TO ACCESS DAMPERS, EQUIPMENT, AND VALVES LOCATED ABOVE HARD CEILINGS OR IN WALLS. ACTUAL ACCESS PANEL LOCATIONS MUST BE FIELD DETERMINED.</div><div>27. EXPOSED DUCTWORK, WITH THE EXCEPTION OF DUCTWORK IN MECHANICAL ROOMS, MUST BE DOUBLE-WALL, SPIRAL DUCTWORK WITH PAINT GRIP COATING. PAINT SPIRAL DUCTWORK TO MATCH ADJACENT EXPOSED SURFACE.</div><div>28. SUPPLY, RETURN, AND OUTDOOR AIR DUCTWORK MUST BE INSULATED TO MEET OR EXCEED ASHRAE 90.1-2016. EXTERIOR SUPPLY AND RETURN AIR DUCTWORK MUST BE PROVIDED WITH WEATHER-PROOF COVER.</div><div>29. UNLESS NOTED OTHERWISE, ACCESS MUST BE PROVIDED AT EACH INSTANCE OF THE FOLLOWING: SMOKE DAMPERS, DUCT ACCESS DOORS MUST BE LOCATED CLOSE TO EACH COMPONENT LISTED ABOVE TO ALLOW FOR INSPECTION. IF FEASIBLE, LOCATE DUCT ACCESS DOOR ON THE UNDERSIDE OF THE DUCT RATHER THAN THE SIDE. MINIMUM DUCT ACCESS DOOR SIZE MUST BE BASED ON DUCT SIZE AS FOLLOWS:<div><div>DUCT SIZE</div><div>12" AND SMALLER</div><div>13" TO 17"</div><div>18" TO 24"</div><div>25" AND LARGER</div></div><div><div>ACCESS DOOR SIZE</div><div>12" LONG FLANGED &amp; GASKETED REMOVABLE DUCT SECTION</div><div>12" X 12"</div><div>16" X 18"</div><div>24" X 16"</div></div></div><div>30. PIPING INSULATION MUST BE PROVIDED ON ALL PIPING SYSTEMS INCLUDING (BUT NOT LIMITED TO) CHILLED WATER, HEATING HOT WATER, CONDENSER WATER, REFRIGERANT, AND CONDENSATE DRAIN IN ACCORDANCE WITH ASHRAE 90.1-2016.</div><div>31. SIZE REFRIGERANT LINES PER MANUFACTURER'S INSTRUCTIONS BASED ON ACTUAL LINE LENGTHS AND EQUIPMENT ELEVATIONS INSTALLED. USE OF HCFC AND CFC REFRIGERANTS IS PROHIBITED. INSULATION ON REFRIGERANT LINES EXPOSED TO WEATHER MUST HAVE ALUMINUM JACKETING.</div><div>32. PROVIDE SUPPORTS FOR PIPING AND DUCTWORK IN ACCORDANCE WITH SPECIFICATIONS.</div><div>33. PROVIDE HOUSEKEEPING PADS FOR MECHANICAL EQUIPMENT. COORDINATE WITH STRUCTURAL.</div><div>34. CONTROL WIRING (I.E. 120 VOLT AND BELOW) INCLUDING 120 VOLT CONTROL POWER TO MOTOR OPERATED DAMPERS, VALVES, AND VARIABLE VOLUME BOXES MUST BE PROVIDED UNDER THIS DIVISION UNLESS SHOWN ON THE ELECTRICAL DRAWINGS. POWER WIRING (120V) TO CONTROL PANELS MUST BE PROVIDED BY ELECTRICAL. POWER (120V) AND CONTROL (24V) WIRING TO APPLICATION-SPECIFIC CONTROLLERS AND OTHER CONTROL SYSTEM COMPONENTS MUST ORIGINATE AT CONTROL PANELS AND BE PROVIDED UNDER THIS DIVISION.</div><div>35. INSTALL EXPOSED CONTROL WIRING IN CONDUIT. SEE DIVISION 26 SPECIFICATIONS FOR REQUIREMENTS.</div><div>36. VARIABLE FREQUENCY DRIVES FOR 3 PHASE MOTORS MUST BE 3 POLE TYPE.</div><div>37. ALL EQUIPMENT WITH NATURAL GAS COMBUSTION MUST BE VENTED PER THE APPLICABLE CODES.</div><div>38. MANUFACTURER NAME AND MODEL NUMBERS ARE BASIS OF DESIGN AND ARE SHOWN FOR INFORMATION ONLY. REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.</div><div>39. EQUIPMENT LAYOUT IS BASED ON ONE MANUFACTURER'S PRODUCT. WHERE EQUIPMENT SELECTED BY THE CONTRACTOR FOR USE ON THE JOB DIFFERS FROM LAYOUT, THE CONTRACTOR MUST BE RESPONSIBLE FOR COORDINATING SPACE REQUIREMENTS AND EQUIPMENT CONNECTION ARRANGEMENTS.</div><div>40. SPECIFICATIONS TAKE PRECEDENCE OVER DRAWINGS. HOWEVER, ITEMS SHOWN ON DRAWING BUT NOT IN THE SPECIFICATIONS ARE REQUIRED WITHIN THE PROJECT SCOPE. IN ADDITION, SPECIFIC ITEMS SHOWN ON THE DRAWINGS TAKE PRECEDENCE OVER SPECIFICATIONS IN CASES WHERE THE SPECIFICATION HAS OPTIONS.</div><div>41. FACTORY PAINTED EQUIPMENT THAT HAS BEEN SCRATCHED OR MARRED MUST REPAINTED TO MATCH ORIGINAL COLOR. STEEL EQUIPMENT HANGERS, THREADED RODS, BOLTS, NUTS, SUPPORTS, AND UNINSULATED BLACK STEEL PIPE EXPOSED TO SIGHT INSIDE OR OUTSIDE THE BUILDING WHICH ARE NOT PROVIDED WITH A FACTORY APPLIED PRIME COAT MUST BE CLEANED OF RUST, GREASE, AND SCALE. AFTER CLEANING THE HANGERS, SUPPORTS AND PIPE, A FIELD APPLIED PRIME COAT MUST BE PROVIDED. IN ADDITION, SUCH ITEMS IN FINISHED SPACES MUST ALSO BE PROVIDED WITH TWO COATS OF FINISH PAINT IN A COLOR TO MATCH ADJACENT SURFACES OR AS NOTED; SUCH ITEMS OUTSIDE THE BUILDING MUST ALSO BE PROVIDED WITH TWO COATS OF BITUMINOUS ALUMINUM PAINT. INSULATED PIPES OUTSIDE THE BUILDING MUST BE CLEANED OF RUST, GREASE AND SCALE, AND PROVIDED WITH A FIELD APPLIED PRIME COAT BEFORE INSTALLING INSULATION.</div><div>42. NOT ALL MECHANICAL ABBREVIATIONS SHOWN WILL BE USED FOR THIS PROJECT.</div></div></div></div></div></div></div></div></div></div> |                    |                      |              |                      |   | CODE REFERENCE (W/ GA AMENDMENTS) | EDITION | INTERNATIONAL BUILDING CODE | 2018 | INTERNATIONAL ENERGY CONSERVATION CODE | 2018 | INTERNATIONAL FIRE CODE | 2018 | INTERNATIONAL MECHANICAL CODE | 2018 | INTERNATIONAL PLUMBING CODE | 2018 | CATEGORY | DATA VALUE | CLIMATIC DESIGN LOCATION: | HUNTER AAF, GA | LATITUDE: | 32.017 N | LONGITUDE: | 81.133 W | ELEVATION: | 41 FT. | STANDARD DESIGN CONDITIONS |  | WINTER DESIGN DRY BULB (99.0%): | 31.6 °F | SUMMER DESIGN DRY BULB (1.0%): | 93.3 °F | SUMMER DESIGN WET BULB (1.0%): | 77.3 °F | DEHUMIDIFICATION DESIGN CONDITIONS |  | DEWPOINT (1.0%): | 78.8 °F | HUMIDITY RATIO (1.0%): | 149.9 | MEAN COINCIDENT DRY BULB (1.0%): | 83.7 °F | SPACE CATEGORY | COOLING |  | HEATING |  | OCC. DRY BULB (°F) | UNOCC. DRY BULB (°F) | OCC. DP (°F) | UNOCC. DRY BULB (°F) | ADMINISTRATION SPACES | 75 | 85 | 57.9 | 70 |  |  |  |  | 55 |
| CODE REFERENCE (W/ GA AMENDMENTS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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               |      |                                        |      |                         |      |                               |      |                             |      |          |            |                           |                |           |          |            |          |            |        |                            |  |                                 |         |                                |         |                                |         |                                    |  |                  |         |                        |       |                                  |         |                |         |  |         |  |                    |                      |              |                      |                       |    |    |      |    |  |  |  |  |    |
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DRY BULB (°F) | UNOCC. DRY BULB (°F) | OCC. DP (°F) | UNOCC. DRY BULB (°F) |   |                                   |         |                             |      |                                        |      |                         |      |                               |      |                             |      |          |            |                           |                |           |          |            |          |            |        |                            |  |                                 |         |                                |         |                                |         |                                    |  |                  |         |                        |       |                                  |         |                |         |  |         |  |                    |                      |              |                      |                       |    |    |      |    |  |  |  |  |    |
| ADMINISTRATION SPACES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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POND

3500 Parkway Lane

Suite 500

Peachtree Corners

Georgia 30092

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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

REGISTERED PROFESSIONAL ENGINEER  
JENNIFER LAMERE WATERS  
12-03-2025

CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
GENERAL NOTES  
AND DESIGN  
CRITERIA

SHEET NUMBER

M-001

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

12/3/2025 7:20:18 PM Autodesk Docs://1230561 CAT ITC Board Room/1230561\_CAT ITC\_MEFP\_V23.rvt

D

C

B

A

MECHANICAL ABBREVIATIONS:

|           |                                                                            |          |                                                                    |
|-----------|----------------------------------------------------------------------------|----------|--------------------------------------------------------------------|
| @         | AT                                                                         | H        | HEIGHT                                                             |
| &         | AND                                                                        | HGRH     | HOT GAS REHEAT                                                     |
| AFF       | ABOVE FINISHED FLOOR                                                       | HP       | HORSEPOWER, HEAT PUMP                                              |
| A/C       | ABOVE CEILING                                                              | HR       | HOOR                                                               |
| AC        | AIR CONDITIONER                                                            | HSPF     | HEATING SEASONAL PERFORMANCE FACTOR                                |
| ADJ       | ADJUSTABLE                                                                 | HTG      | HEATING                                                            |
| AFMS      | AIRFLOW MEASURING STATION                                                  | HUH      | HYDRONIC UNIT HEATER                                               |
| AFUE      | ANNUAL FUEL UTILIZATION EFFICIENCY                                         | HVAC     | HEATING, VENTILATING, AND AIR CONDITIONING                         |
| AHRI      | AIR CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE                     | HVLS     | HIGH-VOLUME LOW-SPEED                                              |
|           |                                                                            | HX       | HEAT EXCHANGER                                                     |
|           |                                                                            | HZ       | HERTZ                                                              |
| AHU       | AIR HANDLING UNIT                                                          |          |                                                                    |
| AMB       | AMBIENT                                                                    | IMC      | INTERNATIONAL MECHANICAL CODE                                      |
| AMCA      | AIR MOVEMENT AND CONTROL ASSOCIATION                                       | IN       | INCH, INCHES                                                       |
| ARCH      | ARCHITECT, ARCHITECTURAL                                                   | IN WC    | INCHES WATER COLUMN                                                |
| AS        | AIR SEPARATOR                                                              | IN WG    | INCHES WATER GAUGE                                                 |
| ASHRAE    | AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS | IPLV     | INTEGRATED PART LOAD VALUE                                         |
|           |                                                                            | IRH      | INFRARED HEATER                                                    |
| ASTM      | AMERICAN SOCIETY FOR TESTING AND MATERIALS                                 | KW       | KILOWATTS                                                          |
| AUX       | AUXILIARY                                                                  |          |                                                                    |
| AWS       | AMERICAN WELDING SOCIETY                                                   | L        | LENGTH, LOUVER (WALL)                                              |
| AWG       | AMERICAN WIRE GAUGE                                                        | LAT      | LEAVING AIR TEMPERATURE                                            |
|           |                                                                            | LBS      | POUNDS                                                             |
|           |                                                                            | LWT      | LEAVING WATER TEMPERATURE                                          |
| B         | BOILER                                                                     | MAU      | MAKE-UP AIR UNIT                                                   |
| BD        | BACKDRAFT DAMPER                                                           | MAX      | MAXIMUM                                                            |
| BLDG      | BUILDING                                                                   | MBH      | 1000 BRITISH THERMAL UNITS                                         |
| BOD       | BOTTOM OF DUCT                                                             | MERV     | MINIMUM EFFICIENCY REPORTING VALUE                                 |
| B/F       | BELOW FLOOR                                                                | MECH     | MECHANICAL                                                         |
| B/S       | BELOW SLAB                                                                 | MFR, MFG | MANUFACTURER, MANUFACTURING                                        |
| BT        | BUFFER TANK                                                                | MIN      | MINIMUM                                                            |
| BTU, BTUH | BRITISH THERMAL UNITS, BTUs PER HOUR                                       | MOD      | MOTOR OPERATED DAMPER                                              |
|           |                                                                            | MSS      | MANUFACTURER'S STANDARDIZATION SOCIETY                             |
|           |                                                                            | MTD      | MOUNTED                                                            |
|           |                                                                            | MUW      | MAKE-UP WATER (POTABLE/ DOMESTIC)                                  |
| CA        | COMBUSTION AIR INTAKE                                                      | NC       | NOISE CRITERIA                                                     |
| CAV       | CONSTANT AIR VOLUME                                                        | N.C.     | NORMALLY CLOSED                                                    |
| CD        | CONDENSATE DRAIN                                                           | NO.      | NUMBER                                                             |
| CFM       | CUBIC FEET PER MINUTE                                                      | N.O.     | NORMALLY OPEN                                                      |
| CH        | CHILLER                                                                    | NPLV     | NET PART LOAD VALUE                                                |
| CHWR      | CHILLED WATER RETURN                                                       | NTS      | NOT TO SCALE                                                       |
| CHWS      | CHILLED WATER SUPPLY                                                       |          |                                                                    |
| CLG       | COOLING                                                                    | OA       | OUTSIDE AIR                                                        |
| CMU       | CONCRETE MASONRY UNIT                                                      | O.C.     | ON CENTER                                                          |
| CO        | CLEANOUT                                                                   |          |                                                                    |
| CO2       | CARBON DIOXIDE                                                             | PD       | PRESSURE DROP                                                      |
| CONC      | CONCRETE                                                                   | PH       | PHASE                                                              |
| CONN      | CONNECT, CONNECTING, CONNECTION                                            | PIU      | POWERED-INDUCTION UNIT                                             |
| CONT      | CONTINUED                                                                  | PLBG     | PLUMBING                                                           |
| COP       | COEFFICIENT OF PERFORMANCE                                                 | PPM      | PARTS PER MILLION                                                  |
| COR       | CONTRACTING OFFICER'S (OWNER'S) REPRESENTATIVE                             | PRV      | PRESSURE RELIEF VALVE                                              |
|           |                                                                            | PSI(G)   | POUNDS-FORCE PER SQUARE INCH (GAUGE)                               |
| CRAC      | COMPUTER ROOM AIR CONDITIONER                                              | QTY      | QUANTITY                                                           |
| CT        | COOLING TOWER                                                              |          |                                                                    |
| CU        | CONDENSING UNIT                                                            | RA       | RETURN AIR                                                         |
| CWR       | CONDENSER WATER RETURN                                                     | RH       | RELATIVE HUMIDITY, ROOF HOOD                                       |
| CWS       | CONDENSER WATER SUPPLY                                                     | RHG      | REFRIGERANT HOT GAS                                                |
|           |                                                                            | RL       | REFRIGERANT LIQUID                                                 |
|           |                                                                            | RLA      | RELIEF AIR                                                         |
|           |                                                                            | RM       | ROOM                                                               |
|           |                                                                            | RPM      | REVOLUTIONS PER MINUTE                                             |
|           |                                                                            | RS       | REFRIGERANT SUCTION                                                |
|           |                                                                            | RTU      | ROOFTOP UNIT                                                       |
|           |                                                                            |          |                                                                    |
|           |                                                                            | SA       | SUPPLY AIR                                                         |
|           |                                                                            | SD       | SMOKE DAMPER                                                       |
|           |                                                                            | SEER     | SEASONAL ENERGY EFFICIENCY RATIO                                   |
|           |                                                                            | SF       | SUPPLY FAN                                                         |
|           |                                                                            | SKD      | SMOKE DETECTOR                                                     |
|           |                                                                            | SMACNA   | SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION |
|           |                                                                            | SP       | STATIC PRESSURE                                                    |
|           |                                                                            | SS       | STAINLESS STEEL                                                    |
|           |                                                                            |          |                                                                    |
|           |                                                                            | TA       | TRANSFER AIR                                                       |
|           |                                                                            | TEMP     | TEMPERATURE                                                        |
|           |                                                                            | TG       | TRANSFER GRILLE                                                    |
|           |                                                                            | TP       | TEMPERATURE/ PRESSURE TEST PORT                                    |
|           |                                                                            | TSTAT    | THERMOSTAT                                                         |
|           |                                                                            | TYP      | TYPICAL                                                            |
|           |                                                                            |          |                                                                    |
|           |                                                                            | UH       | UNIT HEATER                                                        |
|           |                                                                            | UL       | UNDERWRITER'S LABORATORY                                           |
|           |                                                                            | UMCS     | UTILITY MONITORING AND CONTROL SYSTEM                              |
|           |                                                                            |          |                                                                    |
|           |                                                                            | V        | VOLTAGE, VOLTS                                                     |
|           |                                                                            | VAV      | VARIABLE AIR VOLUME                                                |
|           |                                                                            | VD       | VOLUME DAMPER                                                      |
|           |                                                                            | VELO     | VELOCITY                                                           |
|           |                                                                            | VFD      | VARIABLE FREQUENCY DRIVE                                           |
|           |                                                                            | VSD      | VARIABLE SPEED DRIVE                                               |
|           |                                                                            |          |                                                                    |
|           |                                                                            | W        | WATT(S), WIDTH                                                     |
|           |                                                                            | W/       | WITH                                                               |
|           |                                                                            | W/O      | WITHOUT                                                            |
|           |                                                                            | WB, Twb  | WET BULB (TEMPERATURE)                                             |
|           |                                                                            | WD       | WIDE                                                               |
|           |                                                                            | WMS      | WIRE MESH SCREEN                                                   |
| GA        | GAGE                                                                       |          |                                                                    |
| GC        | GENERAL CONTRACTOR                                                         |          |                                                                    |
| GPM       | GALLONS PER MINUTE                                                         |          |                                                                    |

DUCTWORK LEGEND:

|  |                                                                                                                |
|--|----------------------------------------------------------------------------------------------------------------|
|  | ROUND DUCT. DIAMETER INDICATED IN INCHES.                                                                      |
|  | FLAT OVAL DUCT. SIZE INDICATED IN INCHES, FIRST NUMBER IS SIDE SHOWN                                           |
|  | RECTANGULAR DUCT. SIZE INDICATED IN INCHES, FIRST NUMBER IS SIDE SHOWN. DASHED LINES INDICATE ACOUSTICAL LINER |
|  | 90 DEGREE DUCT ELBOW WITH TURNING VANES                                                                        |
|  | RADIUS DUCT ELBOW - ROUND OR RECTANGULAR (MIN. 1.5 RADIUS UNLESS OTHERWISE NOTED)                              |
|  | RECTANGULAR DUCT BRANCH TAKE-OFF WITH 45 DEGREE BRANCH INLET                                                   |
|  | SQUARE TO ROUND DUCT BRANCH TAKE-OFF WITH 45 DEGREE BRANCH INLET                                               |
|  | FLARED SPIN-IN WITH DAMPER AND FLEX DUCT (DIFFUSER CONNECTION)                                                 |
|  | ROUND DUCT BRANCH TAKE-OFF FROM RECTANGULAR MAIN WITH CONICAL TAP                                              |
|  | DUCT SIZE TRANSITION                                                                                           |
|  | DUCT SIZE TRANSITION RECTANGULAR TO ROUND                                                                      |
|  | FLEXIBLE DUCT CONNECTION                                                                                       |
|  | SUPPLY OR OUTSIDE AIR DUCT UP                                                                                  |
|  | SUPPLY OR OUTSIDE AIR DUCT DOWN                                                                                |
|  | RETURN AIR DUCT UP                                                                                             |
|  | RETURN AIR DUCT DOWN                                                                                           |
|  | EXHAUST AIR DUCT UP                                                                                            |
|  | EXHAUST AIR DUCT DOWN                                                                                          |
|  | IN-LINE 90 DEGREE RISE/DROP IN SUPPLY DUCT (RIGHT SIDE IS HIGHER)                                              |
|  | IN-LINE 90 DEGREE RISE/DROP IN SUPPLY DUCT (LEFT SIDE IS HIGHER)                                               |
|  | IN-LINE 90 DEGREE RISE/DROP IN RETURN DUCT (RIGHT SIDE IS HIGHER)                                              |
|  | IN-LINE 90 DEGREE RISE/DROP IN RETURN DUCT (LEFT SIDE IS HIGHER)                                               |
|  | IN-LINE 90 DEGREE RISE/DROP IN EXHAUST DUCT (RIGHT SIDE IS HIGHER)                                             |
|  | IN-LINE 90 DEGREE RISE/DROP IN EXHAUST DUCT (LEFT SIDE IS HIGHER)                                              |
|  | DUCT MOUNTED HUMIDIFIER                                                                                        |
|  | DUCT MOUNTED SMOKE DETECTOR                                                                                    |
|  | VOLUME/BALANCING DAMPER (LABEL MAY BE OMITTED)                                                                 |
|  | BACKDRAFT DAMPER (COUNTER-BALANCED UNLESS OTHERWISE NOTED)                                                     |
|  | DAMPER TYPE:<br>M - MOTORIZED DAMPER (ELECTRIC)<br>P - PNEUMATIC-ACTUATED DAMPER                               |
|  | FIRE DAMPER                                                                                                    |
|  | SMOKE DAMPER                                                                                                   |
|  | COMBINATION FIRE/SMOKE DAMPER                                                                                  |

PIPING LEGEND:

|  |                                                |
|--|------------------------------------------------|
|  | CONDENSATE DRAIN                               |
|  | CHILLED WATER RETURN                           |
|  | CHILLED WATER SUPPLY                           |
|  | CONDENSER WATER RETURN                         |
|  | CONDENSER WATER SUPPLY                         |
|  | HEATING HOT WATER RETURN                       |
|  | HEATING HOT WATER SUPPLY                       |
|  | REFRIGERANT HOT GAS                            |
|  | REFRIGERANT LIQUID                             |
|  | REFRIGERANT SUCTION                            |
|  | ELBOW UP                                       |
|  | ELBOW DOWN                                     |
|  | RISE OR DROP                                   |
|  | BRANCH BOTTOM CONNECTION                       |
|  | BRANCH TOP CONNECTION                          |
|  | TEE OUTLET UP                                  |
|  | TEE OUTLET DOWN                                |
|  | PIPE CAP                                       |
|  | CLEANOUT                                       |
|  | PIPE CONTINUATION                              |
|  | PIPE BELOW SLAB OR BELOW GRADE                 |
|  | DIRECTION OF FLOW                              |
|  | DIRECTION OF SLOPE DOWN                        |
|  | CONCENTRIC REDUCER                             |
|  | ECCENTRIC REDUCER                              |
|  | UNION                                          |
|  | PIPE FLANGE                                    |
|  | PIPE ANCHOR (PA)                               |
|  | PIPE GUIDE (PG)                                |
|  | EXPANSION JOINT (EJ)                           |
|  | FLEXIBLE PIPE CONNECTOR                        |
|  | STRAINER (WITH BLOWDOWN VALVE, CAP, AND CHAIN) |
|  | VALVE (GENERIC)                                |
|  | GATE VALVE                                     |
|  | GLOBE VALVE                                    |
|  | BALL VALVE                                     |
|  | METERED BALANCING VALVE                        |
|  | CHECK VALVE                                    |
|  | BUTTERFLY VALVE                                |
|  | PRESSURE REDUCING VALVE                        |
|  | PRESSURE/TEMPERATURE PORT WITH GAUGE COCK      |
|  | FLOW SWITCH                                    |
|  | PRESSURE SWITCH                                |
|  | PLUG VALVE                                     |
|  | MANUAL AIR VENT                                |
|  | AUTOMATIC AIR VENT                             |
|  | T&P RELIEF VALVE                               |
|  | PRESSURE GAUGE WITH GAUGE COCK                 |
|  | THERMOMETER                                    |
|  | WATER METER                                    |
|  | FLEXIBLE PIPE                                  |

MISCELLANEOUS LEGEND:

|                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | SUPPLY AIR DEVICE              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | RETURN AIR DEVICE              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | EXHAUST AIR DEVICE             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | SIDEWALL AIR DEVICE            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | LINEAR SLOT AIR DEVICE         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | FAN CONTROLLER                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | REMOTE CONTROLLER (VRF SYSTEM) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | THERMOSTAT                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | HUMIDISTAT                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | THERMOSTAT / HUMIDISTAT        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | START / STOP SWITCH            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | FIRESTAT                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | TEMPERATURE SENSOR             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | HUMIDITY SENSOR                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | STATIC PRESSURE SENSOR         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | DIFFERENTIAL PRESSURE SENSOR   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | CARBON MONOXIDE SENSOR         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | CARBON DIOXIDE SENSOR          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | AIR QUALITY SENSOR             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | VARIABLE FREQUENCY DRIVE       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | ROUND                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | OVAL OR FLAT OVAL              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | SERVICE CLEARANCE              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | DUCT PRESSURE CLASS (IN WG)    |
| <p><b>AIR DISTRIBUTION DEVICE TAGS:</b></p> <p>CONNECTION SIZE (X"xX" INDICATES RECTANGULAR, X"/X" INDICATES OVAL, X"Ø INDICATES ROUND)</p> <p>X"xX" A DIFFUSER TYPE</p> <p>400 AIRFLOW (CFM), "PLENUM", OR "TRANSFER"</p> <p>TYP. OF # TYPICAL OF QUANTITY INDICATED</p> <p>FLOW ARROW</p> <p>ALL CEILING SUPPLY DIFFUSERS MUST BE 4-WAY FLOW PATTERN, UNLESS NOTED OTHERWISE BY FILLED REGION.</p> <p>3-WAY 2-WAY 2-WAY 1-WAY</p> |                                |
| <p><b>DRAWING REFERENCE KEY:</b></p> <p>REFER TO</p> <p>DETAIL NUMBER</p> <p>RE:A1/M-501</p> <p>SHEET NUMBER OF DETAIL</p> <p>REFER TO</p> <p>DETAIL NUMBER</p> <p>1) REF: A1/ M-501</p> <p>SHEET NUMBER OF DETAIL</p> <p>KEYNOTE NUMBER; REFER TO KEYNOTE LEGEND ON SHEET</p>                                                                                                                                                      |                                |
| <p><b>NORTH ARROW:</b></p> <p>PLAN NORTH</p> <p>TRUE NORTH</p>                                                                                                                                                                                                                                                                                                                                                                      |                                |



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COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
ABBREVIATIONS  
AND LEGENDS

SHEET NUMBER

M-002

ORIGINAL SHEET SIZE:  
22" X 34"

D

C

B

A

23 00 00 - HVAC GENERAL

QUALITY ASSURANCE:

- A. THE MECHANICAL EQUIPMENT AND INSTALLATION MUST CONFORM TO THE FOLLOWING CODES WITH GEORGIA AMENDMENTS UP TO OCTOBER 2023:
  - 1. THE INTERNATIONAL BUILDING CODE 2018 EDITION.
  - 2. THE INTERNATIONAL MECHANICAL CODE 2018 EDITION.
  - 3. THE INTERNATIONAL PLUMBING CODE 2018 EDITION.
  - 4. THE INTERNATIONAL GAS CODE 2018 EDITION.
  - 5. THE INTERNATIONAL FIRE PROTECTION CODE 2018 EDITION.
  - 6. THE INTERNATIONAL ENERGY CODE 2018 EDITION.
- B. THE MECHANICAL EQUIPMENT AND INSTALLATION MUST CONFORM TO THE FOLLOWING STANDARDS:
  - 1. ASSOCIATE AIR BALANCE COUNCIL (AABC): NATIONAL STANDARD FOR TOTAL SYSTEM BALANCE.
  - 2. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA): STANDARD 90A: INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS.
  - STANDARD 70: NATIONAL ELECTRICAL CODE (NEC)
- C. PUBLICATION DATES: WHERE THE DATE OF ISSUE OF A REFERENCE STANDARD IS NOT SPECIFIED, COMPLY WITH THE STANDARD THAT IS EFFECTIVE AS OF THE DATE OF CONTRACT DOCUMENT.
- D. PERMITS
  - 1. OBTAIN ALL PERMITS AND INSPECTIONS FOR THE INSTALLATION OF THIS WORK AND PAY ALL CHARGES INCIDENT THERETO. DELIVER TO THE OWNER ALL CERTIFICATES OF SAID INSPECTION ISSUED BY AUTHORITIES HAVING JURISDICTION.
- E. WORKMANSHIP AND MATERIALS COVERED BY THESE SPECIFICATIONS MUST CONFORM TO ALL ORDINANCES AND REGULATIONS OF THE CITY, COUNTY, AND/OR OTHER AUTHORITIES HAVING JURISDICTION.
- F. OPERATIONS AND MAINTENANCE MANUALS FOR ALL SCHEDULED EQUIPMENT MUST BE PROVIDED TO THE OWNER AS PART OF FINAL ACCEPTANCE.

GUARANTEE:

- A. COMPONENTS OF THE MECHANICAL SYSTEM FURNISHED UNDER THIS DIVISION OF THE SPECIFICATIONS MUST BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE THEREOF, EITHER FOR BENEFICIAL USE OR FINAL ACCEPTANCE, WHICHEVER IS EARLIER, AGAINST DEFECTIVE MATERIAL, DESIGN, AND WORKMANSHIP.

ELECTRICAL WORK:

- A. ALL ELECTRICAL EQUIPMENT FURNISHED UNDER THIS DIVISION OF THESE SPECIFICATIONS MUST COMPLY THE ELECTRICAL SYSTEM CHARACTERISTICS INDICATED ON THE ELECTRICAL DRAWINGS.
- B. MOTOR CONTROL COMPONENTS FURNISHED AS AN INTEGRAL PART OF MECHANICAL EQUIPMENT MUST CONFORM TO REQUIREMENTS OF ELECTRICAL DRAWINGS.
- C. POWER WIRING MUST BE PROVIDED BY ELECTRICAL.
- D. WIRING AND CONDUIT BETWEEN VFD AND MOTOR MUST BE UNDER THIS DIVISION UNLESS IT IS INDICATED ON THE ELECTRICAL DRAWINGS. WIRING AND CONDUIT MUST BE PER NEC AND ELECTRICAL SPECIFICATIONS.

PAINTING:

- A. FACTORY PAINTED EQUIPMENT THAT HAS BEEN SCRATCHED OR MARRED MUST BE REPAINTED TO MATCH ORIGINAL COLOR.
- B. STEEL EQUIPMENT HANGERS, SUPPORTS, AND UNINSULATED BLACK STEEL PIPE EXPOSED TO SIGHT INSIDE THE BUILDING WHICH ARE NOT PROVIDED WITH A FACTORY APPLIED PRIME COAT MUST BE CLEANED OF RUST, GREASE, AND SCALE. AFTER CLEANING HANGERS, SUPPORTS, AND PIPE, PROVIDE A FILED-APPLIED PRIME COAT. IN ADDITION, SUCH ITEMS IN FINISHED SPACES MUST BE PROVIDED WITH TWO COATS OF FINISH PAINT IN A COLOR TO MATCH THE ADJACENT SURFACE.

CLEANING AND ADJUSTING:

- A. ALL EQUIPMENT, PIPE, VALVES, AND FITTINGS MUST BE CLEANED OF GREASE, OIL, PAINT SPOTS, METAL CUTTINGS, SLUDGE, AND CONSTRUCTION DEBRIS.
- B. DUCTS, PLENUMS, AND CASINGS MUST BE CLEANED OF ALL DEBRIS AND BLOWN FREE OF ALL PARTICLES OF RUBBISH AND DUST BEFORE INSTALLING OUTLET FACES.
- C. BEARINGS MUST BE LUBRICATED AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
- D. TEMPORARY FILTERS MUST BE PROVIDED FOR FANS THAT ARE USED DURING CONSTRUCTION. AT THE TIME OF STARTING THE TEST AND BALANCE PROCEDURES OF THE AIR DISTRIBUTION SYSTEM, NEW FILTERS MUST BE INSTALLED.

23 00 00 - HVAC GENERAL - CONTINUED

TESTING PIPE AND DUCT SYSTEMS:

- A. GENERAL: CONCEALED PIPING AND DUCTWORK MUST BE TESTED IN PLACE BEFORE CONCEALING. INSULATED PIPING AND DUCTWORK MUST BE TESTED IN PLACE BEFORE COVERING. SUCH TESTS MUST BE CONDUCTED IN THE PRESENCE OF THE ARCHITECT OR THE COMPANY'S DESIGNATED REPRESENTATIVE.
- B. EQUIPMENT, MATERIALS, AND INSTRUMENTS FOR TESTING MUST BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER. EQUIPMENT NOT RATED FOR THE RESPECTIVE TEST PRESSURE MUST BE ISOLATED FROM THE SYSTEM DURING THE TEST.
- C. AIR DISTRIBUTION SYSTEMS:
  - 1. DUCT WORK CLASSIFIED AND CONSTRUCTED AS PRESSURE CLASS 3" W.G. AND ABOVE MUST BE TESTED FOR LEAKAGE (MAX. LEAKAGE IS 1% UNLESS NOTED OTHERWISE). LEAKAGE TEST MUST BE AS OUTLINED IN AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE. PRESSURE CLASS AND TEST PRESSURE MUST BE POSITIVE (+) ON FAN SYSTEM DISCHARGE SIDE AND NEGATIVE (-) ON FAN SYSTEM SUCTION SIDE.
  - 2. OTHER DUCTWORK MUST BE MADE AIRTIGHT PRIOR TO COVERING OR CONCEALING TO THE POINT THAT NO LEAKAGE CAN BE DETECTED BY AUDIBLE SENSES (I.E., HEARING) OR PRESSURE SENSES (I.E., FEELING) AT ALL DUCT JOINTS AND SEAMS.

23 05 93 - TEST AND BALANCE

EQUIPMENT:

- A. INSTRUMENTS USED FOR BALANCING MUST HAVE BEEN CALIBRATED WITHIN 6 MONTHS PRIOR TO THE BALANCING OF THE SYSTEMS.
- B. ALL INSTRUMENTS REQUIRED TO BALANCE THE SYSTEM MUST BE PROVIDED AT THE CONTRACTOR'S EXPENSE.

GENERAL BALANCING:

- A. AIR
  - 1. ADJUST AND BALANCE AIR SYSTEMS INDICATED HEREINBEFORE TO OBTAIN DESIGN FLOW RATES FOR SYSTEMS AS A WHOLE, IN ADDITION TO EACH INLET AND OUTLET. USE BALANCING DAMPERS AND/OR FLOW SETTING DEVICES FOR INLET, OUTLET, AND BRANCH ADJUSTMENTS. USE FAN SPEED ADJUSTMENT FOR BELT DRIVE FANS.
  - 2. PITOT TUBE TRAVERSES MUST BE PERFORMED IN ACCORDANCE WITH ASHRAE FUNDAMENTALS HANDBOOK.

REPORT:

- 1. THE REPORT OF PERFORMANCE TESTING AND BALANCING MUST INCLUDE DATA LISTED BELOW:
  - 1. NAME AND ADDRESS OF PROJECT, NAME AND ADDRESS OF CONTRACTOR, DATES OF ALL TESTS, NAME AND TELEPHONE NUMBER OF THE TEST ENGINEER.
  - 2. GRILLES, REGISTERS AND DIFFUSERS:
    - a. FAN SYSTEM AND/OR ZONE NUMBER
    - b. ROOM NUMBER
    - c. SIZE OF INLET OR OUTLET
    - d. MANUFACTURER'S EFFECTIVE DATA
    - e. REQUIRED, INITIAL, AND FINAL FLOW AND VELOCITY
  - 3. COILS:
    - a. SYSTEM AND/OR EQUIPMENT NUMBER
    - b. MANUFACTURER AND TYPE
    - c. SCHEDULED DATA ON DRAWINGS OR IN SPECIFICATIONS
    - d. AIR FLOW AND ENTERING AND LEAVING AIR TEMPERATURE (DRY BULB AND WET BULB)
    - e. LOAD ( BTU/HR)
  - 4. VARIABLE AIR VOLUME BOXES:
    - a. BOX DESIGNATION AND LOCATION
    - b. SCHEDULED DATA ON DRAWINGS AND/OR IN SPECIFICATIONS
    - c. INITIAL AND FINAL AIR FLOW (MINIMUM AND MAXIMUM)
    - d. COIL DATA MUST BE AS INDICATED FOR COILS
    - e. WATER FLOW RATES (MINIMUM AND MAXIMUM)
  - 5. EXHAUST FAN
    - a. BOX DESIGNATION AND LOCATION
    - b. SCHEDULED DATA ON DRAWINGS AND/OR IN SPECIFICATIONS
    - c. INITIAL AND FINAL AIR FLOW (MINIMUM AND MAXIMUM)
- A. ANY DEVIATIONS FROM DESIGN DATA MUST BE EXPLAINED IN THE REPORT - POSSIBLE REASONS FOR AND SOLUTIONS TO.
- B. AIRFLOWS AND WATER FLOWS MUST BE PLUS OR MINUS 10 PERCENT TOLERANCE. HOWEVER, SPECIFIC PRESSURE RELATIONSHIPS HAVE PRIORITY OVER TOLERANCES.
- C. REPORT MUST BE SIGNED AND DATED BY BALANCE ENGINEER.
- D. TEST AND BALANCE MUST NOT TO BE PERFORMED UNTIL SYSTEM INSTALLATION IS COMPLETE.

23 37 13 - AIR DISTRIBUTION DEVICES

GENERAL:

- A. FINISH
    - 1. ALUMINUM GRILLES, REGISTERS, AND DIFFUSERS WHICH ARE CEILING MOUNTED MUST BE PROVIDED WITH A FACTORY-APPLIED WHITE BAKED ENAMEL FINISH UNLESS INDICATED OTHERWISE HEREIN OR ON THE DRAWINGS.
    - 2. ALUMINUM GRILLES AND REGISTERS WHICH ARE WALL OR FLOOR MOUNTED MUST BE FACTORY-ETCHED TO A SATIN FINISH AND COATED WITH A CLEAR LACQUER UNLESS INDICATED OTHERWISE HEREIN OR ON THE DRAWINGS.
  - B. MOUNTING
    - 1. MODEL NUMBERS INDICATED ON DRAWINGS ARE FOR SURFACE MOUNTING IN EXPOSED TEE-BAR GRIDS OR FOR INTEGRAL MOUNTING IN EXPOSED TEE-BAR GRIDS.
    - 2. WHERE GRILLES, REGISTERS, OR DIFFUSERS ARE TO BE INSTALLED IN CONCEALED SPINE CEILINGS OR PLASTER CEILINGS, THE MOUNTING FRAME MUST BE ADJUSTED TO MATCH THE CEILING REQUIREMENTS.
    - 3. IN PLASTER CEILINGS, PROVIDE PLASTER FRAMES.
  - C. TYPE 'A' CEILING DIFFUSERS MUST BE STEEL OR ALUMINUM WITH THREE CONE CORE.
    - 1. ALL CONES MUST BE ONE PIECE PRECISION DIE-STAMPED; THE BACK CONE MUST ALSO INCLUDE AN INTEGRALLY DRAWN INLET (WELDED-IN INLETS AND CORNER JOINTS ARE PROHIBITED).
    - 2. THE TWO INNER CONES MUST BE CONSTRUCTED AS A SINGLE, REMOVABLE INNER CONE ASSEMBLY FOR EASY INSTALLATION AND CLEANING. THE INNER CONE ASSEMBLY MUST HAVE A HOLE WITH REMOVABLE PLUG IN THE CENTER TO ALLOW ADJUSTMENT OF AN OPTIONAL INLET DAMPER WITHOUT REMOVING THE INNER CONE ASSEMBLY; PROVIDE WITH ROUND NECK OR ROUND NECK ADAPTER.
    - 3. FACE PANEL MUST FIT 24" X 24" LAY-IN TEE-BAR CEILING GRID.
    - 4. THROW PATTERN MUST BE AS INDICATED ON THE DRAWINGS.
  - D. TYPE 'B' CEILING GRILLES MUST BE EGGRATE TYPE.
    - 1. GRILLES MUST PROVIDE A FREE AREA OF AT LEAST 90%.
    - 2. OUTER BORDERS MUST BE CONSTRUCTED OF HEAVY EXTRUDED ALUMINUM WITH A THICKNESS OF 0.040-0.050" AND HAVE COUNTERSUNK SCREW HOLES. BORDER WIDTH MUST BE 1-1/4" ON ALL SIDES AND BE INTERLOCKED AT THE FOUR CORNERS AND MECHANICALLY STAKED TO FORM A RIGID FRAME.
    - 3. OPPOSED-BLADE VOLUME DAMPER MUST BE CONSTRUCTED OF HEAVY GAUGE STEEL OR ALUMINUM. DAMPER MUST BE OPERABLE FROM THE FACE OF THE GRILLE.
  - E. TYPE 'C' DIFFUSERS MUST BE LINEAR SLOT DIFFUSERS WITH SLOT WIDTH AS INDICATED IN THE AIR TERMINALS SCHEDULE.
    - 1. NUMBER OF SLOTS MUST BE AS INDICATED IN THE AIR TERMINALS SCHEDULE.
    - 2. LENGTH OF DIFFUSER MUST BE AS INDICATED IN THE AIR TERMINALS SCHEDULE.
    - 3. COORDINATE FRAME AND BORDER TYPE WITH CEILING INSTALLATION PER MANUFACTURER'S GUIDELINES.
    - 4. PROVIDE MANUFACTURER'S STANDARD END BORDER.
    - 5. PROVIDE MANUFACTURER'S STANDARD PLENUM CONNECTION.
- INSTALLATION:**
- A. GRILLES AND REGISTERS MOUNTED IN WALLS MUST BE SECURED TO DUCTWORK WITH SHEET METAL SCREWS.
  - B. GRILLES, REGISTERS, AND CEILING DIFFUSERS NOT SIZED TO FIT CEILING GRID SYSTEMS MUST BE SECURED TO DUCTWORK WITH SHEET METAL SCREWS. WHERE DIFFUSER IS ATTACHED TO DUCT SYSTEM WITH FLEXIBLE DUCT, DIFFUSERS MUST BE SUPPORTED FROM STRUCTURES WITH FOUR GALVANIZED STEEL WIRE HANGERS.
  - C. GRILLES, REGISTERS, AND CEILING DIFFUSERS SIZED TO FIT CEILING GRID SYSTEM MUST BE SUPPORTED FROM GRID SYSTEM.
  - D. COORDINATE LOCATION OF AIR DISTRIBUTION DEVICES WITH OTHER TRADES PRIOR TO SECURE ATTACHMENT.



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COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE  
ISSUED FOR CONSTRUCTION  
DESCRIPTION  
MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE  
MECHANICAL  
SPECIFICATIONS

SHEET NUMBER  
M-003

ORIGINAL SHEET SIZE:  
22" X 34"

D

C

B

A

1

2

3

4

5

23 36 00 - AIR TERMINALS UNITS

- GENERAL:**
- A. PERFORMANCE:
1. APPLICABLE REQUIREMENTS IN ASHRAE 62.1, SECTION 5 - "SYSTEMS AND EQUIPMENT," AND SECTION 7 - "CONSTRUCTION AND SYSTEM START-UP."
- B. BALANCING
1. FAN WHEELS MUST BE STATICALLY AND DYNAMICALLY BALANCED.
- C. DISCONNECTS
1. SAFETY DISCONNECT SWITCHES MUST CONFORM TO REQUIREMENTS OF ELECTRICAL.

MODULATING, SINGLE-DUCT AIR TERMINAL UNITS

- A. DESCRIPTION: VOLUME-DAMPER ASSEMBLY INSIDE UNIT CASING WITH CONTROL COMPONENTS INSIDE A PROTECTIVE METAL SHROUD.
- B. VOLUME DAMPER: GALVANIZED STEEL WITH PERIPHERAL GASKET AND SELF-LUBRICATING BEARINGS.
- C. CASING LINER, FIBROUS GLASS: FIBROUS-GLASS DUCT LINER, COMPLYING WITH ASTM C1071, NFPA 90A OR NFPA 90B, AND WITH NAIMA AH124.
- D. VELOCITY SENSORS: MULTIPOINT ARRAY WITH VELOCITY INLET SENSORS.
- E. UNITS MUST BE ONE OF THE FOLLOWING (OR APPROVED EQUAL):
1. ANEMOSTAT, INC.; MESTEK, INC.
2. CARNES COMPANY.
3. ENVIRO-TEC; BRAND OF JOHNSON CONTROLS INTERNATIONAL PLC.
4. METALAIRE, INC.
5. PRICE INDUSTRIES LIMITED.
6. TITUS; BRAND OF JOHNSON CONTROLS INTERNATIONAL .
7. TUTTLE & BAILEY; BRAND OF JOHNSON CONTROLS INTERNATIONAL PLC.

- HYDRONIC HEATING COILS:**
- A. COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINs. INCLUDE MANUAL AIR VENT AND DRAIN VALVE.

- ATTENUATOR SECTION:**
- A. CASING MATERIAL AND THICKNESS MATCHING ASSOCIATED AIR TERMINAL UNIT CASING. PROVIDE ABSORPTIVE ATTENUATOR INTEGRAL WITH THE DISCHARGE OUTLET OF THE AIR TERMINAL UNIT, OF MAXIMUM NOISE LEVEL AS REQUIRED IN SCHEDULES ON DRAWINGS.

- CONTROLS:**
- A. ELECTRONIC DAMPER ACTUATOR: 24 V, SPRING-RETURN OPEN.
1. OCCUPIED AND UNOCCUPIED OPERATING MODE.
2. REMOTE RESET OF AIRFLOW OR TEMPERATURE SETPOINTS.
- B. ELECTRONIC THERMOSTAT: WALL-MOUNTED ELECTRONIC TYPE WITH TEMPERATURE SETPOINT LCD DISPLAY IN FAHRENHEIT.
- C. ELECTRONIC AIR VOLUME CONTROLLER: PRESSURE-INDEPENDENT ANALOG ELECTRONIC CONTROLLER, FACTORY CALIBRATED AND FIELD ADJUSTABLE TO MINIMUM AND MAXIMUM AIR VOLUMES. PROVIDES CONSISTENT AIRFLOW TO THE SPACE IN RESPONSE TO ELECTRONIC THERMOSTAT SIGNAL WHILE COMPENSATING FOR INLET STATIC PRESSURE VARIATIONS OF UP TO 4 INCHES WG; INCLUDES A MULTIPOINT VELOCITY SENSOR AT AIR INLET.

- INSTALLATION:**
- A. INSTALL AIR TERMINAL UNITS ACCORDING TO NFPA 90A.
- B. INSTALL AIR TERMINAL UNITS LEVEL AND PLUMB. MAINTAIN SUFFICIENT CLEARANCE FOR NORMAL SERVICE AND MAINTENANCE.
- C. WHERE INSTALLING PIPING ADJACENT TO AIR TERMINAL UNIT, ALLOW SPACE FOR SERVICE AND MAINTENANCE.

23 31 13 - METAL DUCTS AND ACCESSORIES

- GENERAL:**
- A. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESSES, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS, AND HANGERS AND SUPPORTS, MUST COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" AND WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED HEREINAFTER COMPLY WITH REQUIREMENTS IN ASHRAE/IES 90.1, SECTION 6.4.4 - "HVAC SYSTEM CONSTRUCTION AND INSULATION."
1. CONSTRUCT DUCTS OF GALVANIZED SHEET STEEL UNLESS NOTED OTHERWISE.
2. ELBOWS, TRANSITIONS, OFFSETS, BRANCH CONNECTIONS, AND OTHER DUCT CONSTRUCTION: SELECT TYPES AND FABRICATE IN ACCORDANCE WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," CH. 4, "FITTINGS AND OTHER CONSTRUCTION"
- B. DUCT LINER MUST COMPLY WITH ASTM C1071, NFPA 90A, OR NFPA 90B; AND WITH NAIMA AH124, "FIBROUS GLASS DUCT LINER STANDARD". ADHERE A SINGLE LAYER OF 1" THICK OF DUCT LINER WITH AT LEAST 90 PERCENT ADHESIVE COVERAGE AT LINER CONTACT SURFACE AREA.
- C. SEALANT AND GASKET REQUIREMENTS: SURFACE-BURNING CHARACTERISTICS FOR SEALANTS AND GASKETS MUST BE A MAXIMUM FLAME-SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED IN ACCORDANCE WITH UL 723; CERTIFIED BY AN NRTL.

- HANGERS AND SUPPORTS:**
- A. GALVANIZED-STEEL RODS AND NUTS.
- B. STRAP AND ROD SIZES: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," TABLE 5-1 (TABLE 5-1M), "RECTANGULAR DUCT HANGERS MINIMUM SIZE," AND TABLE 5-2, "MINIMUM HANGER SIZES FOR ROUND DUCT."

- DUCT CONSTRUCTION/INSTALLATION:**
- A. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DUCT SYSTEM. INDICATED DUCT LOCATIONS, CONFIGURATIONS, AND ARRANGEMENTS WERE USED TO SIZE DUCTS AND CALCULATE FRICTION LOSS FOR AIR-HANDLING EQUIPMENT SIZING AND FOR OTHER DESIGN CONSIDERATIONS. INSTALL DUCT SYSTEMS AS INDICATED UNLESS DEVIATIONS TO LAYOUT ARE APPROVED ON SHOP DRAWINGS AND COORDINATION DRAWINGS.
- B. INSTALL FACTORY- OR SHOP-FABRICATED FITTINGS FOR CHANGES IN DIRECTION, SIZE, AND SHAPE AND FOR BRANCH CONNECTIONS.
- C. WHERE DUCTS PASS THROUGH NON-FIRE-RATED INTERIOR PARTITIONS AND EXTERIOR WALLS AND ARE EXPOSED TO VIEW, COVER THE OPENING BETWEEN THE PARTITION AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME METAL THICKNESS AS THE DUCT. OVERLAP OPENINGS ON FOUR SIDES BY AT LEAST 1-1/2 INCHES (38 MM).
- D. ELBOWS: USE LONG-RADIUS ELBOWS WHEREVER THEY FIT. OTHERWISE, FABRICATE 90-DEGREE RECTANGULAR MITERED ELBOWS WITH TURNING VANES.
- E. BRANCH CONNECTIONS: USE LATERAL OR CONICAL BRANCH CONNECTIONS.
- F. FLEXIBLE DUCTS MUST BE UL 181, CLASS 1, TWO-PLY VINYL FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION; POLYETHYLENE VAPOR-BARRIER FILM.
- G. FABRICATE ALL DUCTS TO ACHIEVE SMACNA PRESSURE CLASS, SEAL CLASS, AND LEAKAGE CLASS OF 150% OF THE SCHEDULED FAN EXTERNAL STATIC PRESSURE OR AS INDICATED BELOW, WHICHEVER IS GREATER:
1. SUPPLY DUCTS CONNECTED TO FAN COIL UNITS, CONSTANT VOLUME AIR HANDLERS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS: PRESSURE CLASS: POSITIVE 2 INCH WG, SEAL CLASS: A.
2. SUPPLY DUCTS CONNECTED TO VARIABLE-AIR-VOLUME AIR-HANDLING UNITS: PRESSURE CLASS: POSITIVE 4 INCH WG, SEAL CLASS: A.
3. RETURN AND EXHAUST DUCTS: PRESSURE CLASS NEGATIVE 2-INCH WG, SEAL CLASS: B

- HANGER AND SUPPORT INSTALLATION:**
- A. COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," CHAPTER 5, "HANGERS AND SUPPORTS."
- B. BUILDING ATTACHMENTS: CONCRETE INSERTS, POWDER-ACTUATED FASTENERS, OR STRUCTURAL-STEEL FASTENERS APPROPRIATE FOR CONSTRUCTION MATERIALS TO WHICH HANGERS ARE BEING ATTACHED.
- C. HANGER SPACING: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," TABLE 5-1 (TABLE 5-1M), "RECTANGULAR DUCT HANGERS MINIMUM SIZE," AND TABLE 5-2, "MINIMUM HANGER SIZES FOR ROUND DUCT," FOR MAXIMUM HANGER SPACING; INSTALL HANGERS AND SUPPORTS WITHIN 24 INCHES (610 MM) OF EACH ELBOW AND WITHIN 48 INCHES (1220 MM) OF EACH BRANCH INTERSECTION.

23 31 13 - METAL DUCTS AND ACCESSORIES - CONTINUED

- FIELD QUALITY CONTROL:**
- A. COMPLY WITH SMACNA'S "HVAC AIR DUCT LEAKAGE TEST MANUAL".

- MANUAL DAMPERS:**
- A. DAMPERS MUST BE SINGLE BLADE BUTTERFLY TYPE IN DUCTS UP TO AND INCLUDING 18" X 12". FOR DUCTS LARGER THAN 18" X 12", IN EITHER OR BOTH DIMENSIONS, DAMPERS MUST BE MULTI-LOUVER TYPE.
- B. SINGLE BLADE BUTTERFLY DAMPERS MUST BE CONSTRUCTED OF NOT LESS THAN 16 GAUGE GALVANIZED STEEL BLADE MOUNTED IN A GALVANIZED STEEL FRAME. DAMPER MUST BE PROVIDED WITH AN EXTENDED ROD TO PERMIT INSTALLATION OF A DAMPER REGULATOR.
- C. MULTI-LOUVER DAMPERS MUST BE OPPOSED BLADE TYPE, CONSTRUCTED OF NOT LESS THAN 16-GAUGE GALVANIZED STEEL BLADE MOUNTED IN GALVANIZED STEEL CHANNEL FRAME. BLADE SPACING MUST NOT EXCEED 6-INCHES AND THE TOP AND BOTTOM EDGES OF THE BLADES MUST BE CRIMPED TO STIFFEN THE BLADES. DAMPER BLADES MUST BE INTERCONNECTED BY RODS AND LINKAGES TO PROVIDE SIMULTANEOUS OPERATION OF ALL BLADES. DAMPER MUST BE PROVIDED WITH AN EXTENDED ROD TO PERMIT INSTALLATION OF A DAMPER REGULATOR.
- D. REMOTE DAMPER OPERATORS:
1. PROVIDE A WORM GEAR DAMPER DRIVE UNIT TO MANUALLY CONTROL DAMPER FROM A REMOTE LOCATION. THE DAMPER DRIVE MUST BE FURNISHED AS ONE-PIECE CONSTRUCTION WITH UNIVERSAL MOUNTING CAPABILITIES TO ACCOMMODATE DAMPER SHAFT SIZES FROM 1/4"-3/8" SQUARE, OR 1/4"-1/2" ROUND.
2. THE DRIVE UNIT CONSTRUCTION MUST CONSIST OF A 14 GAUGE GALVANNEALED MOUNTING BRACKET, AN ALUMINUM WORM AND WORM GEAR, AND A ONE PIECE STEEL DRIVE SHAFT/CABLE COUPLING. THE DRIVE SHAFT/COUPLING MUST PROVIDE ACCESS AND SUPPORT FOR A 1/4"Ø PLATED STEEL ROTARY ACTUATION CABLE. THE ROTARY CABLE MUST BE OPERATED WITH A STANDARD HEX NUT DRIVER.
3. THE ROTARY ACTUATION CABLE MUST BE TERMINATED WITH A CEILING CUP, AN ANGLE BRACKET, OR A RETAINING CLIP (WHEN USED INSIDE THE PLENUM)

- DUCT AND PLENUM ACCESS DOORS:**
- A. DUCT ACCESS DOORS MUST BE MINIMUM 18" X 18". FOR ACCESS DOORS IN DUCT PRESSURE CLASS 2", DOORS MUST BE DOUBLE WALL CONSTRUCTION OF NOT LESS THAN 24-GAUGE GALVANIZED STEEL SHEET, WITH 1-INCH THICK NEOPRENE COATED FIBERGLASS INSULATION BETWEEN THE WALLS. DOORS MUST HAVE A CONTINUOUS HINGE ON ONE SIDE AND SAME LATCH WITH STRIKER PLATE ON THE OTHER SIDE; DOORS WITH THE HEIGHT OVER 12-INCHES TO HAVE NO LESS THAN 2 CAM LATCHES WITH STRIKER PLATES.
- B. DOOR FRAME MUST BE CONSTRUCTED OF NOT LESS THAN 22 GUAGE GALVANIZED STEEL AND HAVE KNOCK-OVER EDGES FOR SECURING TO DUCT.
- C. THE DOOR ASSEMBLY MUST BE DOUBLE GASKETED TO PROVIDE SEALS FROM THE DOOR TO THE FRAME AND FROM THE FRAME TO THE DUCT.
- D. ACCESS DOORS IN DUCT PRESSURE CLASSES 3" AND ABOVE MUST BE THE COMBINATION ACCESS/VACUUM RELIEF TYPE DESIGNED FOR HIGH PRESSURE SERVICE.

23 07 13 - MECHANICAL DUCT INSULATION

- FIBERGLASS BLANKET INSULATION FOR DUCTWORK:**
- A. BLANKET TYPE FIBERGLASS INSULATION WITH AVERAGE THERMAL CONDUCTIVITY NOT EXCEEDING .29 BTU-IN. PER SQUARE FEET PER °F PER HOUR AT MEAN TEMPERATURE OF 75°F.
1. MINIMUM DENSITY 1 LB./CU. FT, 2-INCH THICK MINIMUM.
2. ACCEPTABLE PRODUCTS: MANVILLE MICROLITE FSK FACED WRAP 1 LB./ 3 FT. OWENS-CORNING FIBERGLASS FACED DUCT WRAP COMMERCIAL GRADE. CERTAINTED STANDARD DUCT WRAP KNAUF DUCT WRAP
- B. FIRE RETARDATION ADHESIVE MUST BE FOSTER 85-20, VIMASCO 733, OR CHILDERS CP-82.
- C. WHITE VAPOR BARRIER MUST BE FOSTER 30-35, VIMASCO 740, CHILDERS CP-30, OR EPOLUX CADALER 650.
- D. FOIL REINFORCED KRAFT TAPE. (3-INCH WIDE) MUST BE ARNO C-430, EASSON 0822, OR NASHUA FSK.

INSTALLATION

- GENERAL:**
- A. DO NOT USE STAPLES FOR SECURING ANY INSULATION.
- B. APPLY INSULATION ONLY ON CLEAN, DRY SURFACES.
- C. CONTINUE INSULATION THROUGH WALL AND CEILING OPENINGS AND SLEEVES, EXCEPT TERMINATE DUCT INSULATION AT FIRE DAMPERS AND AT FLEXIBLE DUCT CONNECTIONS AT AIR HANDLING UNITS.
- D. PROVIDE CONTINUOUS UNBROKEN VAPOR SEAL INSULATION ON ALL COLD SURFACES WHERE VAPOR JACKETS ARE SEALED.
- E. INSULATE AND VAPOR SEAL SUPPORTS THAT ARE SECURED TO COLD SURFACES TO PREVENT CONDENSATION.

- FIBERGLASS BLANKET INSULATION FOR DUCTWORK:**
- A. INSULATE THE FOLLOWING:
1. ALL GALVANIZED STEEL DUCTWORK WHICH IS NOT LOCATED IN MECHANICAL ROOMS OR INTERNALLY LINED.
2. THE PORTION OF CEILING DIFFUSERS WHICH ARE EXPOSED ABOVE CEILINGS.
- B. WRAP INSULATION AROUND DUCTS. BUTT ALL CIRCUMFERENTIAL JOINTS. OVERLAP LONGITUDINAL JOINTS 2-INCH MINIMUM. SECURE INSULATION WITH 18-GAUGE SOFT ANNEALED WIRE SPIRALLY WRAPPED AT 12-INCH ON CENTER (O.C.) WELD TO DUCT.
- C. FOR DUCTS OVER 24-INCH WIDE, IN ADDITION TO ADHESIVE, IMPALE INSULATION ON THE BOTTOM OF DUCTS ON METAL PINS MAXIMUM 18-INCH O.C. WELD TO DUCT. SECURE INSULATION ON PINS WITH SPEED WASHERS AND SEAL WITH BARRIER COATING.
- D. SEAL CIRCUMFERENTIAL JOINTS AT FIRE DAMPERS, FLEXIBLE CONNECTIONS, AND ENDS OF DUCTS WITH 3-INCH WIDE FOIL REINFORCED KRAFT TAPE.
- E. TAPE LONGITUDINAL JOINTS WITH 3-INCH WIDE FOIL REINFORCED KRAFT TAPE.
- F. SEAL PENETRATIONS AND PUNCTURES WITH 3-INCH WIDE FOIL REINFORCED KRAFT TAPE AND APPLY VAPOR BARRIER COATING.
- G. WRAP PORTIONS OF CEILING DIFFUSERS DESCRIBED ABOVE WITH INSULATION. OVERLAP ENDS OF INSULATION 2-INCH MINIMUM.



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COA NAME: POND & COMPANY  
COA NUMBER: PEF008002  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE  
ISSUED FOR CONSTRUCTION  
DESCRIPTION  
MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE  
MECHANICAL  
SPECIFICATIONS

SHEET NUMBER  
M-004

ORIGINAL SHEET SIZE:  
22" X 34"

12/3/2025 7:20:18 PM Autodesk Docs://1230561 CAT ITC Board Room/1230561\_CAT ITC\_MEPP\_v23.rvt

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23 21 13.01 - HYDRONIC VALVES

GENERAL:

- A. ALL VALVES REQUIRING PACKING MUST BE SIGNED AND CONSTRUCTED TO ALLOW REPACKING UNDER PRESSURE.
- B. VALVE DISCS MUST BE THE MANUFACTURER'S STANDARD MATERIAL FOR THE SERVICE IN WHICH THE VALVE IS USED UNLESS OTHERWISE INDICATED UNDER THE INDIVIDUAL TYPE VALUE SPECIFICATIONS.
- C. ALL VALVE HANDWHEELS MUST BE MALLEABLE IRON UNLESS INDICATED OTHERWISE UNDER THE INDIVIDUAL TYPE VALVE SPECIFICATIONS.

HOT WATER SYSTEMS:

- A. GATE VALVES
  - 1. VALVES MUST BE RISING SYSTEM TYPE.
  - 2. VALVES 2" AND SMALLER MUST BE BRONZE WITH SCREWED BONNET INSIDE SCREW, SOLID WEDGE DISC. AND SCREWED END CONNECTION. VALVES MUST BE RATED FOR 125 PSIG (MINIMUM).
  - 3. VALVES 2-1/2" AND LARGER MUST BE IRON BODY WITH BOLTED BONNET, OUTSIDE SCREW AND YOKE, BRONZE TRIM, WEDGE DISC. AND FLANGED END CONNECTIONS. VALVES MUST BE RATED FOR 125 PSIG (MINIMUM).
- B. CHECK VALVES
  - 1. SWING CHECK VALVES
    - a. 2" AND SMALLER MUST BE ALL BRONZE, HORIZONTAL SWING CHECK TYPE WITH SCREWED END CONNECTIONS. VALVES MUST BE RATED FOR 125 PSIG (MINIMUM).
- C. BALL VALVES
  - 1. VALVES MUST BE 600 PSIG, 2 PIECE, QUARTER TURN TYPE. BODY MUST BE ASTM B584 BRONZE WITH THREADED ENDS, CONVENTIONAL PORT, CHROME PLATED BRASS BALL, REPLACEABLE TEFLON SEATS, BRASS PACKING GLAND, STEEL LEVER HANDLE, AND VINYL HANDLE COVER.
- D. GLOBE VALVES
  - 1. VALVES MUST BE CLASS 125 RISING STEM TYPE CONFORMING TO MSS SP-80. BODY AND BONNET MUST BE ASTM B62 CAST BRONZE WITH THREADED ENDS, INSIDE SCREW BONNET, BRONZE STEM, BRONZE DISC, BRASS PACKING GLAND, TEFLON IMPREGNATED PACKING, AND MALLEABLE IRON HAND WHEEL.
- E. METERING TYPE BALANCING VALVES
  - 1. VALVES MUST BE SIGNED FOR COMBINATION BALANCING AND SHUT-OFF SERVICE AND RATED FOR 175 PSIG. VALVES MUST BE BALL OR PLUG TYPE WITH PROVISIONS FOR CONNECTIONS TO A PORTABLE DIFFERENTIAL PRESSURE METER. VALVES MUST BE BRONZE BODY WITH THREADED END CONNECTIONS AND BE EQUIPPED WITH A CALIBRATED NAMEPLATE AND INDICATING POINTER. METER CONNECTIONS MUST HAVE SHUT-OFF VALVES. ACCURACY TO BE EQUAL TO OR BETTER THAN 2%.
  - 2. PROVIDE A PORTABLE READOUT METER DESIGNED SPECIFICALLY FOR SERVICE WITH THE VALVES SUPPLIED. METER KIT MUST BE COMPLETE WITH DIFFERENTIAL METER, 2-10 FEET HOSES (2 COLORS), SHUT-OFF AND VENT VALVES, AND CARRYING CASE.

ACTUATORS:

- A. TYPE: MOTOR-OPERATED, ELECTRIC AND ELECTRONIC.
  - 1. CAPABLE OF CLOSING AGAINST 1.25 TIMES THE SYSTEM PUMP SHUTOFF HEAD.
  - 2. DELIVER TORQUE REQUIRED FOR CONTINUOUS UNIFORM MOVEMENT OF CONTROLLED DEVICE FROM LIMIT TO LIMIT WHEN OPERATED AT RATED VOLTAGE.
  - 3. FUNCTION PROPERLY WITHIN ± 20% OF NAMEPLATE VOLTAGE.
- B. CONSTRUCTION:
  - 1. ACTUATORS LESS THAN 100 W: FIBER OR REINFORCED NYLON GEARS WITH STEEL SHAFT, COPPER ALLOY OR NYLON BEARINGS, AND PRESSED STEEL ENCLOSURES.
  - 2. ACTUATORS FROM 100-400 W: GEARS GROUND STEEL, OIL IMMERSDED, SHAFT HARDENED STEEL RUNNING IN BRONZE, COPPER ALLOW, OR BALL BEARINGS. OPERATE AND GEAR TRAINS MUST BE TOTALLY-ENCLOSED IN DUST-PROOF CAST-IRON, CAST-STEEL, OR CAST-ALUMINUM HOUSING.
  - 3. ACTUATORS GREATER THAN 400 W: TOTALLY ENCLOSED REVERSIBLE INDUCTION MOTORS WITH AUXILIARY HAND CRANK AND PERMANENTLY LUBRICATED BEARINGS.
- C. ENCLOSURE: SUITABLE FOR AMBIENT CONDITIONS ENCOUNTERED BY APPLICATION.
- D. ATTACHMENT: UNLESS OTHERWISE REQUIRED, ACTUATOR MUST BE DESIGNED TO BE DIRECTLY COUPLED TO VALVE SHAFT WITHOUT THE NEED FOR CONNECTING LINKAGES. ENSURE MAXIMUM TRANSFER OF POWER AND TORQUE WITHOUT SLIPPAGE.
- E. TWO-POSITION: SINGLE DIRECTION, SPRING RETURN OR REVERSING TYPE.
- F. MODULATING:
  - 1. OPERATION: CAPABLE OF STOPPING AT ALL POINTS ACROSS FULL RANGE, AND STARTING IN EITHER DIRECTION FROM ANY POINT IN RANGE.
  - 2. CONTROL INPUT SIGNAL: [THREE POINT, TRISTATE, OR FLOATING POINT][PROPORTIONAL][PULSE WIDTH MODULATION (PWM)][PROGRAMMABLE MULTI-FUNCTION]
- G. POSITION FEEDBACK: PROVIDE CURRENT OR VOLTAGE SIGNAL FOR REMOTE MONITORING.
- H. FAIL-SAFE: PROVIDE ACTUATOR TO FAIL TO AN END POSITION (UNLESS NOTED OTHERWISE). INTERNAL SPRING RETURN MECHANISM TO DRIVE CONTROLLED DEVICE ON LOSS OF POWER.

23 21 13.01 - HYDRONIC VALVES (CONTINUED)

I. STROKE TIME:

- 1. OPERATE VALVE FROM FULLY CLOSED TO FULLY OPEN WITHIN **60** SECONDS.
  - 2. OPERATE VALVE FROM FULLY OPEN TO FULLY CLOSED WITHIN **60** SECONDS.
  - 3. MOVE VALVE TO FAILED POSITION WITHIN **30** SECONDS.
- J. FIELD ADJUSTMENT:
- 1. SPRING RETURN: EASILY SWITCHABLE FROM FAIL OPEN TO FAIL CLOSED IN THE FIELD WITHOUT REPLACEMENT.
  - 2. GEAR TYPE: EXTERNAL MANUAL ADJUSTMENT MECHANISM TO ALLOW MANUAL POSITIONING WHEN THE ACTUATOR IS NOT POWERED.

INSTALLATION:

- A. INSTALL VALVES WHERE INDICATED ON THE DRAWINGS.
- B. ALL VALVES IN HORIZONTAL LINES MUST BE INSTALLED WITH THE SYSTEM HORIZONTAL OR ABOVE. VALVE HANDWHEELS MUST BE ORIENTED WHEN INSTALLED TO PROVIDE MAXIMUM ACCESSIBILITY FOR OPERATIONS.

23 07 19 - MECHANICAL PIPE INSULATION

FIBERGLASS PIPE INSULATION:

- A. ONE PIECE FIBERGLASS PIPE INSULATION WITH FACTORY-APPLIED ALUMINUM FOIL AND WHITE CRAFT PAPER FLAME RETARDATION VAPOR BARRIER JACKET.
  - 1. PROVIDE SELF-SEALING LONGITUDINAL JACKET LAPS AND BUTT STRIPS.
  - 2. AVERAGE THERMAL CONDUCTIVITY: 0.23 BTU/IN. PER SQUARE FOOT PER DEGREES F PER HOUR AT 75°F MEAN TEMPERATURE.
  - 3. ACCEPTABLE PRODUCTS: MANVILLE MICRO-LOK 650 AF-1 OWENS CORNING FIBERGLAS ASJ/SSL CERTAINTeed FIBERGLAS 500 DEGREE SNAP-ON ASJ/SSL KNAUF ASJ-SSL PIPE INSULATION
  - 4. INSULATION THICKNESS FOR HOT PIPE LINES MUST BE:

|                      |                |
|----------------------|----------------|
| INSULATION THICKNESS | HOT WATER SIZE |
| 1-1/2"               | ALL SIZES      |
- B. INSULATION CEMENT MUST BE KEENE SUPER 1900, FIBREX FBX SUPER BLEND, OR ROCKWOOD MANUFACTURING CO. DELTA-MAID ONE SPOT.
- C. GLASS REINFORCEMENT FABRIC: 10/10 OR 10/20 WHITE GLASS OR NYLON FABRIC.
- D. VAPOR BARRIER MUST BE FOSTER TITE FIT 30-35 OR CHILDERS CIL-PERM CP-300.
- E. BREATHER COATING MUST BE FOSTER SEAM FAS 30-36, VAMASCO 713, CHILDERS CHIL-SEAL CP50, OR EPOLUX CATALOG 336.
- F. SECURING WIRE: 20 GAUGE GALVANIZED STEEL WIRE.
- G. PVC FITTING COVER MUST BE MANVILLE ZESTON COVERS, FOSTER SPEEDLINE ONE COVERS, OR CERTAINTeed SNAP-FORM FITTING COVERS.

INSTALLATION

GENERAL:

- A. DO NOT USE STAPLES FOR SECURING ANY INSULATION.
- B. APPLY INSULATION ONLY ON CLEAN, DRY SURFACES.
- C. CONTINUE INSULATION THROUGH WALL AND CEILING OPENINGS AND SLEEVES, EXCEPT TERMINATE PIPE INSULATION AT FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS.
- D. PROVIDE CONTINUOUS UNBROKEN VAPOR SEAL INSULATION ON ALL COLD SURFACES WHERE VAPOR JACKETS ARE SEALED.
- E. INSULATE AND VAPOR SEAL SUPPORTS THAT ARE SECURED TO COLD SURFACES TO PREVENT CONDENSATION.
- F. DO NOT INSULATE UNIONS.
- G. FILL PIPE INSULATION PROTECTIVE SADDLES ON HOT PIPES WITH SAME INSULATION AS ADJOINING PIPE INSULATION.

FIBERGLASS PIPE INSULATION:

- A. APPLY INSULATION TO THE FOLLOWING:
  - 1. ALL HOT WATER PIPING.
- B. BUTT ALL JOINTS OF PIPE INSULATIONS TOGETHER AND SECURE JACKET LAPS. SEAL BUTT JOINTS WITH JOINTS STRIPS FURNISHED WITH INSULATION.
- C. INSULATE FITTINGS, VALVES, AND FLANGES OF ALL OTHER LINES WITH FIBROUS BLANKET INSULATION WRAPPED UNDER COMPRESSION OF MINIMUM OF 2:1 TO THICKNESS EQUAL TO ADJOINING PIPE INSULATION. COVER WITH PVC FITTING COVERS. ASSEMBLY MUST BE SECURED WITH STAINLESS STEEL TACKS PUSHED INTO THE THROAT JOINT.

FIELD APPLIED JACKETS:

- A. WHERE METAL JACKETS ARE INDICATED, INSTALL WITH 2-INCH OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. OVERLAP LONGITUDINAL SEAMS ARRANGED TO SHED WATER. SEAL END JOINTS WITH WEATHERPROOF SEALANT RECOMMENDED BY INSULATION MANUFACTURER. SECURE JACKET WITH STAINLESS STEEL BANDS 12-INCHES ON CENTER (O.C.) AND AT END JOINTS.

23 21 13 - PIPE AND FITTINGS

SERVICE  
HOT WATER

PIPE MATERIAL TYPE  
1.2 (PIPING 2-1/2" AND SMALLER MAY BE TYPE 2)

| TYPE | PIPE SIZE    | PIPE TYPE                              | PIPE SPEC | FITTING TYPE                             | FITTING SPEC |
|------|--------------|----------------------------------------|-----------|------------------------------------------|--------------|
| 1    | 2" & SMALLER | SCH 40 BLACK STEEL SCREWED END GRB ERW | ASTM A53  | CLASS 150, BLACK MALLEABLE IRON, SCREWED | ANSI B16.3   |
| 2    | ALL SIZES    | TYPE 'L' HARD DRAWN COPPER             | ASTM B88  | WROUGHT COPPER, SOLDER JOINT             | ANSI B16.22  |

FLANGES:

- A. FLANGES MUST BE FACED TRUE AND PROVIDED WITH 1/16" RING TYPE GASKET FORMING TO ANSI B16.21. FLANGES MUST HAVE RAISED OR FLAT FACE TO MATE WITH ADJACENT FLANGES OR VALVES, FITTINGS, AND EQUIPMENT.
  - 1. FLANGES IN THREADED PIPE LINES MUST BE 125 LBS. CAST IRON SCREWED FLANGES CONFORMING TO ANSI B16.1.
  - 2. FLANGES IN WELDED PIPE LINES MUST BE 150 LBS. STEEL SLIP-ON TYPE WELDING FLANGES WITH ANSI B16.5
  - 3. FLANGE BOLTS MUST BE CARBON STEEL, ALL-THREADED TYPE, AND NUTS MUST BE CARBON STEEL HEXAGON TYPE. STEEL FOR BOLTS AND NUTS MUST CONFORM TO ASTM A307. GRADE "A" FOR USE WITH STEEL FLANGES AND GRADE "B" FOR USE WITH CAST IRON FLANGES
- B. UNIONS IN STEEL PIPE MUST BE 150 LBS. MALLEABLE-IRON TYPE, SCREWED (FED. SPEC. WW-U-531E). UNIONS IN COPPER TUBING MUST BE WROUGHT OR CAST BRONZE, SOLDER END JOINTS (FED. SPEC. WW-U-516C).

PIPE JOINTS:

- A. SCREW JOINTS FOR STEEL PIPE: AFTER CUTTING AND BEFORE THREADING, PIPE MUST BE REAMED AND MUST HAVE BURRS REMOVED. SCREW JOINTS MUST BE MADE WITH TAPERED THREADS, GRAPHITE, AND OIL THAT IS APPLIED TO MALE THREADS ONLY. CAULKING OF THREADED JOINTS TO STOP OR PREVENT LEAKS IS PROHIBITED.
- B. WELDED JOINTS MUST BE FUSION-WELDED. CHANGES IN DIRECTION OF PIPING MUST BE MADE WITH WELDING FITTINGS ONLY. MITERING OR NOTCHING PIPE TO FORM ELBOWS AND TEES IS PROHIBITED.
  - 1. BRANCH TAKE-OFFS AT 90 DEGREES FROM MAINS MUST BE MADE WITH WELDING TEE FITTINGS, EXCEPT WHERE MAIN SIZE IS LARGER THAN 2 INCHES: FACTORY-FABRICATED FORGED STEEL SHAPED FITTINGS MAY BE USED IN LIEU OF WELDING TEES IF THE MAIN IS TWO PIPE SIZES OR MORE LARGER THAN BRANCH TAKEOFF; SHAPED FITTINGS MUST BE WELDOLETS FOR BRANCH SIZES 2-1/2" AND LARGER, AND THREADOLETS FOR BRANCH SIZES 2" AND SMALLER.
  - 2. BRANCH TAKE-OFFS AT 45 DEGREES TO MAINS MUST BE MADE WITH FACTORY-FABRICATED LATROLETS.
  - 3. DEFECTIVE WELDS MUST BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. REPAIRING OF DEFECTIVE WELDS BY ADDING NEW MATERIAL OVER THE DEFECTS OR BY PEENING IS PROHIBITED.
- C. JOINTS BETWEEN COPPER OR COPPER-ALLOY TUBING OR FITTINGS SHALL BE BRAZED, MECHANICAL OR SOLDERED JOINT.
  - 1. BRAZED: JOINT SURFACES SHALL BE CLEANED. AN APPROVED FLUX SHALL BE APPLIED WHERE REQUIRED. THE JOINT SHALL BE BRAZED WITH A FILLER METAL CONFORMING TO AWS A5.8.
  - 2. MECHANICAL JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
  - 3. SOLDER JOINTS SHALL BE MADE IN ACCORDANCE WITH ASTM B828. CUT TUBE ENDS SHALL BE REAMED TO THE FULL INSIDE DIAMETER OF THE TUBE END. A FLUX CONFORMING TO ASTM B813 SHALL BE APPLIED. THE JOINT SHALL BE SOLDERED WITH A SOLDER CONFORMING TO ASTM B32.

PIPE INSTALLATION:

- A. PIPES MUST HAVE BURRS REMOVED BY REAMING.
- B. CHANGES IN DIRECTION OF PIPING MUST BE MADE WITH FITTINGS.
- C. CHANGES IN PIPE SIZES IN HORIZONTAL PIPELINES MUST BE MADE WITH ECCENTRIC REDUCING COUPLINGS, EXCEPT REDUCING TEES AND REDUCING ELBOWS ARE PERMISSIBLE FOR CONNECTIONS FOR PRESSURE GAUGES AND GAUGE COCKS.
- D. ABOVE GROUND HORIZONTAL SUPPLY AND RETURN LINES MUST BE INSTALLED LEVEL, EXCEPT FOR SYSTEMS REQUIRING MINIMUM PITCH FOR PROPER SYSTEM OPERATION.
- E. OPEN ENDS OF PIPE LINES MUST BE PLUGGED DURING INSTALLATION TO KEEP DIRT AND FOREIGN MATERIAL OUT OF THE SYSTEM.
- F. BRANCH LINES FOR HOT WATER HEATING LINES MUST TAKE OFF BELOW CENTERLINE OF MAINS.



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COA  
COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

|                    |                                        |      |
|--------------------|----------------------------------------|------|
| 12/04/2025<br>DATE | ISSUED FOR CONSTRUCTION<br>DESCRIPTION | MARK |
|--------------------|----------------------------------------|------|

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
SPECIFICATIONS

SHEET NUMBER

M-005

ORIGINAL SHEET SIZE:  
22" X 34"

D

C

B

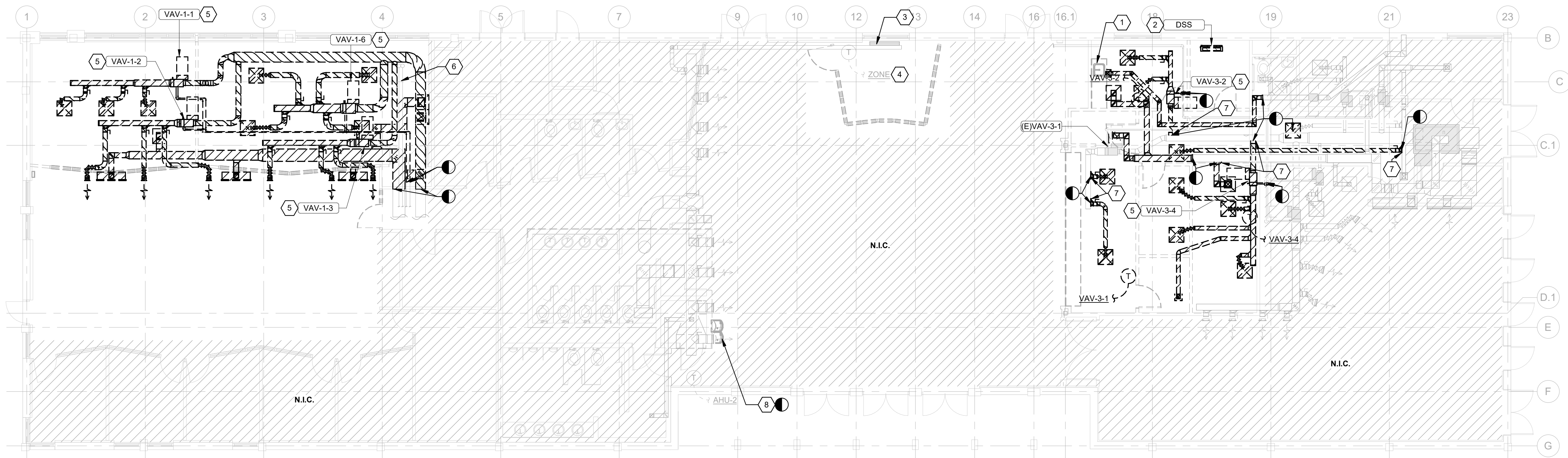
A

## SHEET NOTES

1. REFER TO M-000 SERIES DRAWINGS FOR MECHANICAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS, LEGENDS, AND SPECIFICATIONS.
2. CAP, SEAL, AND INSULATE TAKE-OFFS THAT ARE NOT REUSED. INSULATION MUST MATCH EXISTING.

## # KEYNOTES

1. DEMOLISH EXISTING BREAKROOM SINK, WATER HEATER, REFRIGERATOR WATER BOX, AND VENDING SINK. DEMOLISH CW PIPING BACK TO SHUT-OFF VALVE FROM EXISTING-TO-REMAIN 2" CW MAIN.
2. DEMOLISH EXISTING DUCTLESS SPLIT SYSTEM, OUTDOOR UNIT, REFRIGERANT PIPING, CONDENSATE PIPING, ELECTRICAL CONNECTION, CONTROLS, AND APPURTENANCES. SEAL AND INSULATE EXTERIOR ENVELOPE PENETRATIONS.
3. EXISTING SUPPLY AIR DUCT SERVING SECURITY AREA IS EXISTING TO REMAIN.
4. EXISTING THERMOSTAT OR TEMPERATURE SENSOR IS EXISTING TO REMAIN IN CURRENT LOCATION.
5. DEMOLISH EXISTING VAV BOXES, DUCTWORK, AIR TERMINALS, PIPING, CONTROLLERS, ELECTRICAL CONNECTIONS, AND APPURTENANCES.
6. EXISTING CHILLED WATER PIPING IS TO REMAIN.
7. CAP, SEAL, AND INSULATE TO MATCH EXISTING FOR TAKEOFFS NOT RE-USED.
8. REMOVE AND STORE DRINKING FOUNTAIN DURING CONSTRUCTION. DISCONNECT, CAP, AND SEAL PIPING.



A1

## MECHANICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'  
SCALE: 1/8" = 1'-0"**POND**3500 Parkway Lane  
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Peachtree Corners  
Georgia 30092

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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATEISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
DEMOLITION  
PLANS

SHEET NUMBER

MD101

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

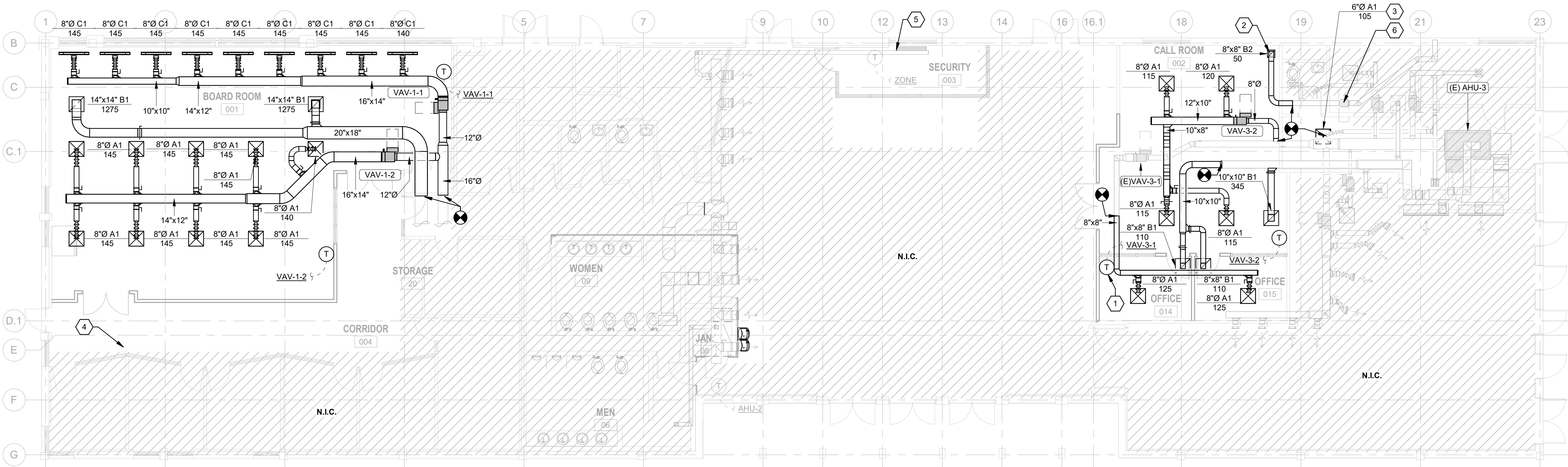
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**A1 MECHANICAL HVAC PLAN**  
SCALE: 1/8" = 1'-0"

**SHEET NOTES**

1. REFER TO M-000 SERIES DRAWINGS FOR MECHANICAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS, LEGENDS, AND SPECIFICATIONS.
2. REBALANCE EXISTING AHU-2 TO EXISTING CONDITIONS.
3. REBALANCE EXISTING AHU-1 TO NEW CONDITIONS.

**# KEYNOTES**

1. RELOCATE CONTROLLER FOR VAV-3-1. SEE MD101 FOR PREVIOUS LOCATION. REPAIR AND RECALIBRATE AS REQUIRED.
2. LOCATE EXHAUST GRILLE OVER NEW WALL-MOUNTED IT RACK.
3. ADJUST CFM TO THE VOLUME SHOWN ON THE FLOOR PLAN. RE-USE EXISTING DIFFUSER IF OPERATIONAL.
4. CONDITIONING IS PROVIDED TO THE CORRIDOR BY SYSTEM NOZZLE DIFFUSERS THAT ARE NOT SHOWN.
5. EXISTING SUPPLY AIR DUCT SERVING SECURITY AREA IS EXISTING TO REMAIN.
6. CLEAN AND RECALIBRATE EXISTING EXHAUST FAN.



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Peachtree Corners  
Georgia 30092

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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
HVAC PLAN

SHEET NUMBER

MH101

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

## SHEET NOTES

- REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
- REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

## # KEYNOTES

- EXISTING CHILLED WATER PIPING.
- REINSTALL EXISTING DRINKING FOUNTAIN TO ORGINAL LOCATION. RECONNECT EXISTING DOMESTIC SUPPLY AND SANITARY PIPING TO DRINKING FOUNTAIN.



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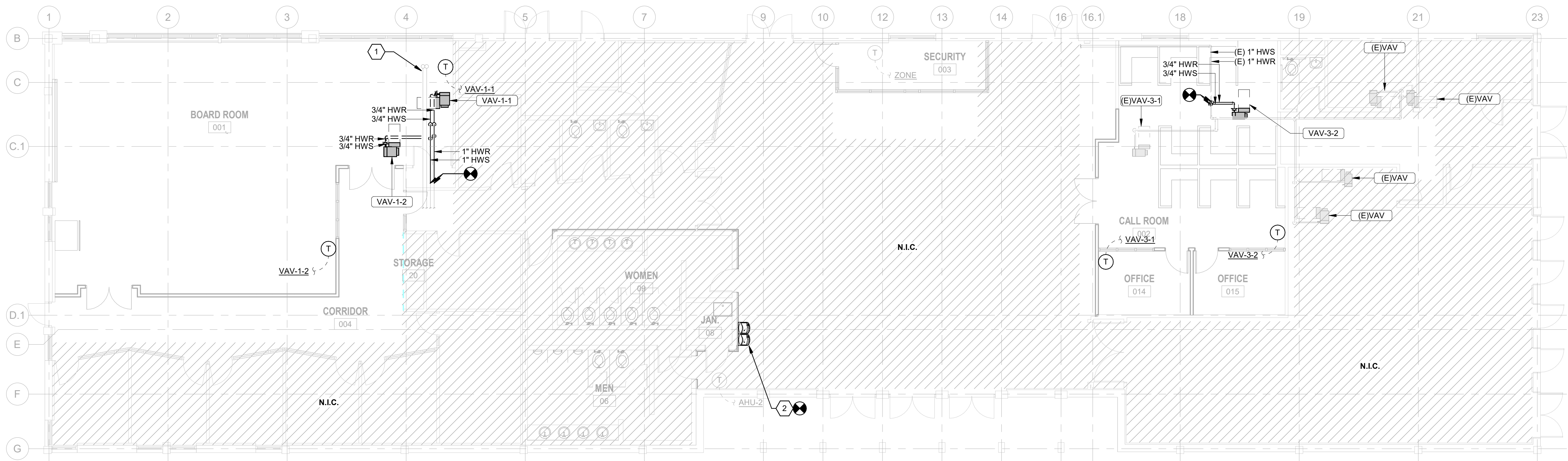
SHEET TITLE

MECHANICAL  
PIPING PLAN

SHEET NUMBER

MP101

ORIGINAL SHEET SIZE:  
22" X 34"



A1 MECHANICAL PIPING PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'  
SCALE: 1/8" = 1'-0"



100% SUBMITTAL - IFC

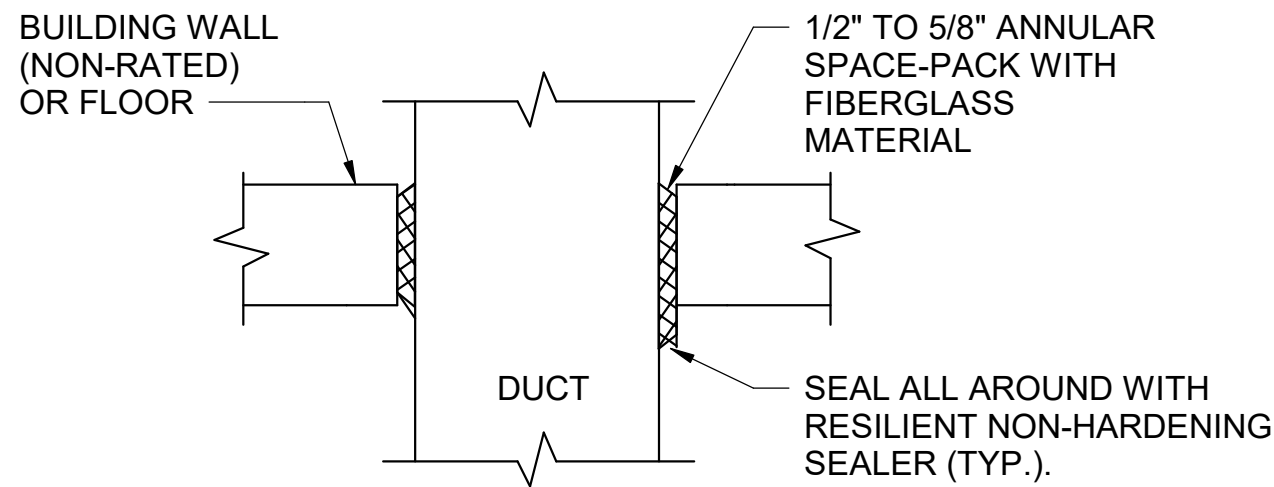
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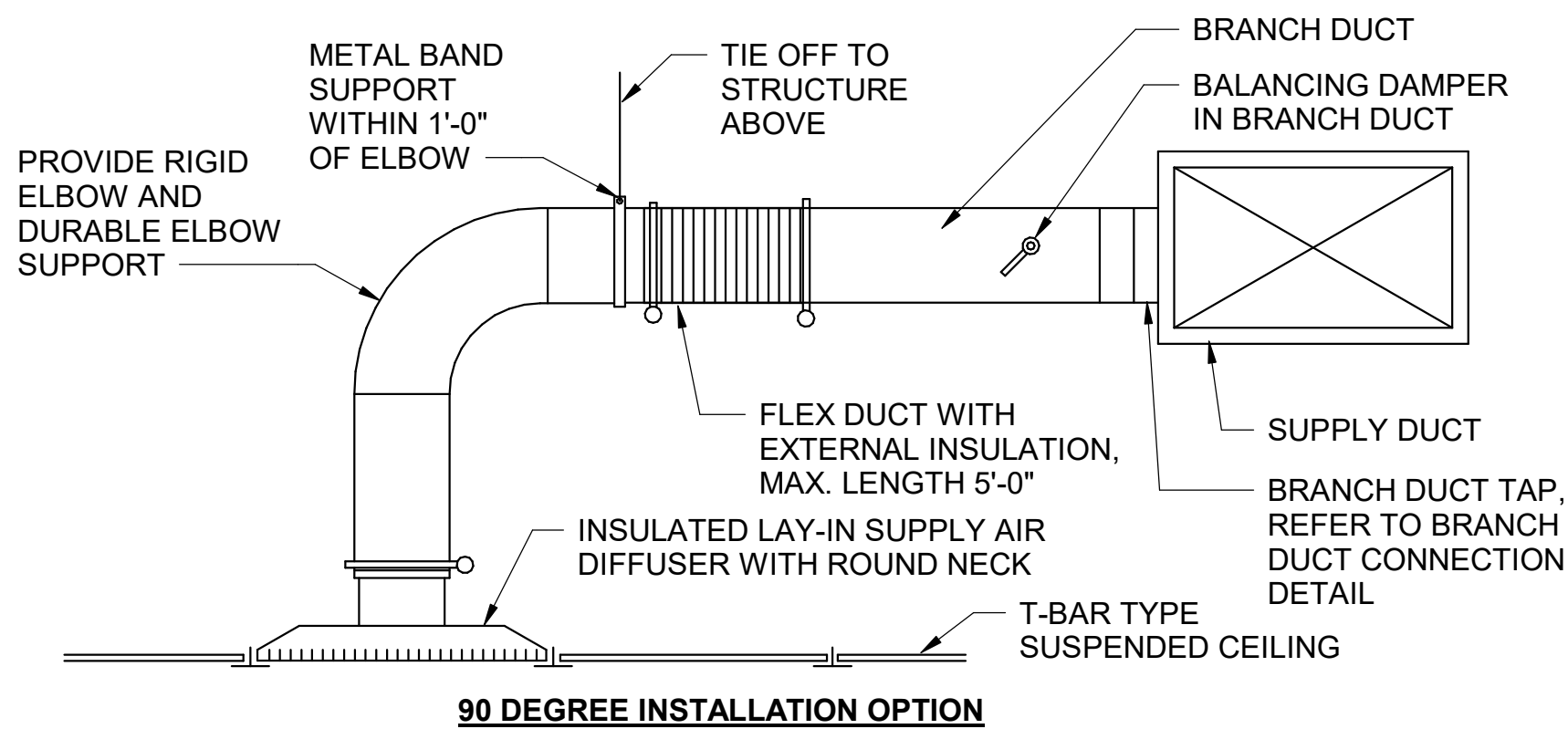
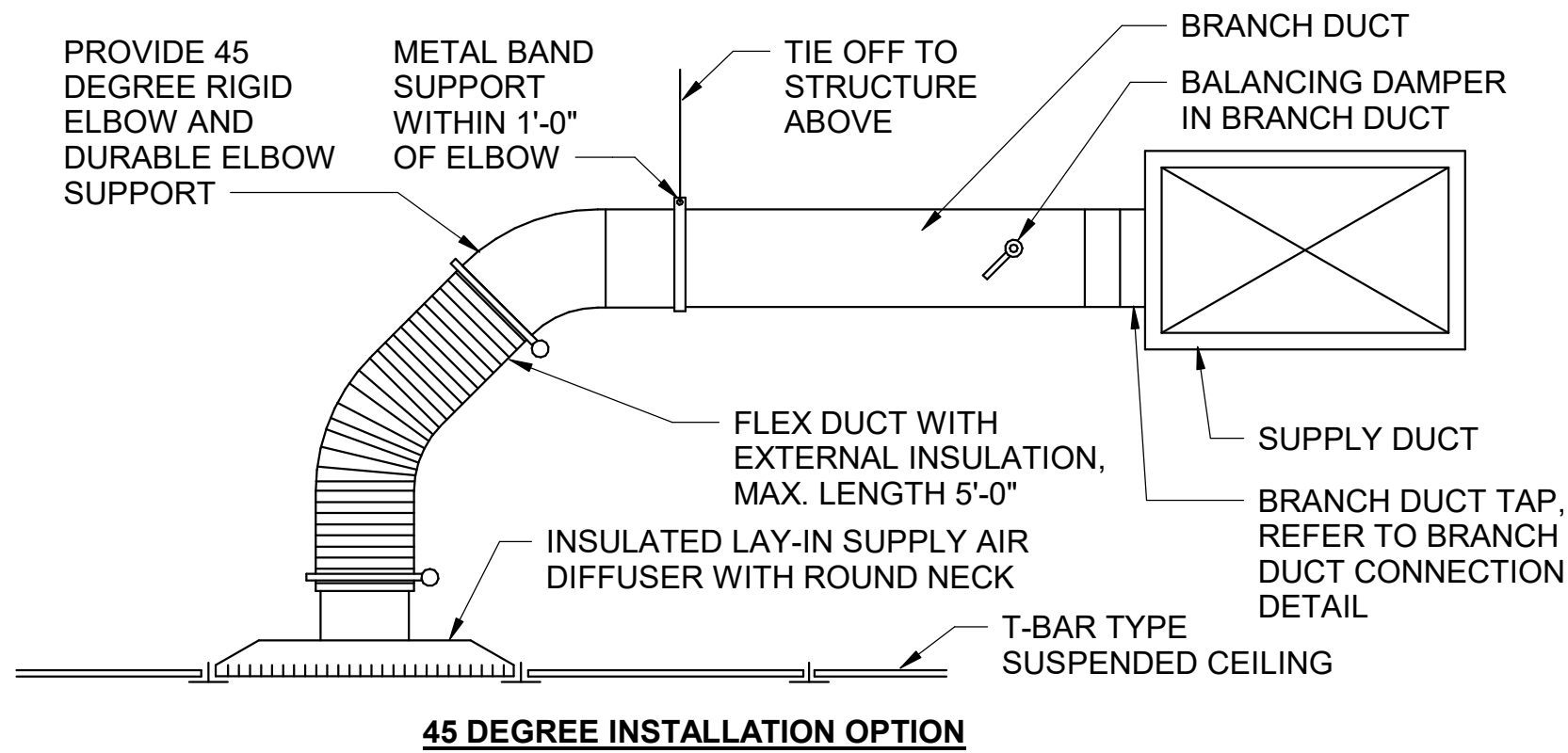
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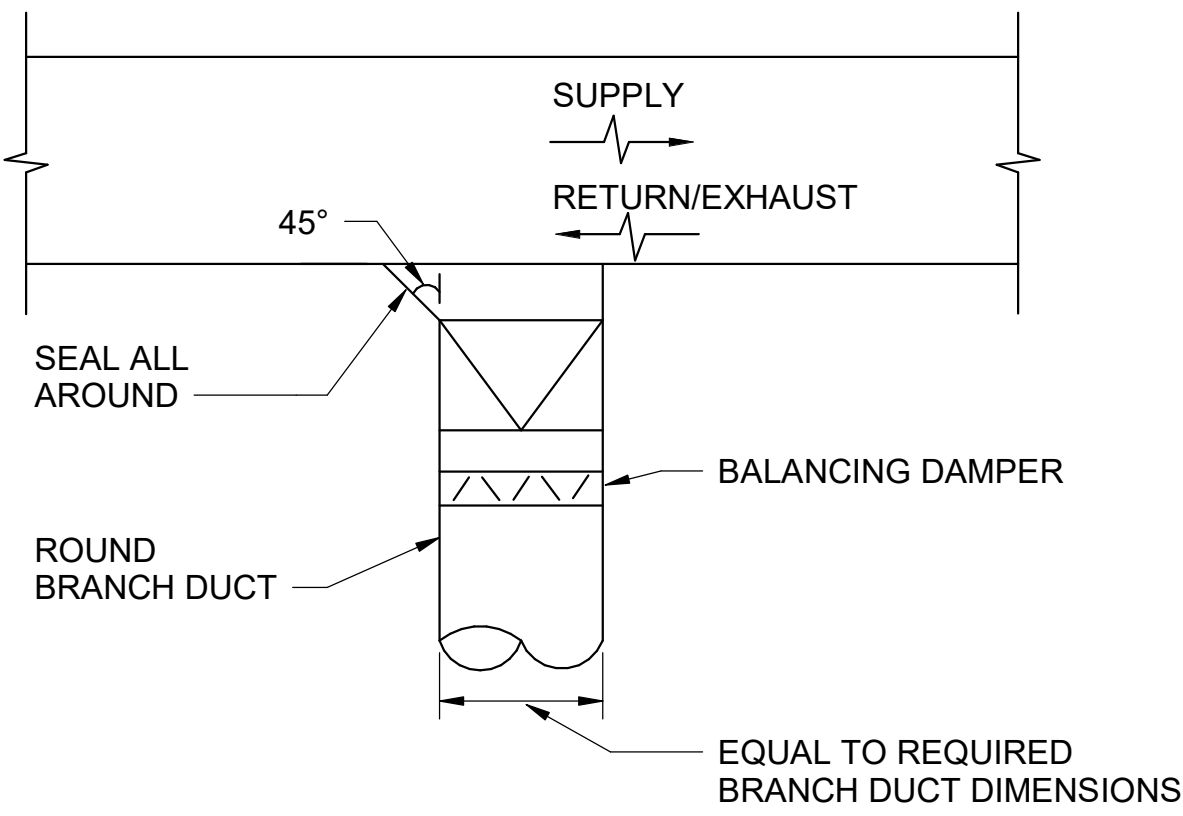
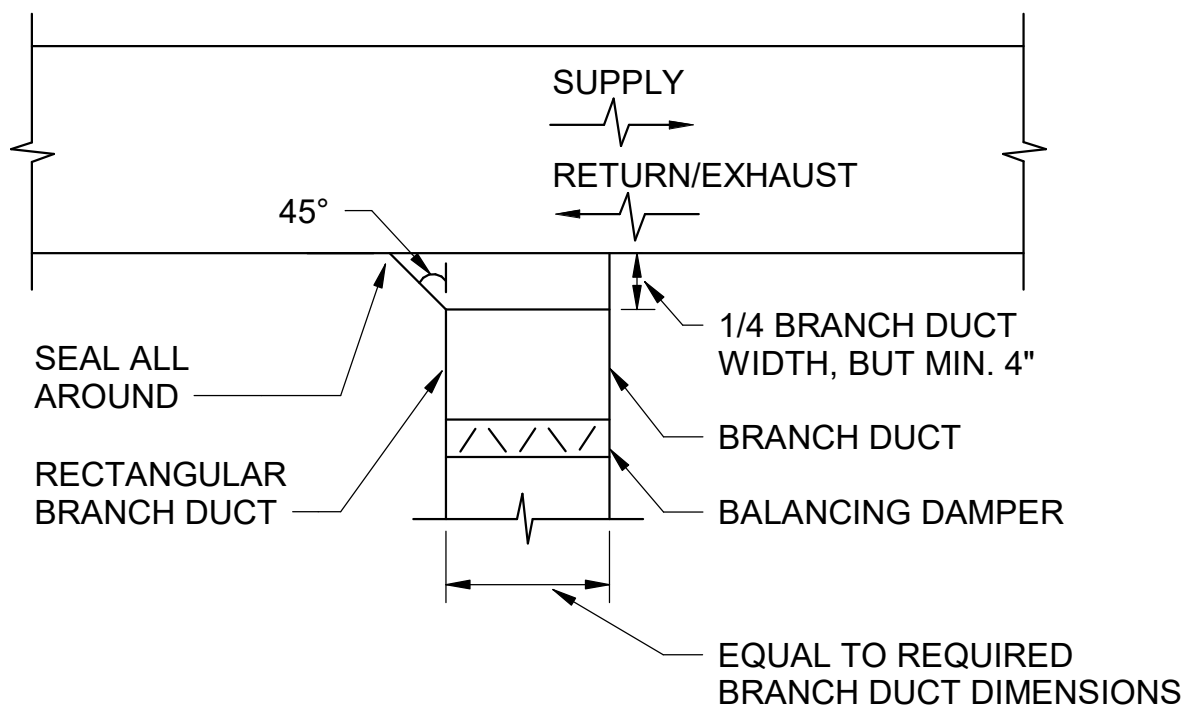


**C1** DUCT PENETRATION DETAIL  
NOT TO SCALE



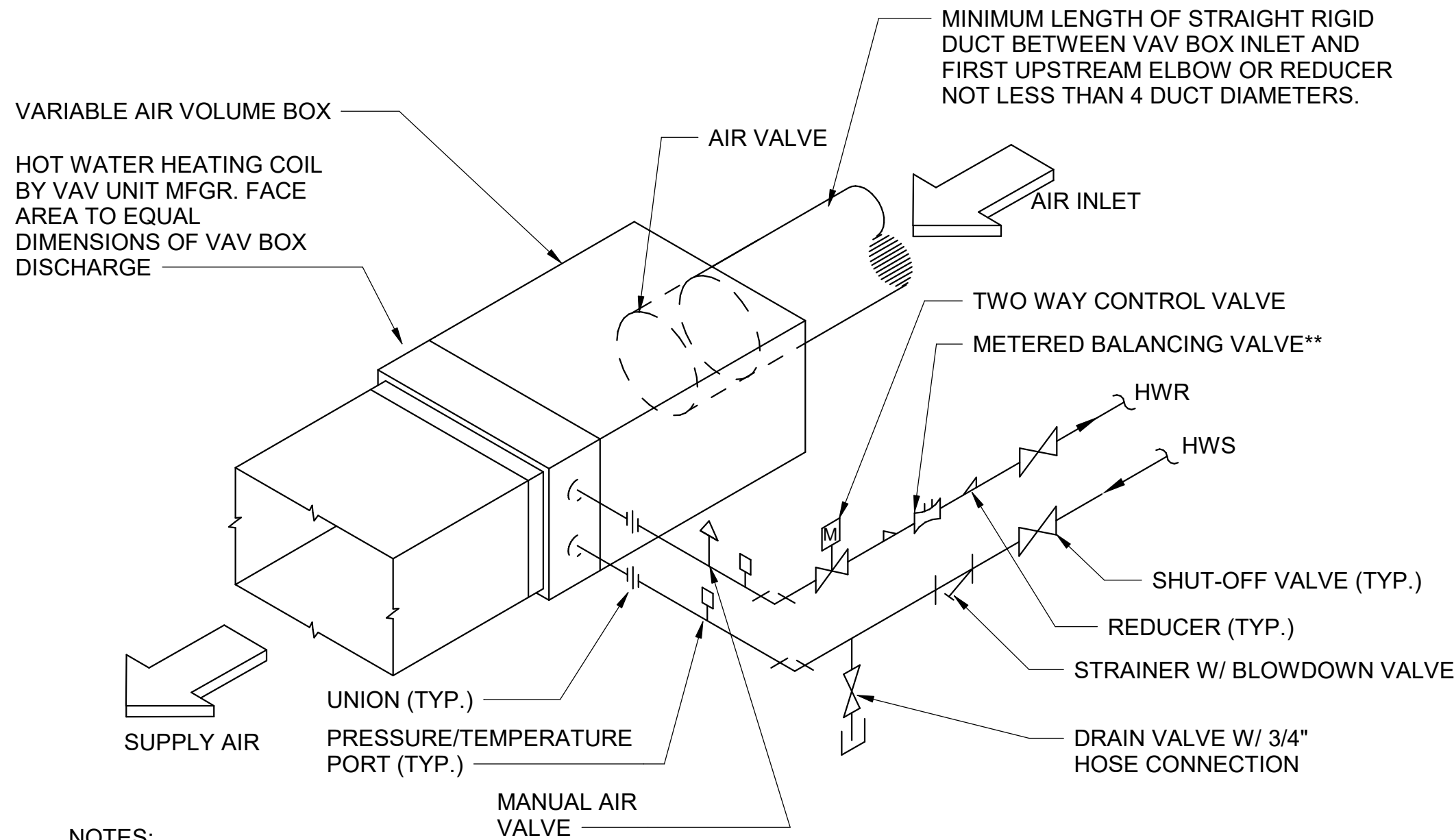
- NOTES:
1. NECK SIZE OF DIFFUSER TO MATCH FLEX DUCT SIZE UNLESS NOTED OTHERWISE ON PLANS.
  2. COORDINATE DIFFUSER FRAME TYPE WITH CEILING.
  3. FLEXIBLE RUN-OUT DUCT TO NOT EXCEED 5'-0" IN LENGTH AND ANGLE OF OFFSET TO NOT EXCEED 45 DEGREES.

**A1** FLEX DUCT CONNECTOR DETAIL  
NOT TO SCALE



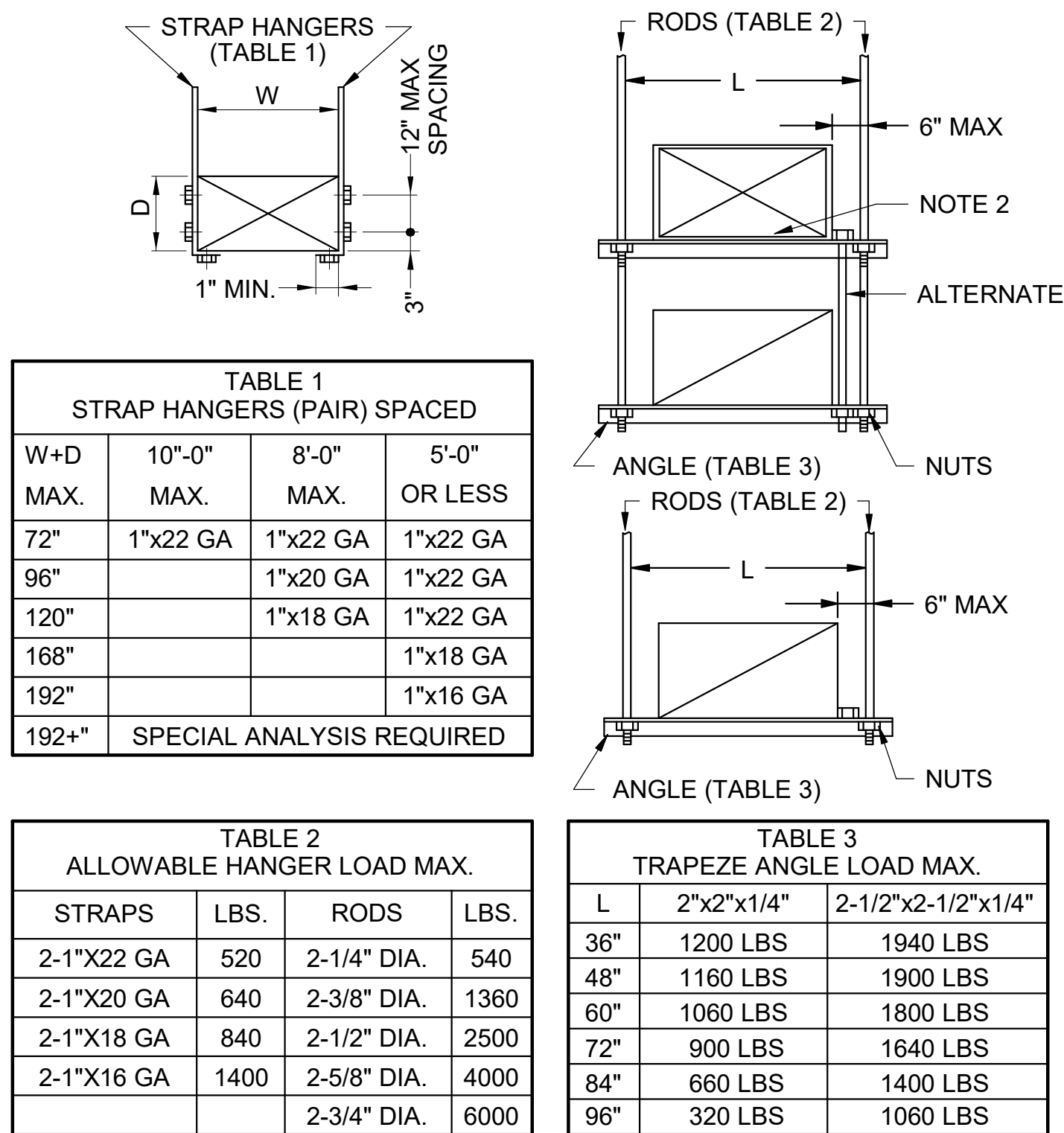
- NOTE:
1. STANDARD BELLMOUTH FITTINGS (WITH RADIUS = DIAMETER / 5) MAY BE SUBSTITUTED FOR BRANCH FITTINGS.

**A3** BRANCH DUCT CONNECTION DETAIL  
NOT TO SCALE



- NOTES:
1. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR MINIMUM STRAIGHT RIGID INLET LENGTH.
  2. \*\*STRAIGHT LENGTHS OF UNOBSTRUCTED PIPE WITHOUT INLINE APPURTENANCES MUST BE INSTALLED UP/DOWNSTREAM OF METERED BALANCING VALVE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

**C4** VAV WITH HOT WATER REHEAT COIL (2-WAY VALVE) DETAIL  
NOT TO SCALE



| TABLE 1<br>STRAP HANGERS (PAIR) SPACED |                           |               |                  |
|----------------------------------------|---------------------------|---------------|------------------|
| W+D<br>MAX.                            | 10'-0"<br>MAX.            | 8'-0"<br>MAX. | 5'-0"<br>OR LESS |
| 72"                                    | 1"x22 GA                  | 1"x22 GA      | 1"x22 GA         |
| 96"                                    |                           | 1"x20 GA      | 1"x22 GA         |
| 120"                                   |                           | 1"x18 GA      | 1"x22 GA         |
| 168"                                   |                           |               | 1"x18 GA         |
| 192"                                   |                           |               | 1"x16 GA         |
| 192+"                                  | SPECIAL ANALYSIS REQUIRED |               |                  |

| TABLE 2<br>ALLOWABLE HANGER LOAD MAX. |      |             |      |
|---------------------------------------|------|-------------|------|
| STRAPS                                | LBS. | RODS        | LBS. |
| 2-1"x22 GA                            | 520  | 2-1/4" DIA. | 540  |
| 2-1"x20 GA                            | 640  | 2-3/8" DIA. | 1360 |
| 2-1"x18 GA                            | 840  | 2-1/2" DIA. | 2500 |
| 2-1"x16 GA                            | 1400 | 2-5/8" DIA. | 4000 |
|                                       |      | 2-3/4" DIA. | 6000 |

| TABLE 3<br>TRAPEZE ANGLE LOAD MAX. |            |                    |
|------------------------------------|------------|--------------------|
| L                                  | 2"x2"x1/4" | 2-1/2"x2-1/2"x1/4" |
| 36"                                | 1200 LBS   | 1940 LBS           |
| 48"                                | 1160 LBS   | 1900 LBS           |
| 60"                                | 1060 LBS   | 1800 LBS           |
| 72"                                | 900 LBS    | 1640 LBS           |
| 84"                                | 660 LBS    | 1400 LBS           |
| 96"                                | 320 LBS    | 1060 LBS           |

- NOTES:
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION BUT NO EXTERNAL LOAD.
  2. PROVIDE HIGH DENSITY INSERT AT TRAPEZE FOR INSULATED DUCTS.

**A5** RECTANGULAR DUCT HANGER DETAIL  
NOT TO SCALE



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SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
DETAILS

SHEET NUMBER

M-501

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

## VARIABLE AIR VOLUME UNIT HOT WATER HEATING SCHEDULE

| EXISTING (E) | ID      | LOCATION       |     | BASIS OF DESIGN |           | NECK SIZE | PRIMARY AIRFLOW |           | HOT WATER HEATING COIL |               |             |             |              |            |          |          |              |    | MAX DISCHARGE SOUND (NC) | UNIT WEIGHT (LBS) | ELECTRICAL DATA |              | ASSOCIATED AHU ID | REMARKS |  |
|--------------|---------|----------------|-----|-----------------|-----------|-----------|-----------------|-----------|------------------------|---------------|-------------|-------------|--------------|------------|----------|----------|--------------|----|--------------------------|-------------------|-----------------|--------------|-------------------|---------|--|
|              |         | CALL ROOM NAME | NO. | MANUFACTURER    | MODEL NO. |           | MAX (CFM)       | MIN (CFM) | CAPACITY (BTUH)        | AIRSIDE       |             |             |              | WATERSIDE  |          |          |              |    |                          |                   | VOLTAGE         | NO. OF POLES |                   |         |  |
|              |         |                |     |                 |           |           |                 |           |                        | AIRFLOW (CFM) | EAT (db °F) | LAT (db °F) | PD (IN. WG.) | FLOW (GPM) | EWI (°F) | LWT (°F) | PD (FT. H2O) |    |                          |                   |                 |              |                   |         |  |
|              | VAV-1-1 | BOARD ROOM     | 001 | CARRIER         | 35E       | 12"       | 1300            | 420       | 18785                  | 390           | 55.0        | 95.0        | 0.10         | 2.0        | 180      | 160      | 1.0          | 30 | 44                       | 120               | 1               | AHU-1        | 1-8               |         |  |
|              | VAV-1-2 | BOARD ROOM     | 001 | CARRIER         | 35E       | 12"       | 1300            | 420       | 18785                  | 390           | 55.0        | 95.0        | 0.10         | 2.0        | 180      | 160      | 1.0          | 30 | 44                       | 120               | 1               | AHU-1        | 1-8               |         |  |
| (E)          | VAV-3-1 | CALL ROOM      | 002 | CARRIER         | 35E       | 8"        | 250             | 125       | 3375                   | 125           | 55.0        | 80.0        | 0.04         | 0.3        | 180      | 160      | 1.0          | 30 | 30                       | 120               | 1               | AHU-3        | 9                 |         |  |
|              | VAV-3-2 | CALL ROOM      | 002 | CARRIER         | 35E       | 8"        | 465             | 140       | 10690                  | 235           | 55.0        | 95.0        | 0.04         | 1.1        | 180      | 160      | 1.0          | 30 | 30                       | 120               | 1               | AHU-3        | 1-8               |         |  |

## REMARKS:

1. PRESSURE INDEPENDENT CONTROLS.
2. PROVIDE MANUFACTURER'S DISCONNECT SWITCH INTERLOCKED WITH SERVICE ACCESS DOOR.
3. PROVIDE INTEGRAL 24 V TRANSFORMER FOR CONTROL POWER.
4. PROVIDE CONTROLS AND SERVICE ACCESS ON SAME SIDE OF VAV BOX AS SHOWN ON FLOOR PLANS.
5. INSIDE OF UNIT CASING MUST HAVE NO LESS THAN 1 INCH FOIL-FACED INSULATION CONSTRUCTION.
6. MAX DISCHARGE SOUND LEVEL (NOISE CRITERIA) MUST BE AS DETERMINED BY AHRI 885.
7. PROVIDE MANUFACTURER'S VALVE KIT.
8. PROVIDE DUST TIGHT ENCLOSURE SEAL.
9. REBALANCE TO CFM SHOWN IN SCHEDULE.

## AIR TERMINALS SCHEDULE

| TAG | BASIS OF DESIGN |        | SYSTEM          | DESCRIPTION          | MOUNTING | FACE SIZE | MATERIAL | BORDER TYPE | FINISH COLOR | DESIGN NC | REMARKS |
|-----|-----------------|--------|-----------------|----------------------|----------|-----------|----------|-------------|--------------|-----------|---------|
|     | MANUFACTURER    | MODEL  |                 |                      |          |           |          |             |              |           |         |
| A1  | TITUS           | TMS-AA | SUPPLY          | THREE CONE DIFFUSER  | CEILING  | 24" X 24" | ALUMINUM | LAY-IN      | WHITE        | 25        | 1-2     |
| B1  | TITUS           | 50F    | RETURN/TRANSFER | EGGCRATE GRILLE      | CEILING  | 24" X 24" | ALUMINUM | LAY-IN      | WHITE        | 25        | 1-2     |
| B2  | TITUS           | 50F    | EXHAUST         | EGGCRATE GRILLE      | CEILING  | 12" X 12" | ALUMINUM | LAY-IN      | WHITE        | 25        | 1-2     |
| C1  | TITUS           | FL-10  | SUPPLY          | LINEAR SLOT DIFFUSER | SURFACE  | 48" X 4"  | ALUMINUM | DEFAULT     | WHITE        | 25        | 1-4     |

REMARKS:

1. WHERE COLOR LISTED IN AIR TERMINAL SCHEDULE CONFLICTS WITH COLOR LISTED IN INTERIOR DESIGN OR ARCHITECTURAL SHEETS, SPECIFICATION FROM INTERIOR DESIGNER OR ARCHITECT MUST TAKE PRECEDENCE.
2. PROVIDE MOUNTING HARDWARE/FRAME FOR DIFFUSERS AND GRILLES TO MATCH CEILING TYPE.
3. PROVIDE WITH FACTORY INSULATED PLENUM.
4. 1-SLOT, 1 INCH SLOT WIDTH, 4 FOOT LENGTH DIFFUSER.



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# CHATHAM AREA TRANSIT

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SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

**SHEET TITLE**

## MECHANICAL SCHEDULES

**SHEET NUMBER**

M-601

ORIGINAL SHEET SIZE:  
22" X 34"

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C

B

A

CONTROLS GENERAL NOTES:

1. INTEGRATE NEW UNIT CONTROLS WITH EXISTING DDC SYSTEM.
2. FIELD VERIFY ALL PIPE DIMENSIONS AND VALVE SIZES.
3. REFER TO EQUIPMENT INPUT / OUTPUT SUMMARIES FOR CONTROL POINT DESCRIPTIONS.
4. SUPPLY ALL CONTROL POWER TO CONTROL EQUIPMENT INCLUDING (BUT NOT LIMITED TO) 24V AND 120V.
5. CONTROL SEQUENCES MUST BE ACCOMPLISHED THROUGH MANUFACTURER'S INTEGRAL EQUIPMENT CONTROLS AND INPUTS / OUTPUTS OF THE BAS SYSTEM.
6. CONTROL POINTS MUST BE IMPLEMENTED AS INDICATED UTILIZING STANDARD OBJECT TYPES AND MUST NOT BE IMPLEMENTED USING PROPRIETARY METHODS.
7. PROPORTIONAL (P), INTEGRAL (I), AND DERIVATIVE (D) CONTROL LOOPS AND THEIR COMBINATIONS MUST BE USED TO MAINTAIN SETPOINTS.
8. PROVIDE PASSWORD-PROTECTED ACCESS TO ADJUSTABLE (ADJ.) SYSTEM PARAMETERS.
9. CONTROL SETPOINTS: OPERATOR MUST HAVE THE ABILITY TO CHANGE ALL WRITABLE CONTROL SETPOINTS FROM THE OPERATOR WORKSTATION (OWS).
10. ALARMS: INFORMATION THAT CAN PROVIDE AN ALERT TO THE OPERATOR ABOUT THE CONTROLLED AND MONITORED EQUIPMENT MUST BE PROGRAMMED INTO AN EFFECTIVE ALARM HANDLING SYSTEM. ALL SETPOINTS MUST BE ADJUSTABLE ON THE ALARM REPORT SCREEN BY USING PASSWORD-PROTECTED ACCESS. ALARMS MUST BE PRIORITIZED SUCH THAT HIGHER LEVEL ALARMS, SUCH AS LOSS OF UTILITY POWER, SUPPRESS LOWER LEVEL ALARMS, SUCH AS FILTER CHANGE REQUIRED.
11. DDC CONTROL WIRING AND NETWORK WIRING MUST BE ROUTED IN CONDUIT.
12. DDC CONTROL WIRING AND EQUIPMENT POWER WIRING MUST NOT BE INSTALLED WITHIN THE SAME CONDUIT.
13. CONTROLS MUST BE INSTALLED IN ACCORDANCE WITH SPECIFICATIONS AND MANUFACTURER'S APPROVED PUBLISHED LITERATURE.

POINTS SCHEDULE DESCRIPTION AND INSTRUCTIONS

DDC INPUT / OUTPUT SUMMARY

**EQUIPMENT:** ABBREVIATED DESIGNATION FOR EQUIPMENT USED FOR THE CONTROL POINTS; "n" INDICATES A SEQUENTIAL NUMBER  
**POINT NAME:** DESIGNATION FOR THE CONTROL POINT  
**POINT DESCRIPTION:** SHORT EXPLANATION OF THE POINT NAME TO INDICATE THE PURPOSE OF THE CONTROL POINT

SYSTEM GRAPHIC DISPLAY

**SYSTEM GRAPHIC DISPLAY:** INDICATES THE POINT MUST BE INCLUDED ON THE BAS GRAPHIC DISPLAY

DIGITAL OUTPUTS

**START / STOP:** SIGNAL FROM THE BAS TO START OR STOP A SYSTEM COMPONENT  
**OPEN / CLOSE:** SIGNAL FROM THE BAS TO OPEN OR CLOSE A SYSTEM COMPONENT SUCH AS A CONTROL DAMPER OR VALVE  
**ENABLE / DISABLE:** SIGNAL FROM THE BAS TO ENABLE OR DISABLE A SYSTEM COMPONENT SUCH AS A BOILER OR CHILLER

ANALOG OUTPUTS

**SETPOINT ADJUST:** SIGNAL FROM THE BAS TO MODIFY A SYSTEM SETPOINT SUCH AS LEAVING AIR TEMPERATURE OR DIFFERENTIAL PRESSURE  
**POSITION:** SIGNAL FROM THE BAS TO MODIFY A SYSTEM COMPONENT TO A SET POSITION SUCH AS A CONTROL DAMPER  
**VALVE COMMAND:** SIGNAL FROM THE BAS TO MODIFY A SYSTEM COMPONENT TO A SET POSITION SUCH AS A CONTROL VALVE  
**SPEED CONTROL:** SIGNAL FROM THE BAS TO MODIFY A SYSTEM COMPONENT TO A SET SPEED SUCH AS A FAN OR PUMP VFD

DIGITAL INPUTS

**CURRENT SENSING RELAY:** SIGNAL TO THE BAS TO INDICATE PRESENCE OF AN ELECTRICAL CURRENT  
**DIFFERENTIAL PRESSURE SWITCH:** SIGNAL TO THE BAS TO INDICATE THE DIFFERENTIAL PRESSURE LIMIT HAS BEEN EXCEEDED  
**START / STOP:** SIGNAL TO THE BAS TO INDICATE A SYSTEM COMPONENT HAS STARTED OR STOPPED  
**FLOW SWITCH:** SIGNAL TO THE BAS TO INDICATE PRESENCE OF FLUID FLOW  
**OPEN / CLOSE:** SIGNAL TO THE BAS TO INDICATE WHETHER A SYSTEM COMPONENT IS FULLY OPEN OR FULLY CLOSED  
**ALARM:** SIGNAL TO THE BAS TO INDICATE A SYSTEM COMPONENT IS IN AN ALARM CONDITION  
**PUSHBUTTON OVERRIDE:** SIGNAL TO THE BAS TO INDICATE THE SYSTEM IS TO OPERATE IN OVERRIDE MODE

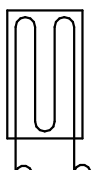
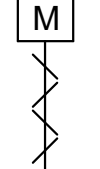
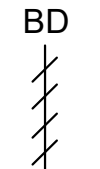
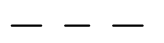
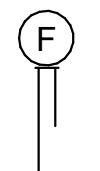
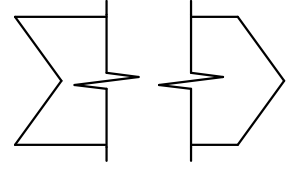
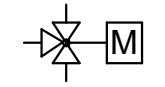
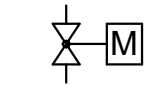
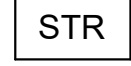
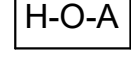
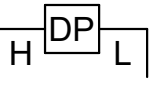
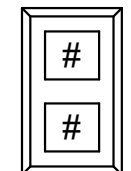
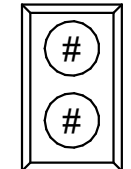
ANALOG INPUTS

**PULSE CONTACT:** SIGNAL TO THE BAS TO INDICATE INTERVAL OF MEASURED POWER CONSUMPTION OF A SYSTEM COMPONENT  
**TEMPERATURE:** SIGNAL TO THE BAS TO INDICATE MEASURED TEMPERATURE OF A SYSTEM COMPONENT SUCH AS A ZONE SENSOR OR DUCT SUPPLY AIR SENSOR  
**ELECTRICAL DEMAND (kW):** SIGNAL TO THE BAS TO INDICATE MEASURED POWER CONSUMPTION OF A SYSTEM COMPONENT  
**AMPERAGE:** SIGNAL TO THE BAS TO INDICATE MEASURED AMPS OF A SYSTEM COMPONENT ELECTRICAL CURRENT  
**VFD FREQUENCY (%):** SIGNAL TO THE BAS TO INDICATE PERCENTAGE FREQUENCY SETTING OF A VFD  
**PRESSURE:** SIGNAL TO THE BAS TO INDICATE MEASURED PRESSURE SUCH AS DIFFERENTIAL PRESSURE OR DUCT STATIC PRESSURE  
**CARBON DIOXIDE:** SIGNAL TO THE BAS TO INDICATE MEASURED CARBON DIOXIDE LEVEL  
**POSITION:** SIGNAL TO THE BAS TO INDICATE ACTUAL POSITION OF A SYSTEM COMPONENT SUCH AS A CONTROL DAMPER OR VALVE  
**FLOW:** SIGNAL TO THE BAS TO INDICATE MEASURED FLOW RATE SUCH AS AIRFLOW (CFM) OR WATER FLOW (GPM)  
**ENTHALPY:** SIGNAL TO THE BAS TO INDICATE MEASURED ENTHALPY  
**HUMIDITY (%):** SIGNAL TO THE BAS TO INDICATE MEASURED RELATIVE HUMIDITY

SOFTWARE

**ANALOG VARIABLE:** ADJUSTABLE VALUE PROGRAMMED TO THE BAS FOR ANALOG CONTROL OF A SYSTEM COMPONENT  
**BINARY VARIABLE:** ADJUSTABLE VALUE PROGRAMMED TO THE BAS FOR BINARY CONTROL OF A SYSTEM COMPONENT  
**SOFT ALARM:** ALARM SIGNAL CREATED BY THE BAS UPON A PRESET CONDITION BEING REACHED TO INDICATE AN ALARM CONDITION HAS BEEN REACHED  
**RUNTIME TOTALIZATION:** CUMULATIVE TOTAL OF SYSTEM COMPONENT RUNTIME DURATION  
**RESET AVAILABLE:** INDICATES THE RUNTIME TOTALIZATION TO BE RESETTABLE VIA THE BAS  
**SCHEDULE:** PROGRAMMABLE SCHEDULE TO INDICATE WHEN THE VARIOUS MODES OF THE SYSTEM ARE TO BE IN OPERATION  
**CALCULATED POINT:** VALUE OBTAINED FROM CALCULATION OF MULTIPLE BAS DATA POINTS

CONTROLS LEGEND:

|                                                                                       |                                                                                                                                                                                    |                                                                                     |                                               |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------|
|    | SIGNAL TO DDC SYSTEM                                                                                                                                                               |  | COIL - HYDRONIC                               |
|    | SIGNAL FROM DDC SYSTEM                                                                                                                                                             |  | MOTORIZED DAMPER<br>M ELECTRICAL ACTUATION    |
|    | CONTROL POINT                                                                                                                                                                      |  | BACKDRAFT DAMPER                              |
|    | CONTROL CONNECTION                                                                                                                                                                 |  | DUCT-MOUNTED FLOW SENSOR                      |
|    | DIRECTION OF AIRFLOW<br>(BREAKLINE MAY BE OMITTED)                                                                                                                                 |  | 3-WAY CONTROL VALVE<br>M ELECTRICAL ACTUATION |
|    | DIRECTION OF FLUID FLOW                                                                                                                                                            |  | 2-WAY CONTROL VALVE<br>M ELECTRICAL ACTUATION |
|    | VARIABLE FREQUENCY DRIVE                                                                                                                                                           |                                                                                     |                                               |
|    | MOTOR CONTROLLER (STARTER)                                                                                                                                                         |                                                                                     |                                               |
|    | HAND-OFF-AUTO SWITCH                                                                                                                                                               |                                                                                     |                                               |
|    | MOTOR                                                                                                                                                                              |                                                                                     |                                               |
|    | CURRENT TRANSDUCER                                                                                                                                                                 |                                                                                     |                                               |
|    | TEMPERATURE SENSOR                                                                                                                                                                 |                                                                                     |                                               |
|    | HUMIDITY SENSOR                                                                                                                                                                    |                                                                                     |                                               |
|    | ENTHALPY SENSOR                                                                                                                                                                    |                                                                                     |                                               |
|    | DIFFERENTIAL PRESSURE SENSOR                                                                                                                                                       |                                                                                     |                                               |
|   | STATIC PRESSURE SENSOR                                                                                                                                                             |                                                                                     |                                               |
|  | FLOW SWITCH                                                                                                                                                                        |                                                                                     |                                               |
|  | FLOW METER                                                                                                                                                                         |                                                                                     |                                               |
|  | TYP. WALL-MOUNTED SENSOR*<br>T TEMPERATURE<br>H HUMIDITY<br>DP DIFFERENTIAL PRESSURE<br>CO CARBON MONOXIDE<br>C CARBON DIOXIDE<br>AQ AIR QUALITY<br>*SECOND SENSOR MAY BE OMITTED. |                                                                                     |                                               |
|  | TYP. WALL-MOUNTED CONTROL DEVICE*<br>T TEMPERATURE<br>H HUMIDITY<br>\$ START / STOP SWITCH<br>ES EMERGENCY SHUTDOWN SWITCH<br>*SECOND CONTROL DEVICE MAY BE OMITTED.               |                                                                                     |                                               |

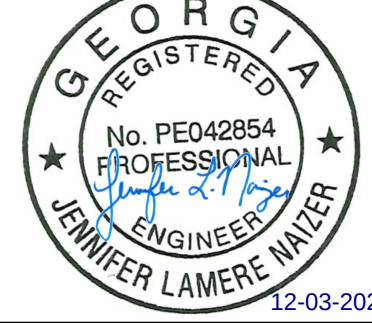


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COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

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CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
CONTROLS

SHEET NUMBER

M-701

ORIGINAL SHEET SIZE:  
22" X 34"

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| DDC INPUT OUTPUT SUMMARY<br>VARIABLE AIR VOLUME (VAV) UNIT |                 |                                             | SYSTEM GRAPHIC DISPLAY | OUTPUTS    |            |                |                 | INPUTS   |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   |          | SOFTWARE       |          |      |          | REMARKS |              |                 |                 |            |                      |                             |
|------------------------------------------------------------|-----------------|---------------------------------------------|------------------------|------------|------------|----------------|-----------------|----------|---------------|---------------|-----------------------|------------------------------|------------|-------------|------------|-------|----------------------|---------------|-------------|------------------------|----------|-------------------|----------|----------------|----------|------|----------|---------|--------------|-----------------|-----------------|------------|----------------------|-----------------------------|
| EQUIPMENT                                                  | POINT NAME      | POINT DESCRIPTION                           |                        | DIGITAL    |            | ANALOG         |                 | DIGITAL  |               |               |                       | ANALOG                       |            |             |            |       |                      |               |             |                        |          |                   |          |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            |                 |                                             |                        | START/STOP | OPEN/CLOSE | ENABLE/DISABLE | SETPOINT ADJUST | POSITION | VALVE COMMAND | SPEED CONTROL | CURRENT SENSING RELAY | DIFFERENTIAL PRESSURE SWITCH | START/STOP | FLOW SWITCH | OPEN/CLOSE | ALARM | PUSH BUTTON OVERRIDE | PULSE CONTACT | TEMPERATURE | ELECTRICAL DEMAND (kW) | AMPERAGE | VFD FREQUENCY (%) | PRESSURE | CARBON DIOXIDE | POSITION | FLOW | ENTHALPY |         | HUMIDITY (%) | ANALOG VARIABLE | BINARY VARIABLE | SOFT ALARM | RUNTIME TOTALIZATION | RESET AVAILABLE             |
| VAV-n                                                      |                 |                                             | X                      |            |            |                | X               |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   | X        |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-DPR-CMD   | VAV DAMPER COMMAND                          | X                      |            |            |                | X               |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   |          |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-DPR-POS   | VAV DAMPER POSITION                         | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          | X                 |          |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-OCC/UNOCC | VAV ZONE OCCUPIED / UNOCCUPIED              | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   |          |                |          |      |          |         |              |                 |                 | X          |                      |                             |
|                                                            | VAV-n-RCV-CMD   | VAV REHEAT HOT WATER CONTROL VALVE COMMAND  | X                      |            |            |                | X               |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   |          |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-RCV-POS   | VAV REHEAT HOT WATER CONTROL VALVE POSITION | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          | X                 |          |                |          |      | X        |         |              |                 |                 |            |                      | ALARM IF POSITION ≠ COMMAND |
|                                                            | VAV-n-FLOW      | VAV AIRFLOW (CFM)                           | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   | X        |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-T         | VAV ZONE TEMPERATURE                        | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            | X     |                      |               |             |                        |          |                   |          |                |          |      | X        |         |              |                 |                 |            |                      | ALARM PER SEQUENCE          |
|                                                            | VAV-n-TSP       | VAV ZONE TEMPERATURE SETPOINT               | X                      |            |            | X              |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   |          |                |          |      | X        |         |              |                 |                 |            |                      | ALARM PER SEQUENCE          |
|                                                            | VAV-n-SA-T      | VAV SUPPLY AIR TEMPERATURE                  | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            | X     |                      |               |             |                        |          |                   |          |                |          |      | X        |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-DIAL      | VAV ZONE SENSOR DIAL POSITION               | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          | X                 |          |                |          |      |          |         |              |                 |                 |            |                      |                             |
|                                                            | VAV-n-RH        | VAV ZONE RELATIVE HUMIDITY                  | X                      |            |            |                |                 |          |               |               |                       |                              |            |             |            |       |                      |               |             |                        |          |                   |          | X              |          | X    |          |         |              |                 |                 |            |                      | ALARM PER SEQUENCE          |

SEQUENCE OF OPERATION - VARIABLE AIR VOLUME (VAV) UNIT

EQUIPMENT

THE AIRSIDE SYSTEMS, AS IT APPLIES TO THE BUILDING AUTOMATION SYSTEM (BAS), CONSISTS OF THE FOLLOWING EQUIPMENT:

VARIABLE AIR VOLUME (VAV) UNITS, VAV-1-1, VAV-1-2, and VAV-3-2.

GENERAL

VARIABLE AIR VOLUME (VAV) UNITS MUST BE PRESSURE INDEPENDENT UNITS, WITH HOT WATER REHEAT COILS. EACH VAV UNIT MUST BE SUPPLIED WITH CUSTOM PROGRAMMABLE APPLICATION CONTROLLERS. THE BAS MUST PERFORM THE FOLLOWING VAV UNIT CONTROL STRATEGIES AND PROVIDE THE POINTS AS REQUIRED FOR THE SPECIFIED MONITORING AND DIAGNOSTICS:

**SETPOINT CONTROL:** THE BAS MUST CONTROL THE OPERATING MODE, AIRFLOW SETPOINTS, DAMPER POSITIONS, AND ZONE TEMPERATURE SETPOINT OF EACH VAV UNIT. ALL SETPOINTS MUST BE OPERATOR ADJUSTABLE. INDIVIDUAL ZONE SETPOINT AND CONTROL LOGIC MUST RESIDE AT THE ZONE LEVEL AND MUST NOT BE DEPENDENT UPON THE BAS FOR CONTROL. UPON LOSS OF COMMUNICATION, THE VAV UNIT MUST CONTINUE TO CONTROL TO THE LAST RECEIVED SETPOINTS.

RUN CONDITIONS

VAV UNIT / AHU INTERFACE:

AT MINIMUM, ALL VAV UNITS SERVED BY AN AIR HANDLING UNIT (AHU) MUST BE LINKED WITH THE RESPECTIVE AHU CONTROLLER TO PERFORM THE FOLLOWING FUNCTIONS:

**ZONE OCCUPANCY SCHEDULE:** THE SCHEDULE MUST AUTOMATICALLY SELECT THE OCCUPIED OR UNOCCUPIED OPERATING MODE OF THE AHU. ACTIVATION OF TIMED OVERRIDE SWITCH ON ZONE TEMPERATURE SENSORS (WHERE APPLICABLE) MUST RESET ZONE HEATING AND COOLING SETPOINTS TO "OCCUPIED" MODE AND THE ASSOCIATED AHU MUST ENTER OCCUPIED MODE. THE TIMED OVERRIDE MUST BE 3 HOURS (ADJ).

**AIRFLOW SENSOR FAILURE:** THE VAV CONTROLLER MUST AUTOMATICALLY SWITCH TO PRESSURE DEPENDENT OPERATION IF THE AIRFLOW SENSOR FAILS.

ZONE OPTIMAL START:

THE UNITS MUST USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM MUST MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF THE SCHEDULED OCCUPIED PERIOD. THE LEARNING ADAPTIVE ALGORITHM MUST COMPARE THE ZONE TEMPERATURE TO ITS SETPOINT AT THE BEGINNING OF SCHEDULED OCCUPIED PERIOD AND MUST AUTOMATICALLY ADAPT THE HEATING OR COOLING RESPONSE TIME FOR THE NEXT UNOCCUPIED PERIOD. THE INITIAL DEFAULT STARTING TIME PRIOR TO OCCUPANCY MUST BE 60 MINS (ADJ).

ZONE TEMPERATURE AND AIRFLOW CONTROL

OCCUPIED ZONE TEMPERATURE:

VAV UNITS MUST OPERATE TO MAINTAIN THE FOLLOWING TEMPERATURES:

- 75 °F (ADJ) COOLING SETPOINT
- 70 °F (ADJ) HEATING SETPOINT

UNOCCUPIED ZONE TEMPERATURE:

VAV UNITS MUST OPERATE TO MAINTAIN THE FOLLOWING TEMPERATURES:

- 85 °F (ADJ) COOLING SETPOINT
- 55 °F (ADJ) HEATING SETPOINT

AIRFLOW SETPOINTS:

PROVIDE OPERATOR DEFINABLE, INDEPENDENT COOLING, HEATING, AND MINIMUM AIRFLOW SETPOINTS AS INDICATED ON THE VAV UNIT SCHEDULE.

SPACE CONDITION CONTROL

THE VAV UNIT MUST MAINTAIN ZONE TEMPERATURE AND AIRFLOW SETPOINTS BY CONTROLLING THE VAV UNIT AIR DAMPER AND ZONE HOT WATER HEATING COIL VIA THE FOLLOWING:

OCCUPIED:

WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER MUST MODULATE BETWEEN THE SCHEDULED MINIMUM AIRFLOW (ADJ) AND SCHEDULED COOLING AIRFLOW (ADJ) UNTIL ZONE TEMPERATURE IS SATISFIED. HEATING COIL VALVE MUST REMAIN CLOSED.

WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER MUST MODULATE TO ITS SCHEDULED MINIMUM AIRFLOW (ADJ). HEATING COIL VALVE MUST REMAIN CLOSED.

WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE CONTROLLER MUST ENABLE THE HEATING COIL AND MODULATE THE HEATING COIL VALVE TO MAINTAIN THE ZONE TEMPERATURE SETPOINT. THE ZONE DAMPER MUST MODULATE TO MAINTAIN THE SCHEDULED HEATING AIRFLOW (ADJ) UNTIL ZONE TEMPERATURE IS SATISFIED.

UNOCCUPIED:

THE VAV UNITS MUST MODULATE THE ZONE DAMPER TO MINIMUM AIRFLOW SETPOINTS.

UNOCCUPIED SYSTEM RESET:

APPLY ± 3 °F (ADJ) ALLOWABLE DRIFT FROM UNOCCUPIED HEATING AND COOLING SETPOINTS AND ENABLE THE ASSOCIATED AIR HANDLING UNIT AS DESCRIBED BELOW:

**COOLING:** WHEN ANY ZONE TEMPERATURE HAS RISEN ABOVE ITS UNOCCUPIED SPACE TEMPERATURE COOLING SETPOINT, THE AHU MUST BEGIN STARTUP IN UNOCCUPIED MODE. THE ASSOCIATED VAV ZONE DAMPER MUST OPEN TO ITS RESPECTIVE MAXIMUM AIRFLOW SETPOINT AND REMAIN IN THIS POSITION UNTIL THE ZONE TEMPERATURE IS AT ITS UNOCCUPIED SETPOINT MINUS THE ALLOWABLE DRIFT. THE ZONE CONTROLLER MUST THEN MODULATE THE ZONE DAMPER TO THE MINIMUM AIRFLOW SETPOINT.

**HEATING:** WHEN ANY ZONE TEMPERATURE HAS FALLEN BELOW ITS UNOCCUPIED SPACE TEMPERATURE HEATING SETPOINT, THE AHU MUST BEGIN STARTUP IN UNOCCUPIED MODE. THE VAV UNIT CONTROLLER MUST MODULATE THE ZONE DAMPER TO HEATING AIRFLOW SETPOINT AND MUST MODULATE THE HEATING COIL VALVE TO 100% OPEN. THIS MUST CONTINUE UNTIL ZONE TEMPERATURE IS AT SETPOINT PLUS THE ALLOWABLE DRIFT. THE ZONE CONTROLLER MUST THEN CLOSE THE HEATING COIL VALVE AND MUST MODULATE THE ZONE DAMPER TO THE MINIMUM AIRFLOW SETPOINT.

SYSTEM VARIABLES RESET

THE VAV "REQUEST HOURS ACCUMULATOR" AND "SYSTEM RUN HOURS" VARIABLES MUST BE RESET TO 0 BY ANY OF THE FOLLOWING CONDITIONS:

- WHEN SYSTEM RUN HOURS EXCEEDS 400 (ADJ)
- BAS OVERRIDE

ALARMS AND SHUTDOWNS

**HOT WATER CONTROL VALVE FAILURE:** IF THE POSITION DOES NOT EQUAL THE COMMAND.

**HIGH ZONE TEMPERATURE:** IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 5°F (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

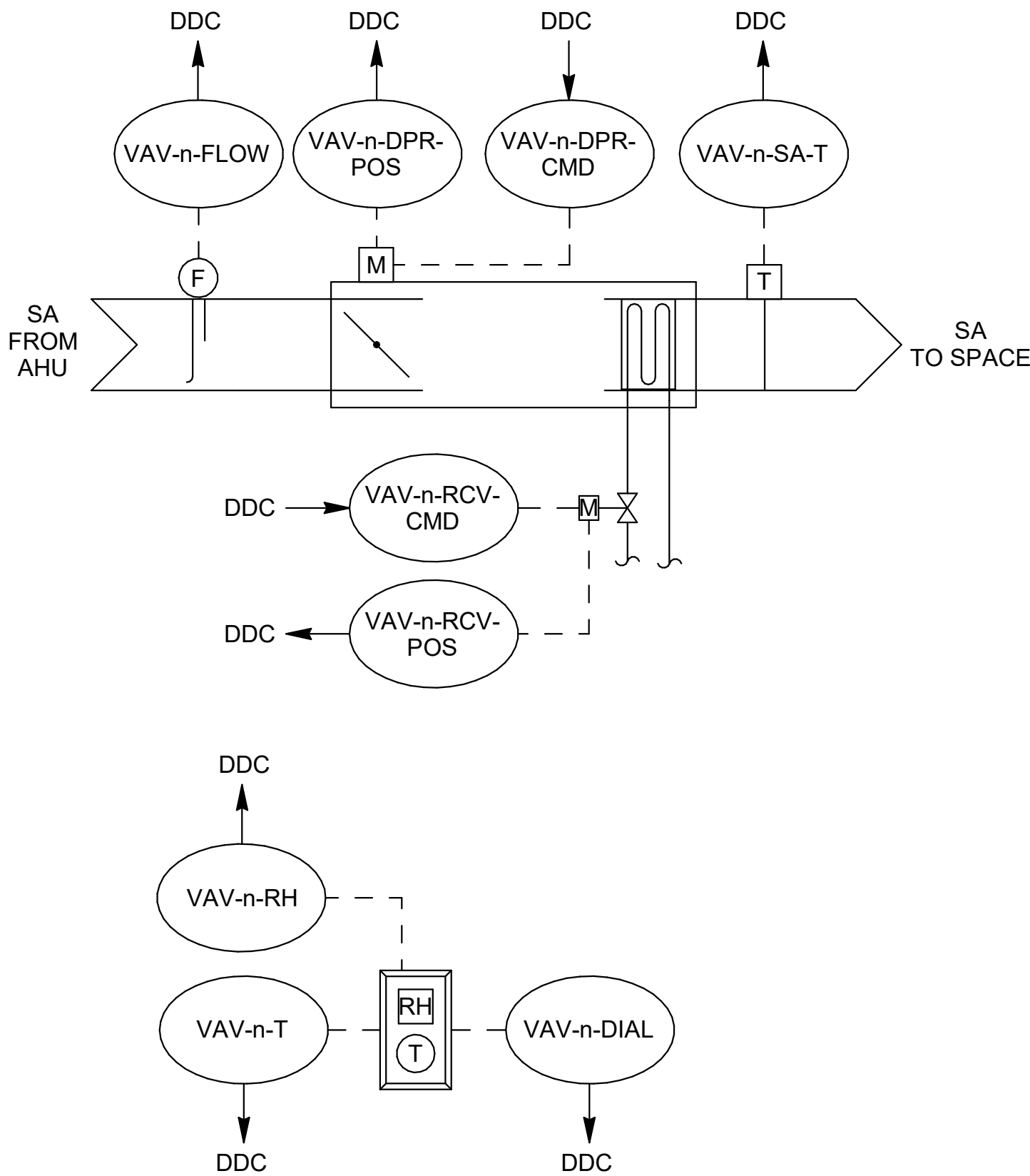
**LOW ZONE TEMPERATURE:** IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY 5°F (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

**HIGH RELATIVE HUMIDITY:** IF THE ZONE RELATIVE HUMIDITY IS GREATER THAN 65% (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

**HIGH DISCHARGE AIR TEMPERATURE:** IF THE VAV UNIT DISCHARGE AIR TEMPERATURE IS GREATER THAN 100°F (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

**HIGH AIRFLOW:** IF THE ZONE AIRFLOW IS GREATER THAN THE SETPOINT BY 25% (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

**LOW AIRFLOW:** IF THE ZONE AIRFLOW IS LESS THAN THE SETPOINT BY 25% (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).



A1 VARIABLE AIR VOLUME (VAV) UNIT CONTROLS SEQUENCE

NOT TO SCALE



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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

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CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

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DESCRIPTION

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DESIGNED BY: JLN  
DRAWN BY: JLN  
CHECKED BY: WWC  
SUBMITTED BY: WM  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

MECHANICAL  
CONTROLS

SHEET NUMBER

M-702

ORIGINAL SHEET SIZE:  
22" X 34"



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NOTE:

1. NOT ALL SYMBOLS SHOWN WILL BE USED ON THIS PROJECT.

TELECOMMUNICATIONS LEGEND

|  |                                                                                                                                                                                                |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>COMMUNICATIONS</b><br>COAXIAL CABLE TELEVISION OUTLET WALL MOUNTED 60" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                     |
|  | COMMUNICATIONS COMBINATION VOICE/DATA OUTLET MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                        |
|  | COMMUNICATIONS VOICE OUTLET MOUNT 48" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                         |
|  | COMMUNICATIONS DATA OUTLET, MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                         |
|  | FLOOR BOX SUITABLE FOR CONCRETE FLOOR POUR; TWO COMPARTMENTS - POWER AND TELECOMMUNICATIONS; FLUSH COVER/FLANGE WITH HINGED ACCESS TO RECEPTACLES AND JACKS RECESSED BELOW COVER IN FLOOR BOX. |
|  | COAXIAL CABLE TELEVISION OUTLET CEILING MOUNTED                                                                                                                                                |
|  | WALL MOUNTED JUNCTION BOX FOR VOICE/ DATA CONNECTION TO MODULAR FURNITURE.                                                                                                                     |
|  | CEILING OR WALL MOUNTED PA SPEAKER, ONE WAY TYPE; MOUNT WALL SPEAKER 120" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                     |
|  | CLOSED CIRCUIT TELEVISION CAMERA                                                                                                                                                               |
|  | CONTROL STATION                                                                                                                                                                                |
|  | WALL SWITCH, AC TYPE, SINGLE POLE SINGLE THROW, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                 |
|  | LOW VOLTAGE ON/OFF WALL SWITCH, MOUNT 48" ABOVE FINISHED FLOOR, PROVIDE DIMMER CONTROL WITH DIMMABLE FIXTURES INTEGRAL WITH SWITCH.                                                            |
|  | GOVERNMENT FURNISHED, GOVERNMENT INSTALLED WIRELESS ACCESS POINT(S). SEE DETAIL XX/T-501 FOR INFRASTRUCTURE REQUIREMENTS                                                                       |
|  | <b>WIRING</b>                                                                                                                                                                                  |
|  | RACEWAY EXPOSED TO VIEW                                                                                                                                                                        |
|  | CONCEALED RACEWAY, LOCATED IN WALL OR ABOVE FINISHED CEILING                                                                                                                                   |
|  | UNDERGROUND RACEWAY, LOCATED BELOW GRADE OR CONCRETE SLAB                                                                                                                                      |
|  | FLEXIBLE RACEWAY                                                                                                                                                                               |
|  | RACEWAY TURNED TOWARD VIEWER                                                                                                                                                                   |
|  | RACEWAY TURNED AWAY FROM VIEWER                                                                                                                                                                |
|  | RACEWAY TERMINATION, STUB-OUT AND CAP                                                                                                                                                          |
|  | LADDER TYPE CABLE TRAY (SIZE AS INDICATED)                                                                                                                                                     |
|  | WELDED WIRE BASKET TYPE CABLE TRAY (SIZE AS INDICATED)                                                                                                                                         |

ELECTRICAL LEGEND

|  |                                                                                                                                                                                                  |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>LUMINAIRES</b><br>LUMINAIRE AND OUTLET BOX. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                          |
|  | LUMINAIRE AND OUTLET BOX WIRED FOR MULTILEVEL SWITCHING, LOWER CASE LETTER INDICATES SWITCHLEG DESTINATION.                                                                                      |
|  | LUMINAIRE AND OUTLET BOX, WITH PROVISIONS FOR EMERGENCY LIGHTING. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                       |
|  | WALL MOUNTED LUMINAIRE AND OUTLET BOX. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                  |
|  | CEILING OR WALL MOUNTED EXIT SIGN AND OUTLET BOX. PROVIDE NUMBER OF ARROWS AND FACES INDICATED. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE. WALL MOUNT AT 96" ABOVE FINISHED FLOOR. |
|  | RECESSED OR PENDANT MOUNTED LUMINAIRE AND OUTLET BOX. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                   |
|  | WALL MOUNTED LUMINAIRE AND OUTLET BOX. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                  |
|  | CEILING OR WALL MOUNTED LUMINAIRE AND OUTLET BOX WITH PROVISIONS FOR EMERGENCY LIGHTING. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                |
|  | EMERGENCY LIGHT UNIT. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                                   |
|  | REMOTE HEAD OR FLOOD LUMINAIRE. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                         |
|  | WALL WASH DOWNLIGHT. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                                    |
|  | POLE MOUNTED LUMINAIRE. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                                 |
|  | POST-TOP OR BOLLARD LUMINAIRE. LETTER INDICATES LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.                                                                                                          |
|  | <b>EQUIPMENT</b>                                                                                                                                                                                 |
|  | MOTOR, HORSEPOWER AS INDICATED                                                                                                                                                                   |
|  | MOTORIZED DAMPER                                                                                                                                                                                 |
|  | 3-POLE COMBINATION MOTOR CONTROLLER STARTER/ DISCONNECT (POLES/FRAME SIZE / FUSE SIZE / NEMA ENCLOSURE) NF = NONFUSED MOUNTED 48" AFF, UNLESS OTHERWISE NOTED                                    |
|  | DISCONNECT SWITCH, (FRAME SIZE / FUSE SIZE / POLES / NEMA ENCLOSURE) NF = NON-FUSED MOUNTED 48" AFF, UNLESS OTHERWISE NOTED                                                                      |
|  | INDIVIDUALLY MOUNTED CIRCUIT BREAKER, (FRAME SIZE/ POLES/ NEMA ENCLOSURE)                                                                                                                        |
|  | DRY TYPE TRANSFORMER                                                                                                                                                                             |
|  | SURFACE MOUNTED PANELBOARD. DASHED BOX INDICATES WORKING ACCESS REQUIRED BY CODE.                                                                                                                |
|  | RECESSED MOUNTED PANELBOARD. DASHED BOX INDICATES WORKING ACCESS REQUIRED BY CODE.                                                                                                               |
|  | DISTRIBUTION PANELBOARD. DASHED BOX INDICATES WORKING ACCESS REQUIRED BY CODE.                                                                                                                   |
|  | EQUIPMENT AS INDICATED                                                                                                                                                                           |
|  | CEILING OR WALL MOUNTED JUNCTION BOX                                                                                                                                                             |
|  | PULL OR JUNCTION BOX                                                                                                                                                                             |
|  | CEILING MOUNTED BLUE LIGHT SYSTEM ROTATING BEACON                                                                                                                                                |
|  | WHITE NOISE PLENUM SPEAKER; MOUNT ABOVE DROP CEILING                                                                                                                                             |

|  |                                                                                                                                                                                                                                                                                                                 |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>WIRING DEVICES</b><br>SIMPLEX RECEPTACLE NEMA 5-20R, MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE.                                                                                                                                                                                             |
|  | DUPLEX RECEPTACLE NEMA 5-20R, MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                                                                                                                                        |
|  | DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT 6" ABOVE COUNTERTOP (TO BOTTOM OF DEVICE) OR 4" ABOVE BACKSPLASH (TO BOTTOM OF DEVICE)                                                                                                                                                                                     |
|  | DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE NEMA 5-20R, MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                                                                                                       |
|  | DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE NEMA 5-20R, MOUNT 6" ABOVE COUNTERTOP (TO BOTTOM OF DEVICE) OR 4" ABOVE BACKSPLASH (TO BOTTOM OF DEVICE)                                                                                                                                                     |
|  | DOUBLE-DUPLEX RECEPTACLE NEMA 5-20R, MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                                                                                                                                 |
|  | SPLIT YOKE, DUPLEX RECEPTACLE NEMA 5-20R WITH ONE CONTROLLED AND ONE NON-CONTROLLED RECEPTACLE. MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE.                                                                                                                                                     |
|  | SPLIT YOKE, DUPLEX RECEPTACLE NEMA 5-20R WITH ONE CONTROLLED AND ONE NON-CONTROLLED RECEPTACLE. MOUNT 6" ABOVE COUNTERTOP (TO BOTTOM OF DEVICE) OR 4" ABOVE BACKSPLASH (TO BOTTOM OF DEVICE)                                                                                                                    |
|  | SPLIT YOKE, DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE NEMA 5-20R WITH ONE CONTROLLED AND ONE NON-CONTROLLED RECEPTACLE. MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                                     |
|  | SPLIT YOKE, DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE NEMA 5-20R, WITH ONE CONTROLLED AND ONE NON-CONTROLLED RECEPTACLE. MOUNT 6" ABOVE COUNTERTOP (TO BOTTOM OF DEVICE) OR 4" ABOVE BACKSPLASH (TO BOTTOM OF DEVICE)                                                                                  |
|  | DOUBLE-DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE, NEMA 5-20R, MOUNTED CONCEALED BEHIND ELECTRIC WATER COOLER                                                                                                                                                                                           |
|  | FLOOR BOX WITH DUPLEX RECEPTACLE NEMA 5-20R. PROVIDE FIRE RATED POKE-THROUGH DEVICES ON ALL FLOORS ABOVE GROUND LEVEL. DUPLEX QUANTITY IS SPECIFIED ON FLOOR PLANS.                                                                                                                                             |
|  | CEILING BOX WITH DUPLEX RECEPTACLE, NEMA 5-20R                                                                                                                                                                                                                                                                  |
|  | WP = IN-USE WEATHER PROOF<br>TR = TAMPER RESISTANT<br>TV = TELEVISION, MOUNT AT 60" ABOVE FINISHED FLOOR<br>AFCI = ARC FAULT CIRCUIT INTERRUPTER                                                                                                                                                                |
|  | FLOOR BOX SUITABLE FOR CONCRETE FLOOR POUR; TWO COMPARTMENTS - POWER AND TELECOMMUNICATIONS; FLUSH COVER/FLANGE WITH HINGED ACCESS TO RECEPTACLES AND JACKS RECESSED BELOW COVER IN FLOOR BOX. PROVIDE 8" FIRE RATED POKE-THROUGH ABOVE GROUND FLOOR. POWER AND DATA REQUIREMENTS ARE SPECIFIED ON FLOOR PLANS. |
|  | COMMUNICATIONS COMBINATION VOICE/DATA OUTLET MOUNT 18" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                                                                                                                         |
|  | CELING BOX COMMUNICATIONS COMBINATION VOICE/DATA OUTLET, UNLESS INDICATED OTHERWISE                                                                                                                                                                                                                             |
|  | WALL SWITCH, AC TYPE, SPST, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                      |
|  | 3-WAY WALL SWITCH, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                               |

|  |                                                                                                                                                                                                                                                                                                                                                                                           |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 4-WAY WALL SWITCH, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                                                                                                         |
|  | SLIDE DIMMER, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                                                                                                              |
|  | MOTOR RATED DISCONNECT SWITCH WITH THERMAL OVERLOADS, SINGLE POLE SINGLE THROW, MOUNT ON UNIT, UNLESS INDICATED OTHERWISE.                                                                                                                                                                                                                                                                |
|  | WALL MOUNTED, DUAL TECHNOLOGY OCCUPANCY SWITCH, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                                                                            |
|  | WALL MOUNTED, DUAL TECHNOLOGY VACANCY SWITCH, MOUNT 48" ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                                                                              |
|  | LOW VOLTAGE ON/OFF WALL SWITCH, WALL MOUNT 48" ABOVE FINISHED FLOOR. PROVIDE DIMMER CONTROL WITH DIMMABLE FIXTURES INTEGRAL WITH SWITCH.                                                                                                                                                                                                                                                  |
|  | BLUE LIGHT LOCAL CONTROL SWITCH; MOUNT 48" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE                                                                                                                                                                                                                                                                                               |
|  | WHITE NOISE ROTARY VOLUME CONTROL; MOUNT 48" ABOVE FINISHED FLOOR, UNLESS INDICATED OTHERWISE.                                                                                                                                                                                                                                                                                            |
|  | CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR                                                                                                                                                                                                                                                                                                                                          |
|  | CEILING MOUNTED DUAL TECHNOLOGY VACANCY SENSOR                                                                                                                                                                                                                                                                                                                                            |
|  | CEILING MOUNTED DAYLIGHT SENSOR                                                                                                                                                                                                                                                                                                                                                           |
|  | PHOTOELECTRIC CELL                                                                                                                                                                                                                                                                                                                                                                        |
|  | CIRCUIT HOMERUN TO PANELBOARD. P2A-1,3,5, ADJACENT TO ARROW, INDICATES HOMERUN CIRCUITS 1, 3, AND 5 IN PANEL P2A. MARKS ACROSS RACEWAY INDICATE THE NUMBER OF PHASE CONDUCTORS AND NEUTRALS IN RACEWAY. NEUTRAL CONDUCTORS ARE INDICATED BY LONGER HASHMARKS. NO MARKS ACROSS RACEWAY INDICATES 2#12 CONDUCTORS AND 1#12 GROUND CONDUCTOR. CONDUCTOR SIZE #12 UNLESS INDICATED OTHERWISE. |
|  | RACEWAY EXPOSED TO VIEW                                                                                                                                                                                                                                                                                                                                                                   |
|  | CONCEALED RACEWAY, LOCATED IN WALL OR ABOVE FINISHED CEILING                                                                                                                                                                                                                                                                                                                              |
|  | UNDERGROUND RACEWAY, LOCATED BELOW GRADE OR CONCRETE SLAB                                                                                                                                                                                                                                                                                                                                 |
|  | FLEXIBLE RACEWAY                                                                                                                                                                                                                                                                                                                                                                          |
|  | RACEWAY TURNED TOWARD VIEWER                                                                                                                                                                                                                                                                                                                                                              |
|  | RACEWAY TURNED AWAY FROM VIEWER                                                                                                                                                                                                                                                                                                                                                           |
|  | RACEWAY TERMINATION, STUB-OUT AND CAP                                                                                                                                                                                                                                                                                                                                                     |
|  | PLUG-IN BUSWAY, UNLESS INDICATED OTHERWISE                                                                                                                                                                                                                                                                                                                                                |
|  | SURFACE METAL RACEWAY OR MULTIOUTLET ASSEMBLY AS INDICATED                                                                                                                                                                                                                                                                                                                                |
|  | LADDER TYPE CABLE TRAY (SIZE AS INDICATED ON PLAN)                                                                                                                                                                                                                                                                                                                                        |

|  |                                                                                                             |
|--|-------------------------------------------------------------------------------------------------------------|
|  | <b>GROUNDING AND LIGHTNING PROTECTION</b><br>3/4" x 10'-0" COPPERCLAD GROUND ROD, 18" BELOW FINISHED GRADE. |
|  | GROUND ROD TEST WELL                                                                                        |
|  | BARE COPPER GROUND CONDUCTOR, 1/0 UNLESS INDICATED OTHERWISE.                                               |
|  | 4/0 BARE COPPER GROUND CONDUCTOR                                                                            |
|  | LIGHTNING PROTECTION SYSTEM AIR TERMINAL                                                                    |
|  | LIGHTNING PROTECTION ROOF CONDUCTOR                                                                         |
|  | ELECTRICAL CONNECTION                                                                                       |
|  | <b>SITE</b>                                                                                                 |
|  | ELECTRICAL MANHOLE                                                                                          |
|  | ELECTRICAL HANDHOLE                                                                                         |
|  | PAD MOUNTED TRANSFORMER                                                                                     |
|  | POWER POLE                                                                                                  |
|  | DOWN GUY AND ANCHOR (QUANTITY AS INDICATED)                                                                 |
|  | DUCTBANK, TEXT INDICATES QUANTITY AND SIZE OF DUCTS (I.E. 2W4" = TWO 4" DUCTS)                              |
|  | <b>ONE-LINE</b>                                                                                             |
|  | TRANSFORMER                                                                                                 |
|  | CURRENT TRANSFORMER                                                                                         |
|  | FUSE                                                                                                        |
|  | ELECTRICAL CONNECTION                                                                                       |
|  | CIRCUIT BREAKER                                                                                             |
|  | SWITCH                                                                                                      |
|  | SURGE ARRESTORS                                                                                             |
|  | SEPARABLE CONNECTION                                                                                        |
|  | DRY TYPE TRANSFORMER, KVA AS INDICATED                                                                      |
|  | GROUND                                                                                                      |
|  | INDIVIDUALLY MOUNTED MOTOR STARTER OR VARIABLE FREQUENCY DRIVE, NEMA SIZE AS INDICATED                      |
|  | FUSED DISCONNECT, FRAME, POLE AND FUSE SIZE AS INDICATED.                                                   |
|  | ENCLOSED CIRCUIT BREAKER 50/3P                                                                              |
|  | <b>SCHEMATIC</b>                                                                                            |
|  | PILOT LIGHT (G=GREEN, R=RED, Y=AMBER)                                                                       |
|  | CONTROL RELAY COIL                                                                                          |
|  | SHUNT TRIP COIL                                                                                             |
|  | TIME DELAY RELAY COIL                                                                                       |
|  | METER                                                                                                       |
|  | ELECTRONIC METER                                                                                            |

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COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

COA

EOR/AOR SEAL

12/02/2025

CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: AS  
DRAWN BY: AS  
CHECKED BY: GA  
SUBMITTED BY: CB  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

ELECTRICAL  
LEGEND

SHEET NUMBER

E-002

ORIGINAL SHEET SIZE:  
22" X 34"

100% SUBMITTAL - IFC

SHEET NOTES

- 1. REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.

# KEYNOTES

- 1. DEMOLISH ALL LUMINAIRES, LIGHTING CONTROL DEVICES, AND RECEPTACLES LOCATED ON WALLS BEING DEMOLISHED. REMOVE BRANCH CIRCUIT WIRING BACK TO NEXT DEVICE NOT BEING DEMOLISHED.
- 2. DEMOLISH BRANCH CIRCUIT WIRING FOR VAVs TO THE NEAREST DEVICE NOT BEING DEMOLISHED.
- 3. DEMOLISH BRANCH CIRCUIT WIRING FOR DUCTLESS MINI SPLIT BACK TO SOURCE.
- 4. DEMOLISH WIRING DEVICES AND ASSOCIATED BRANCH CIRCUIT WIRING BACK TO SOURCE.
- 5. DEMOLISH EXISTING PANEL GHD AND ASSOCIATED BRANCH CIRCUIT WIRING BACK TO SOURCE.
- 6. DEMOLISH RECEPTACLES LOCATED ON WALLS BEING DEMOLISHED. REMOVE BRANCH CIRCUIT WIRING BACK THE NEARESTDEVICE NOT BEING DEMOLISHED.



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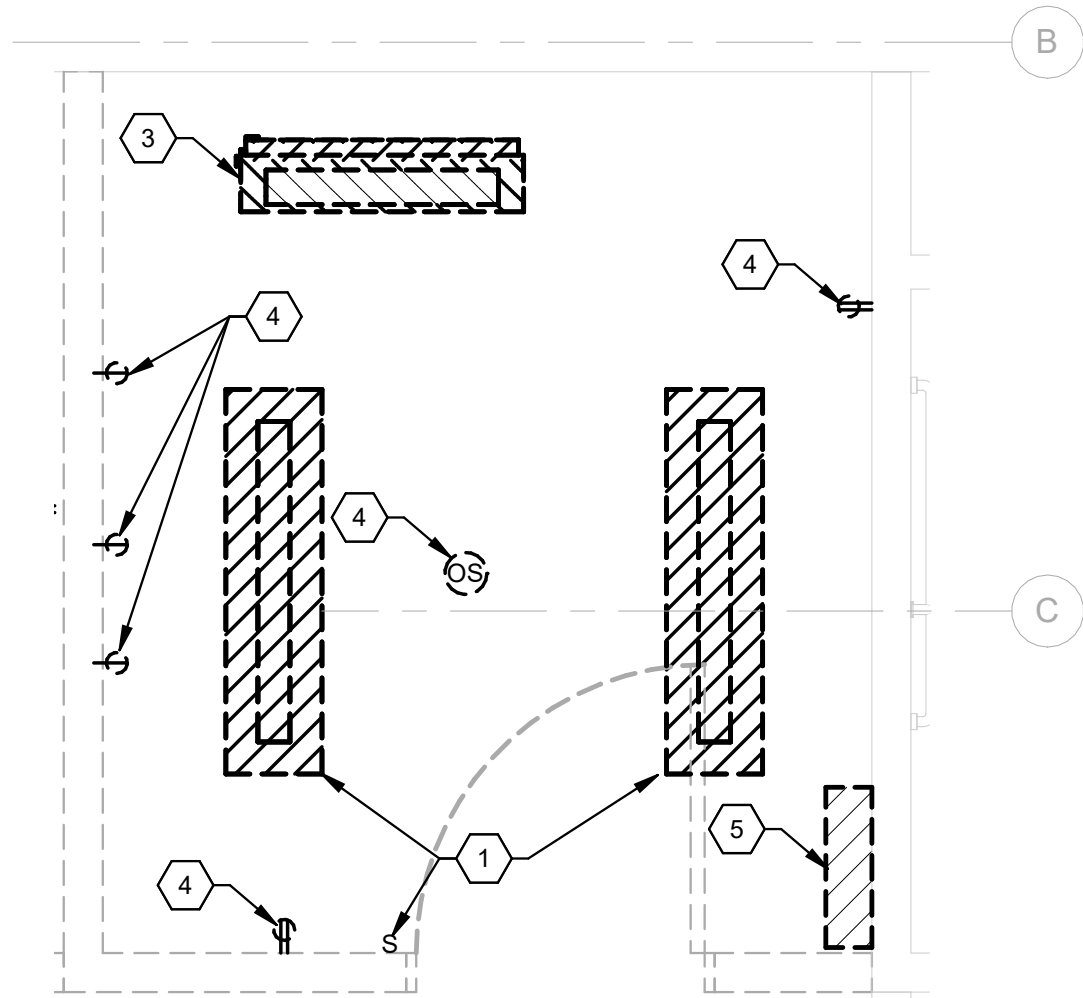
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| CHECKED BY: GA          |      |
| SUBMITTED BY: CB        |      |
| DATE: 12/04/2025        |      |
| PROJECT #: 1230561      |      |

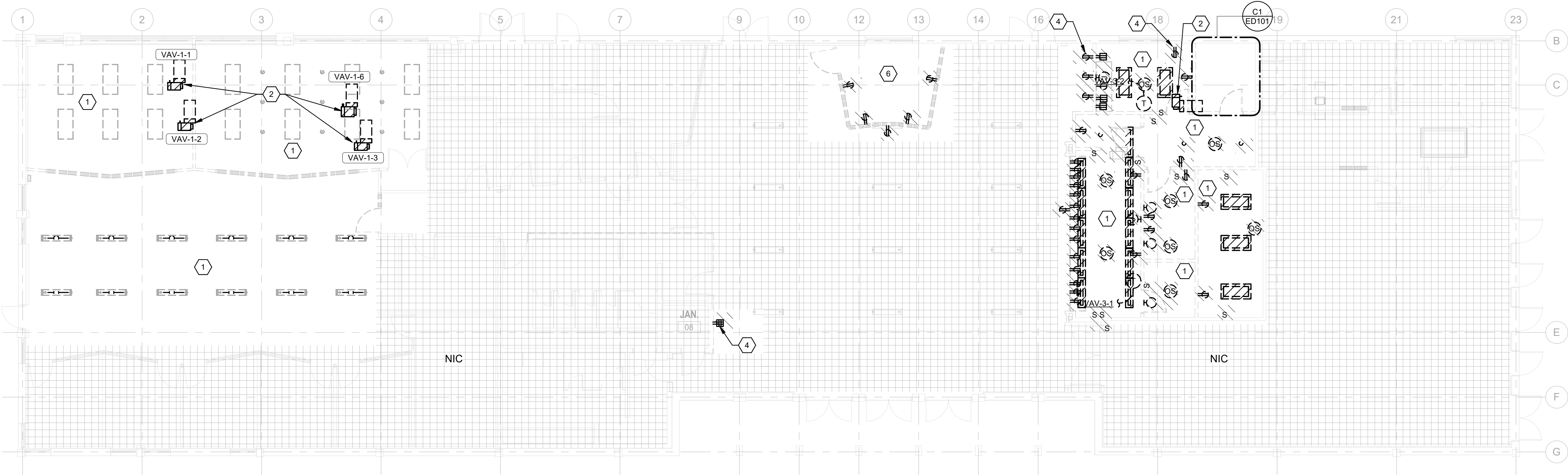
SHEET TITLE  
ELECTRICAL  
DEMOLITION  
PLANS

SHEET NUMBER  
ED101

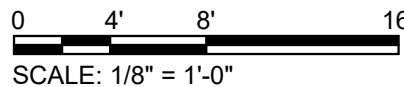
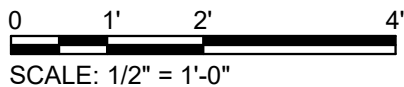
ORIGINAL SHEET SIZE:  
22" X 34"



C1 ELECTRICAL IDF DEMOLITION PLAN  
SCALE: 1/2" = 1'-0"



A1 ELECTRICAL DEMOLITION PLAN  
SCALE: 1/8" = 1'-0"



1

2

3

4

5

SHEET NOTES

- 1. REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.
- 2. REFER TO SHEET E-611 FOR LUMINAIRE AND LUMINAIRE CONTROL SCHEDULES.
- 3. RACEWAYS THAT SPAN EXPANSION JOINTS MUST BE PROVIDED WITH EXPANSION FITTINGS. FITTINGS MUST BE CONCRETE TIGHT WITH GROUND CONTINUITY.



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PROJECT NAME  
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SAVANNAH, GA 31401

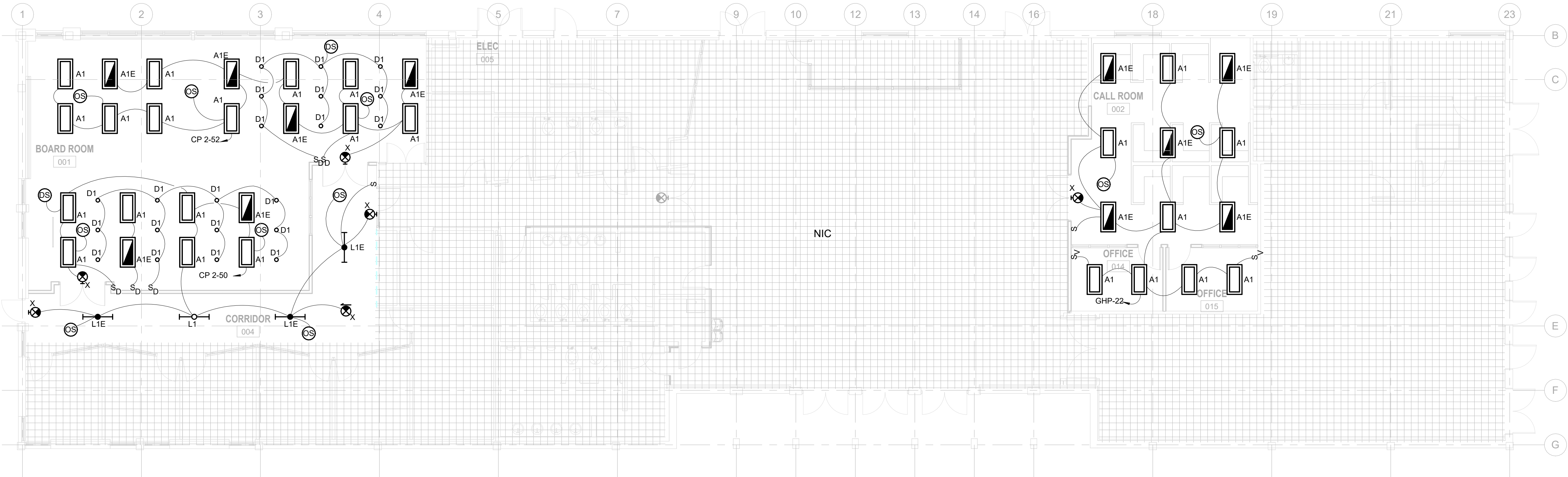
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| DATE:                   | 12/04/2025  |      |
| PROJECT #:              | 1230561     |      |

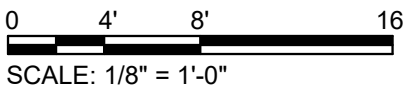
SHEET TITLE  
LIGHTING PLAN

SHEET NUMBER  
E-101

ORIGINAL SHEET SIZE:  
22" X 34"



A1 LIGHTING PLAN  
SCALE: 1/8" = 1'-0"



SHEET NOTES

- 1. REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.
- 2. RACEWAYS THAT SPAN EXPANSION JOINTS MUST BE PROVIDED WITH EXPANSION FITTINGS. FITTINGS MUST BE CONCRETE TIGHT WITH GROUND CONTINUITY.

# KEYNOTES

- 1. PROVIDE TWO (2) 3/4" CONDUITS WITH PULL STRINGS BETWEEN ALL FLOOR BOXES FOR POWER CONNECTIONS. FLOOR BOX CONDUITS SHALL BE FED FROM THE WALL INDICATED ON THE FLOOR PLANS. TURN CONDUITS UP INTO WALL, AND ROUTED ABOVE ACCESSIBLE CEILING TO NEAREST ELECTRICAL ROOM. INSTALL CONDUITS IN THE SLAB. CUT SLAB AS REQUIRED TO ACCOMMODATE INSTALLATION. REFER TO C1/E-131 FOR FLOOR BOX SLAB INSTALLATION.
- 2. STUB UP 3/4" CONDUIT INTO PULL BOX INSIDE OF RAISED FLOOR. CONDUIT SHALL BE TURNED VERTICALLY INTO WALL AND ROUTED ABOVE ACCESSIBLE CEILING OVER TO ELECTRICAL ROOM 005. CABLE INSTALLED IN THE RAISED FLOOR BETWEEN DEVICES SHALL BE MC CABLE.
- 3. PROVIDE LEGRAND RESOURCE RFBA® SERIES FOUR GANG FLOOR BOX WITH TWO RECEPTACLES, DATA AND AUDIO. COORDINATE EXACT TYPE AND LOCATION WITH FURNITURE AND OWNER PRIOR TO INSTALLATION.
- 4. EXISTING BUS CANOPY LED LIGHTING CONTROL PANEL TO REMAIN.
- 5. FURNITURE FEED FOR WORKSTATION POWER. COORDINATE THE EXACT LOCATION AND FINAL REQUIREMENTS WITH FURNITURE PROVIDER/INSTALLER.
- 6. PROVIDE LEGRAND RESOURCE RFBA® SERIES TWO GANG FLOOR BOX FOR RAISED FLOORS WITH TWO RECEPTACLES, DATA AND AUDIO. COORDINATE EXACT TYPE AND LOCATION WITH FURNITURE AND OWNER PRIOR TO INSTALLATION.
- 7. STUB UP 3/4" CONDUIT INTO PULL BOX INSIDE OF RAISED FLOOR. CONDUIT SHALL BE TURNED VERTICALLY INTO WALL AND ROUTED ABOVE ACCESSIBLE CEILING OVER TO ELECTRICAL ROOM 005.

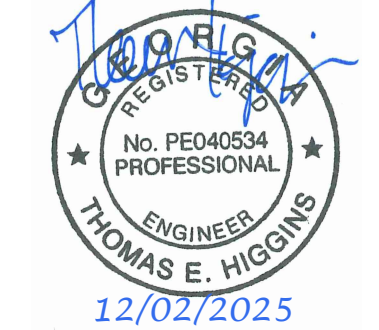


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CLIENT INFORMATION

CHATHAM AREA  
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PROJECT NAME

CAT ITC  
BOARD  
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SAVANNAH, GA 31401

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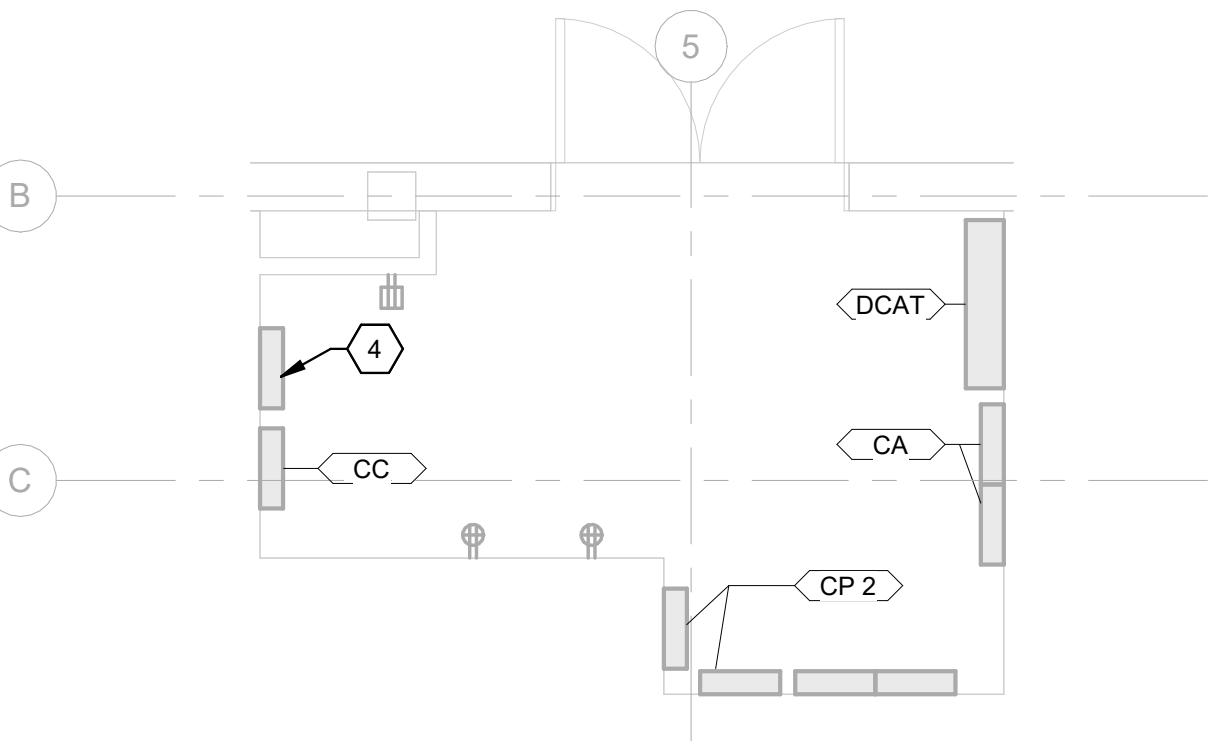
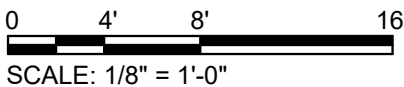
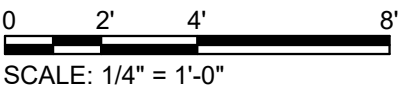
SHEET TITLE

POWER PLAN

SHEET NUMBER

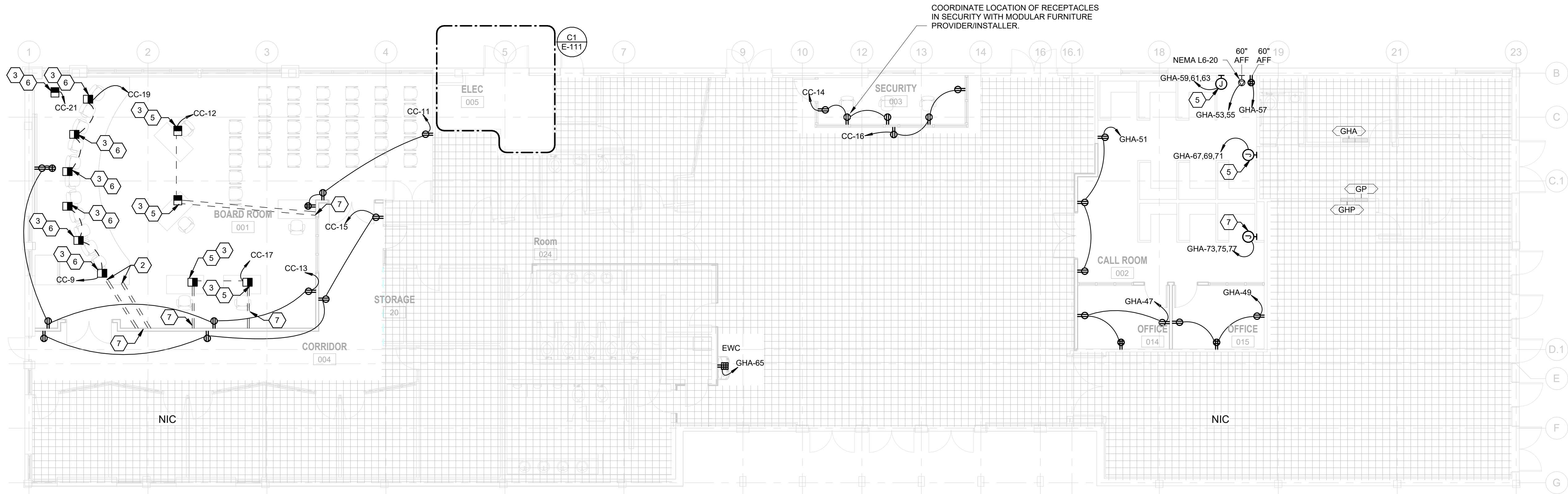
E-111

ORIGINAL SHEET SIZE:  
22" X 34"



C1 ELECTRICAL ROOM POWER PLAN

SCALE: 1/4" = 1'-0"



A1 POWER PLAN

SCALE: 1/8" = 1'-0"

SHEET NOTES

1. REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.
2. RACEWAYS THAT SPAN EXPANSION JOINTS MUST BE PROVIDED WITH EXPANSION FITTINGS. FITTINGS MUST BE CONCRETE TIGHT WITH GROUND CONTINUITY.

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

| UNIT    | VOLTAGE | NUMBER OF POLES | KVA      | HP | MOTOR CONTROLLER | DISCONNECT | BRANCH CIRCUIT WIRING | PANEL | CIRCUIT | LOCATION |            | NOTES |
|---------|---------|-----------------|----------|----|------------------|------------|-----------------------|-------|---------|----------|------------|-------|
|         |         |                 |          |    |                  |            |                       |       |         | NUMBER   | NAME       |       |
| VAV-1-1 | 120 V   | 1               | 0.25 kVA | -  | -                | SEE NOTES  | 2-#12, #12G, 3/4"C    | CA    | 33      | 001      | BOARD ROOM | 2,3   |
| VAV-1-2 | 120 V   | 1               | 0.25 kVA | -  | -                | SEE NOTES  | 2-#12, #12G, 3/4"C    | CA    | 33      | 001      | BOARD ROOM | 2,3   |
| VAV-3-1 | 120 V   | 1               | 0.25 kVA | -  | -                | EXISTING   | EXISTING              | GHA   | 20      | 002      | CALL ROOM  | 1     |
| VAV-3-2 | 120 V   | 1               | 0.25 kVA | -  | -                | SEE NOTES  | 2-#12, #12G, 3/4"C    | GHA   | 20      | 002      | CALL ROOM  | 2,3   |

- NOTES:
1. EQUIPMENT IS EXISTING TO REMAIN.
2. CONNECT NEW EQUIPMENT TO EXISTING 120V CIRCUIT.
3. EQUIPMENT IS PROVIDED WITH MANUFACTURER DISCONNECT.



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CHATHAM AREA  
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PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

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PROJECT #: 1230561

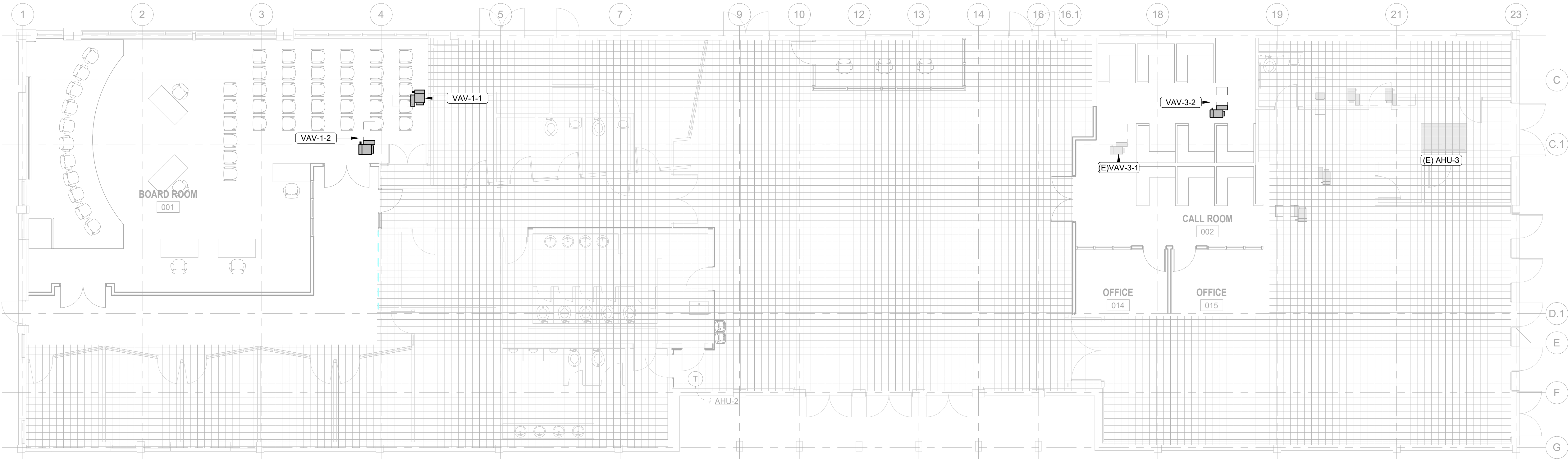
SHEET TITLE

MECHANICAL  
POWER PLAN

SHEET NUMBER

E-121

ORIGINAL SHEET SIZE:  
22" X 34"



A1 MECHANICAL POWER PLAN

SCALE: 1/8" = 1'-0"

0 4' 8' 16'  
SCALE: 1/8" = 1'-0"

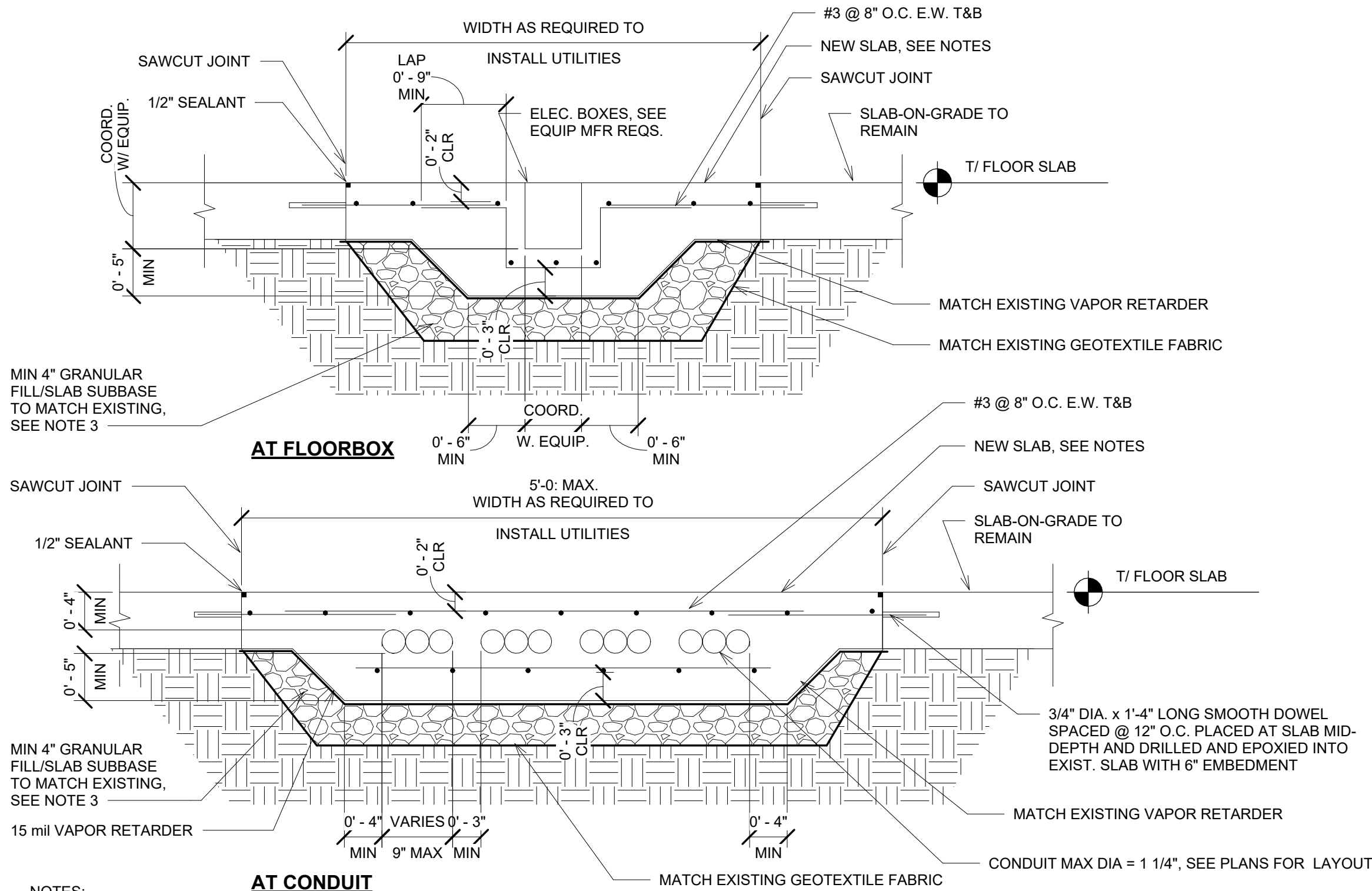


D

C

B

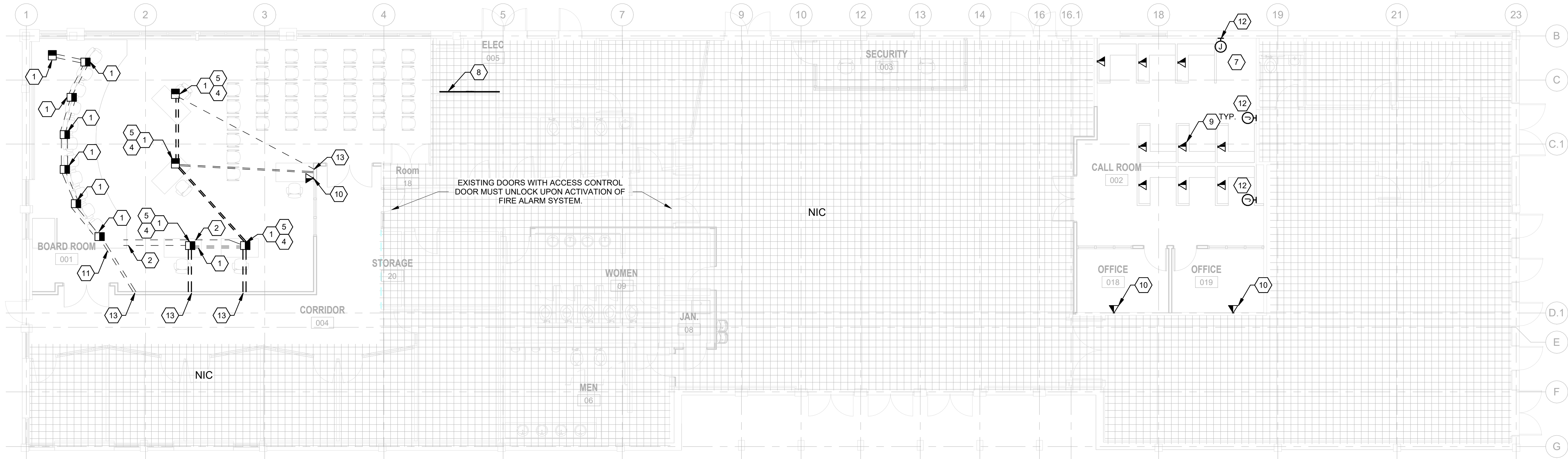
A



NOTES:

1. NEW SLAB TO MATCH EXISTING SLAB THICKNESS AND TOP ELEVATION.
2. VERIFY THICKNESS OF EXISTING SLAB BEFORE PROCEEDING WITH CONSTRUCTION OF NEW SLAB. IF EXISTING SLAB IS LESS THAN 6" IN DEPTH, NOTIFY ENGINEER FOR REVISED JOINT DETAIL.
3. GRANULAR FILL AND SOIL UNDER SLAB TO BE COMPACTED TO A MINIMUM DENSITY OF 95% STANDARD PROCTOR.
4. PROVIDE SAWCUT CONTROL JOINTS IN SLAB POURBACK. MATCH LOCATION OF EXISTING JOINTS IN SURROUNDING SLAB, WITH ADDITIONAL JOINTS AT 4'-0" O.C. MAX IN BETWEEN. SAWCUT DEPTH = 1 1/2". SAWCUT SLAB AS SOON AS THE CONCRETE WILL SAFELY SUPPORT PERSONNEL AND EQUIPMENT. MAX WITHIN 4 HOURS OF CONCRETE PLACEMENT. FILL JOINT WITH SEALANT AFTER SLAB HAS CURED
5. POURBACK SLAB TO BE f<sub>c</sub>MIN = 4000 PSI AT 28 DAYS.

C1 TYPICAL SLAB POURBACK AT CONDUIT AND FLOOR BOXES  
NOT TO SCALE



A1 TELECOMMUNICATIONS PLAN  
SCALE: 1/8" = 1'-0"

KEYNOTES (CONTINUED)

7. OWNER TO RELOCATE EXISTING IT EQUIPMENT IN THIS SPACE SHOWN ON SHEET ED101. NEW IT CABINET TO BE PROVIDED BY OWNER'S LOW VOLTAGE CONTRACTOR. COORDINATE LOCATION DURING CONSTRUCTION.
8. EXISTING SERVICE PROVIDER BACKBOARD TO REMAIN.
9. DATA OUTLET IN FURNITURE. COORDINATE LOCATION WITH FURNITURE PROVIDER/INSTALLER. COORDINATE QUANTITY OF DATA OUTLETS WITH OWNER'S LOW VOLTAGE CONTRACTOR DURING CONSTRUCTION.
10. PROVIDE 4-11/16" SQUARE JUNCTION BOX WITH 1"C AND PULL STRING CONCEALED IN WALL. STUB CONDUIT UP TO 6" ABOVE ACCESSIBLE CEILING. TELECOMMUNICATIONS CABLING, OUTLET AND FACEPLATE BY OTHERS, LOW VOLTAGE CONTRACTOR.
11. STUB UP TWO (2) 2" CONDUITS INTO RAISED FLOOR. CABLE INSTALLED UNDER THE RAISED FLOOR BETWEEN DEVICES SHALL BE RUN IN SNAKE-TRAY IN ORDER TO PROVIDE SUPPORT FOR CABLES. PROVIDE SNAKE-TRAY FOR CABLE ROUTING IN RAISED FLOOR.
12. FURNITURE FEED FOR WORKSTATION DATA. COORDINATE EXACT LOCATION AND FINAL REQUIREMENTS WITH FURNITURE PROVIDER/INSTALLER.
13. CONDUIT SHALL BE TURNED VERTICALLY INTO WALL AND ROUTED ABOVE ACCESSIBLE CEILING OVER TO TELECOM ROOM.

SHEET NOTES

1. RACEWAYS THAT SPAN EXPANSION JOINTS MUST BE PROVIDED WITH EXPANSION FITTINGS. FITTINGS SHALL BE CONCRETETIGHT WITH GROUND CONTINUITY.
2. EQUIPMENT NOT RELATED TO THE SUPPORT OF ANY TELECOM SPACE (CONDUIT, PIPING, DUCTWORK, ETC.) MUST NOT BE INSTALLED IN, PASS THROUGH, OR ENTER THE TELECOM SPACE.

# KEYNOTES

1. PROVIDE (2) 1 1/4" CONDUITS WITH PULL STRINGS BETWEEN ALL FLOOR BOXES.
2. PROVIDE (1) 2" CONDUIT WITH PULL STRING FROM DESK OVER TO STAGE AREA. STUB-OUT CONDUIT IN STAGE (RAISED FLOOR) AREA.
3. PROVIDE (2) 1 1/4" CONDUITS W/ PULL STRINGS FROM EACH FLOOR BOX IN RAISED FLOOR TO TELECOM ROOM. FLOOR BOX CONDUITS SHALL BE FED FROM WALL SHOWN ON FLOOR PLANS. CONDUITS SHALL STUB-UP 6" ABOVE ACCESSIBLE CEILING. CABLING SHALL RUN OVER TO TELECOM ROOM. CONDUITS SHALL STUB-OUT 3" BELOW CEILING. TERMINATE CONDUITS WITH INSULATED BUSHING. LOW VOLTAGE COMPARTMENT TO BE FITTED OUT BY OWNER'S LOW VOLTAGE CONTRACTOR. COORDINATE SERVICES DURING CONSTRUCTION. REFER TO C1/E-131 FOR SLAB INFORMATION FOR FLOOR BOXES.
4. PROVIDE (2) 1 1/4" CONDUITS W/ PULL STRINGS FROM EACH FLOOR BOX OVER TO TELECOM ROOM. FLOOR BOX CONDUITS SHALL BE FED FROM WALL SHOWN ON FLOOR PLANS. CONDUITS SHALL STUB-UP IN WALL 6" ABOVE ACCESSIBLE CEILING. CABLING IN CEILING SHALL BE FREE RUN OVER TO TELECOM ROOM. SUPPORT CABLING IN CEILING USING J-HOOKS. CONDUITS IN TELECOM ROOM SHALL STUB-OUT 3" BELOW CEILING. TERMINATE CONDUITS WITH INSULATED BUSHING. FLOOR BOX LOW VOLTAGE COMPARTMENT TO BE FITTED OUT BY OWNER'S LOW VOLTAGE CONTRACTOR. COORDINATE SERVICES DURING CONSTRUCTION. REFER TO C1/E-131 FOR SLAB INFORMATION FOR FLOOR BOXES.
5. PROVIDE LEGRAND RESOURCE RFBA® SERIES FOUR GANG FLOOR BOX WITH TWO RECEPTACLES, DATA AND AUDIO. COORDINATE EXACT TYPE AND LOCATION WITH FURNITURE PROVIDER AND OWNER'S LOW VOLTAGE CONTRACTOR PRIOR TO INSTALLATION.

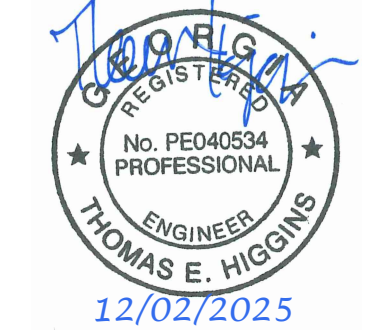


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Suite 500  
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COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL



12/02/2025

CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: AS  
DRAWN BY: AS  
CHECKED BY: GA  
SUBMITTED BY: CB  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE

TELECOMMUNICATIONS  
PLAN

SHEET NUMBER

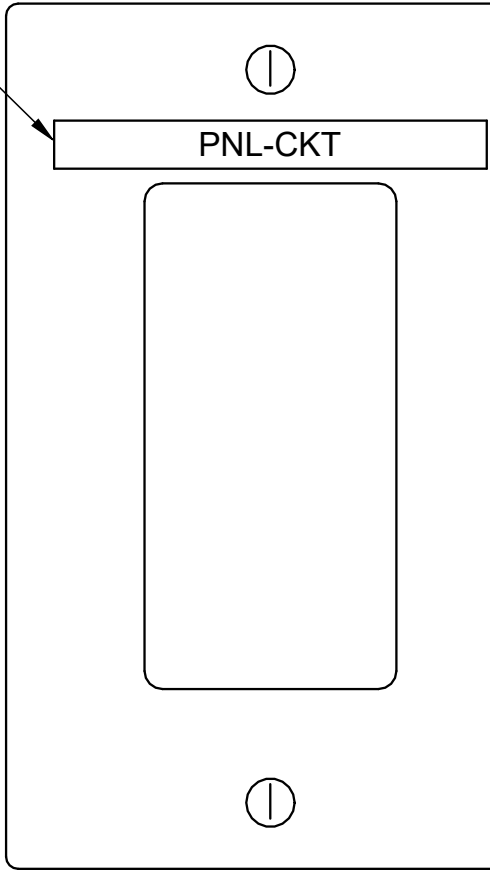
E-131

ORIGINAL SHEET SIZE:  
22" X 34"

0 4' 8' 16'  
SCALE: 1/8" = 1'-0"



CLEAR LABEL TAPE WITH TYPED, BLACK LETTERING DESIGNATING PANEL AND CIRCUIT NUMBER.

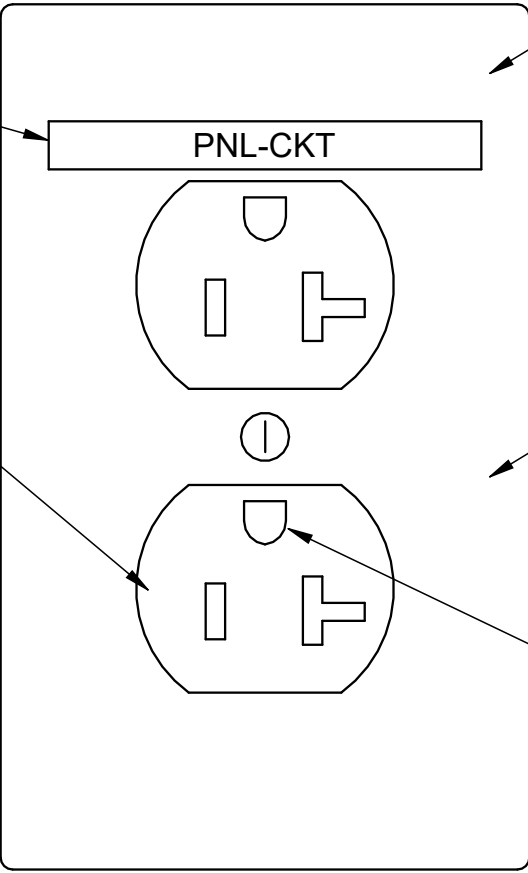


PROVIDE DURABLE WIRE MARKERS OR TAGS INSIDE THE OUTLET BOX.

FACEPLATE COLOR PER SPECIFICATION 26 27 26

C1 LIGHT SWITCH FACEPLATE DETAIL  
SCALE: NOT TO SCALE

CLEAR LABEL TAPE WITH TYPED, BLACK LETTERING DESIGNATING PANEL AND CIRCUIT NUMBER.



PROVIDE RECEPTACLES IN THE FOLLOWING COLORS:  
• WHITE: NORMAL POWER

PROVIDE DURABLE WIRE MARKERS OR TAGS INSIDE THE OUTLET BOX.

FACEPLATE COLOR PER SPECIFICATION 26 27 26

INSTALL GROUND PIN ON TOP

C3 RECEPTACLE FACEPLATE DETAIL  
SCALE: NOT TO SCALE

SHEET NOTES

1. REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.



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COA NUMBER: PEF000802  
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CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: AS  
DRAWN BY: AS  
CHECKED BY: GA  
SUBMITTED BY: CB  
DATE: 12/04/2025  
PROJECT #: 1230561

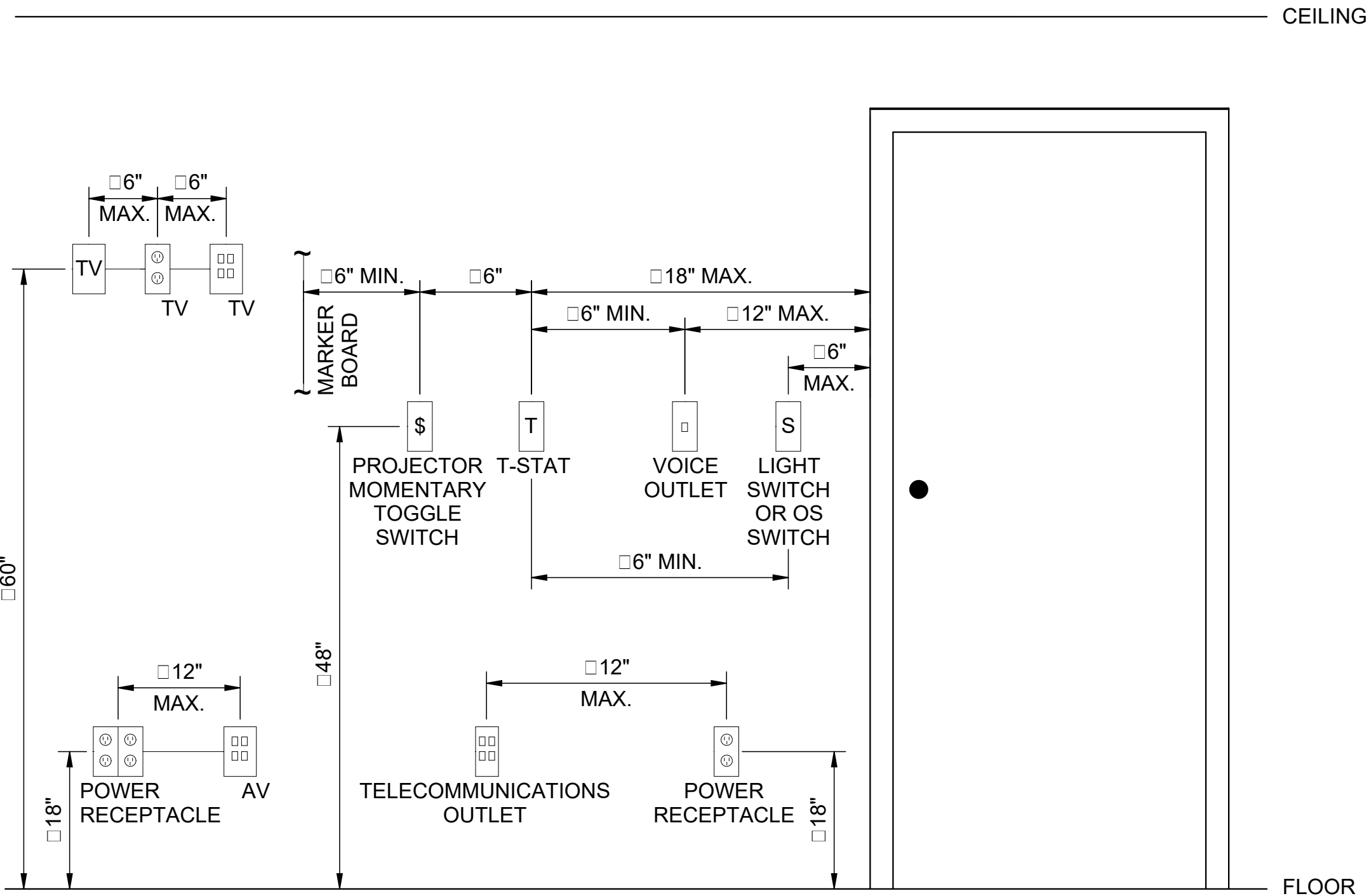
SHEET TITLE

ELECTRICAL  
DETAILS

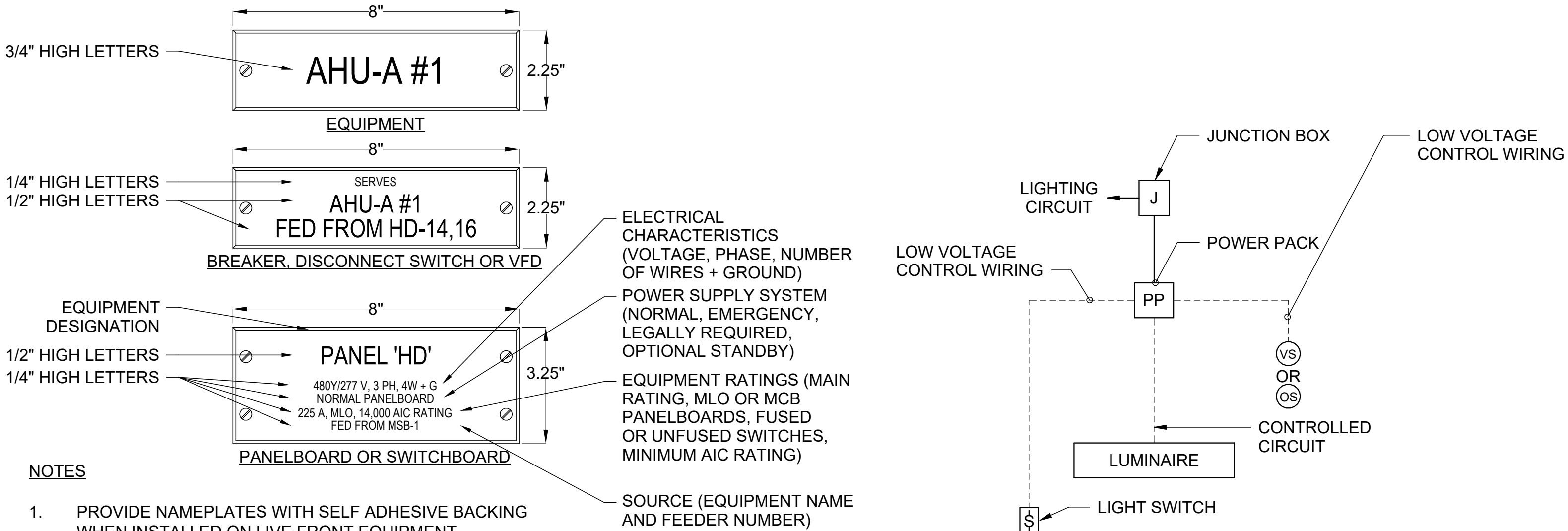
SHEET NUMBER

E-501

ORIGINAL SHEET SIZE:  
22" X 34"



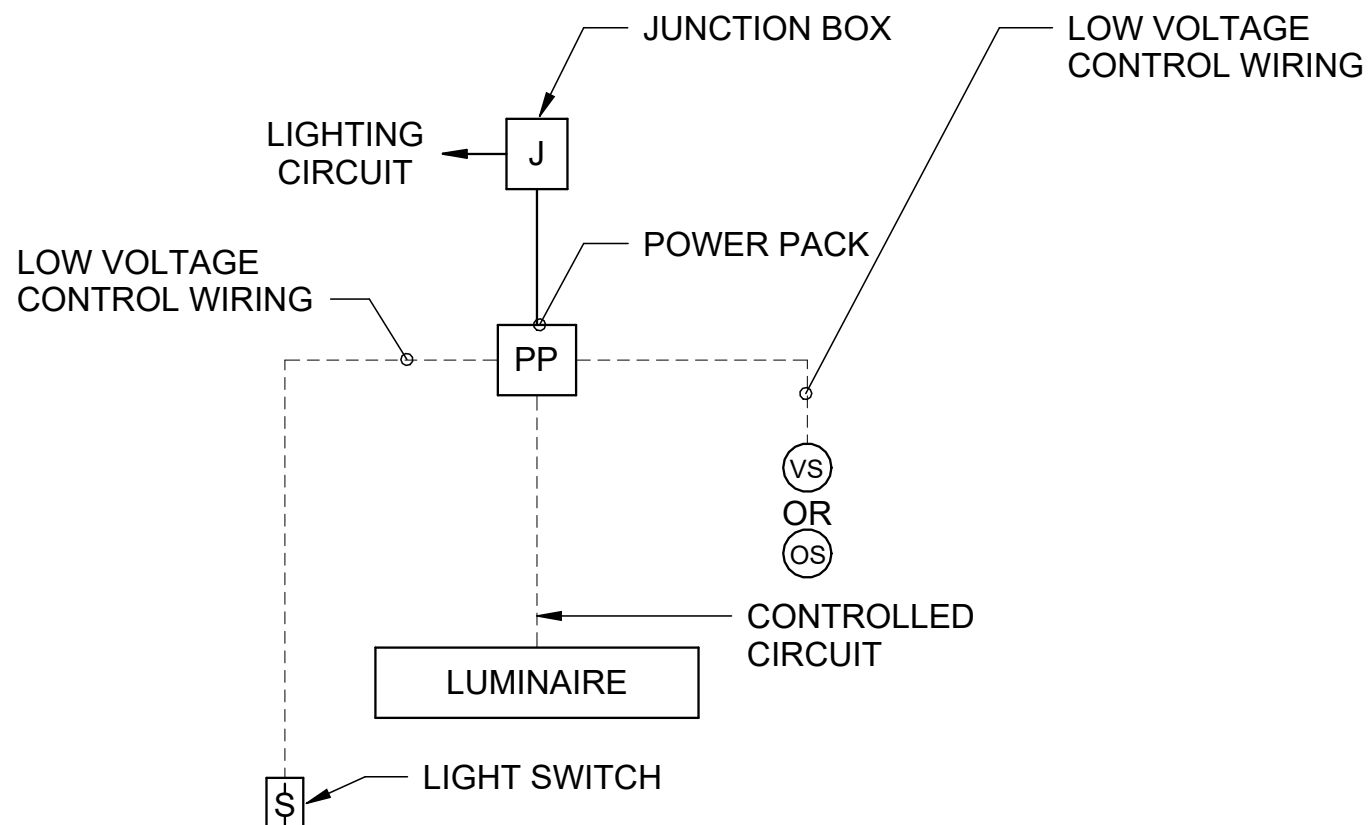
A1 MOUNTING HEIGHT DETAIL  
SCALE: NOT TO SCALE



NOTES

1. PROVIDE NAMEPLATES WITH SELF ADHESIVE BACKING WHEN INSTALLED ON LIVE FRONT EQUIPMENT.  
2. NAMEPLATES FOR DEAD FRONT EQUIPMENT MUST BE PERMANENTLY INSTALLED ON EQUIPMENT WITH STAINLESS STEEL SCREWS - ADHESIVE LABELS MUST NOT BE USED.  
3. BLACK MUST BE USED FOR NORMAL POWER SYSTEMS. NAMEPLATE CORE MUST BE WHITE OR OTHER CONTRASTING COLOR.

A3 EQUIPMENT LABEL  
SCALE: NOT TO SCALE



NOTE:

1. NEUTRAL CONDUCTORS AND EQUIPMENT GROUNDING CONDUCTORS ARE NOT SHOWN.

A4 LIGHTING CONTROL SCHEMATIC  
SCALE: NOT TO SCALE

SHEET NOTES

- 1. REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.

# KEYNOTES

- 1. DISCONNECT ALL BRANCH CIRCUITS FROM PANEL AND DISCONNECT PANEL FROM SOURCE. REMOVE PANEL AND RETURN TO OWNER.



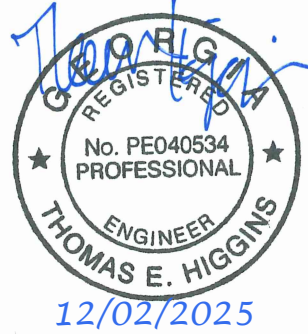
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COA

COA NAME: POND & COMPANY  
COA NUMBER: PEF00802  
COA EXPIRATION: 06/30/2026

EOR/AOR SEAL



CLIENT INFORMATION

CHATHAM AREA  
TRANSIT

PROJECT NAME

CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE

12/04/2025  
DATE

ISSUED FOR CONSTRUCTION  
DESCRIPTION

MARK

DESIGNED BY: MB  
DRAWN BY: MB  
CHECKED BY: GA  
SUBMITTED BY: CB  
DATE: 12/04/2025  
PROJECT #: 1230561

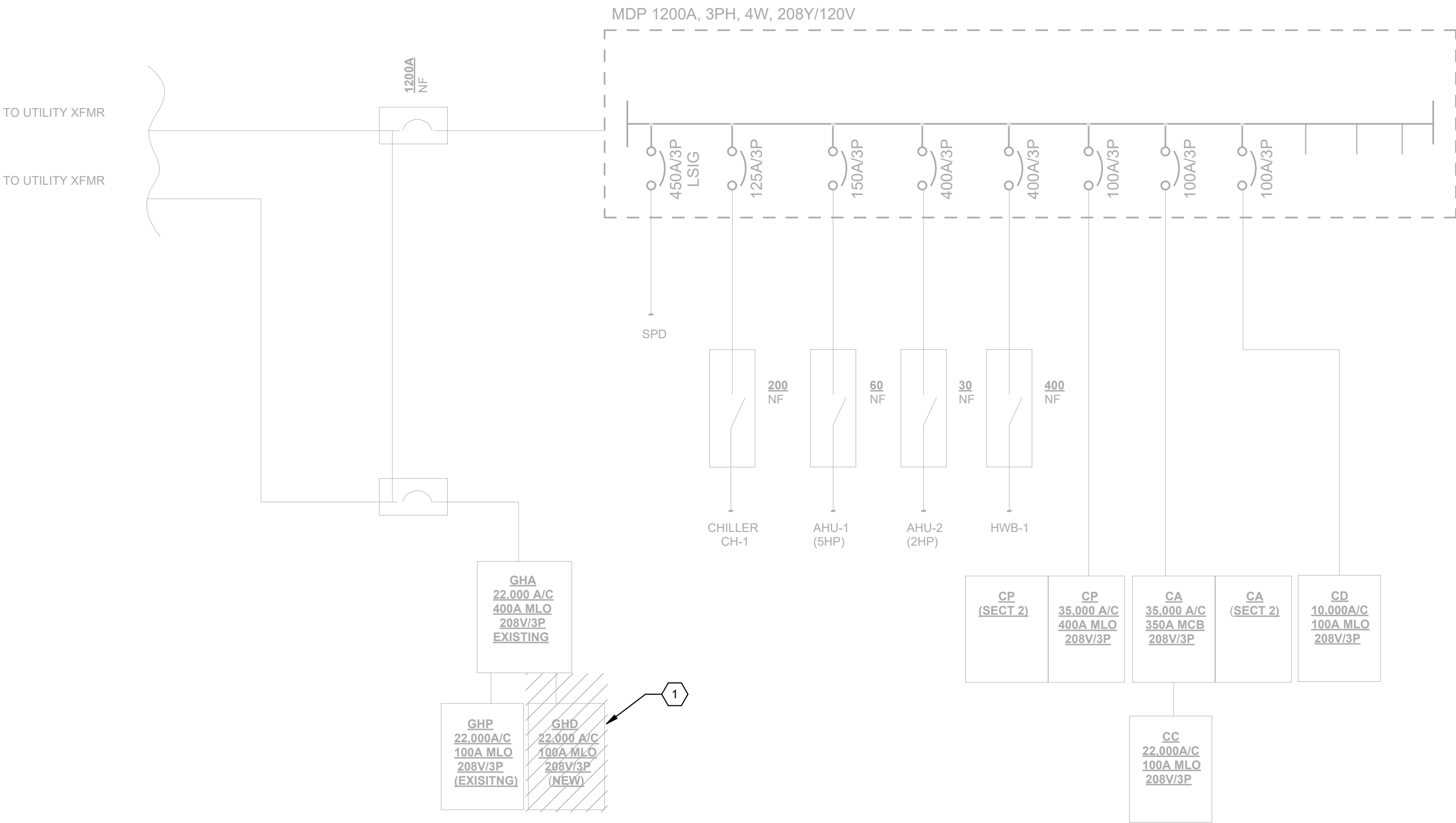
SHEET TITLE

ELECTRICAL  
ONE-LINE  
DIAGRAM

SHEET NUMBER

E-602

ORIGINAL SHEET SIZE:  
22" X 34"



A1 ELECTRICAL ONE-LINE DIAGRAM  
NOT TO SCALE

D

C

B

A

| LUMINAIRE SCHEDULE |                                                                                      |  |  |  |  |      |        |     |       |         |         |                   |                                                  |         |
|--------------------|--------------------------------------------------------------------------------------|--|--|--|--|------|--------|-----|-------|---------|---------|-------------------|--------------------------------------------------|---------|
| FIXTURE            | DESCRIPTION                                                                          |  |  |  |  | LAMP | LUMENS | CRI | CCT   | VOLTAGE | WATTAGE | MOUNTING          | MANUFACTURER                                     | NOTES   |
| A1                 | 2'x4' LED PANEL, SMOOTH WHITE FROSTED LENS, 0-10 DIMMING                             |  |  |  |  | LED  | 4500   | 80  | 4000K | UNIV    | 35 W    | RECESSED          | COOPER LIGHTING 24CGTX-45HE-840                  | 1,2     |
| A1E                | 2'x4' LED PANEL, SMOOTH WHITE FROSTED LENS, 0-10 DIMMING W/90-MINUTE BATTERY BACK-UP |  |  |  |  | LED  | 4500   | 80  | 4000K | UNIV    | 35 W    | RECESSED          | COOPER LIGHTING 24CGTX-45HE-840-EL7W             | 1,2,3,4 |
| D1                 | 6" RECESSED CAN LIGHT                                                                |  |  |  |  | LED  | 750    | 80  | 4000K | UNIV    | 8 W     | RECESSED          | COOPER LIGHTING HC607D010-HM6025 840-61 MDC      | 1,2     |
| L1                 | 5"X4' SUSPENDED PENDANT DIRECT STANDARD FLUSH LENS                                   |  |  |  |  | LED  | 1000   | 80  | 4000K | UNIV    | 38 W    | PENDANT 9' 6" AFF | COOPER LIGHTING S125DP-H1090D840-4F0-1E-UDD-F-B1 | 1,2     |
| L1E                | 5"X4' SUSPENDED PENDANT DIRECT STANDARD FLUSH LENS W/ BATTERY BACK-UP                |  |  |  |  | LED  | 4028   | 80  | 4000K | UNIV    | 38 W    | PENDANT 9' 6" AFF | COOPER LIGHTING S125DP-H1090D840-4F0-1E-UDD-F-B3 | 1,2,3,4 |
| X                  | LED EXIT SIGN W/90-MINUTE BATTERY BACK-UP                                            |  |  |  |  | LED  | -      | -   | -     | UNIV    | 1.03 W  | WALL 8' AFF       | COOPER LIGHTING AUXA                             | 1,3,4   |

- NOTES:
- DESIGN BASIS SHOWN FOR REFERENCE ONLY. FIXTURES OF EQUAL QUALITY AND PERFORMANCE ARE ACCEPTABLE. ALL FIXTURES MUST BE EQUAL IN MATERIAL, QUALITY, WARRANTY, PHOTOMETRIC, SIZE AND FINISH.
  - VERIFY CEILING TYPES WITH ARCHITECTURAL DRAWINGS PRIOR TO ORDERING.
  - WIRE EXIT SIGNS AND EMERGENCY BATTERY PACKS AHEAD OF ALL LOCAL SWITCHING.
  - ALL EMERGENCY AND EXIT LIGHTING MUST COMPLY WITH UL 924.

| LUMINAIRE CONTROL SCHEDULE |             |           |            |                            |                             |                     |                      |                    |                                                                                   |  |
|----------------------------|-------------|-----------|------------|----------------------------|-----------------------------|---------------------|----------------------|--------------------|-----------------------------------------------------------------------------------|--|
| SPACE TYPE                 | ROOM NUMBER | MANUAL ON | MANUAL OFF | LOW-VOLTAGE DIMMING SYSTEM | LINE VOLTAGE DIMMING SWITCH | OCCUPANCY SENSOR ON | OCCUPANCY SENSOR OFF | VACANCY SENSOR OFF | CONTROLS NARRATIVE                                                                |  |
|                            |             |           |            |                            |                             |                     |                      |                    |                                                                                   |  |
| BOARD ROOM                 | 001         | X         | X          |                            | X                           | X                   | X                    |                    | PROVIDE OCCUPANCY ON/OFF CEILING/WALL MOUNTED SENSOR(S) WITH LOCAL DIMMER SWITCH. |  |
| CORRIDOR                   | 004         | X         |            |                            |                             | X                   | X                    |                    | PROVIDE OCCUPANCY ON/OFF CEILING MOUNTED SENSOR(S) WITH LOCAL OVERRIDE SWITCH.    |  |
| CALL ROOM                  | 002         | X         |            |                            |                             | X                   | X                    |                    | PROVIDE OCCUPANCY ON/OFF CEILING MOUNTED SENSOR(S) WITH LOCAL OVERRIDE SWITCH.    |  |
| OFFICE 014                 | 014         | X         |            |                            |                             |                     |                      | X                  | PROVIDE VACANCY OFF CEILING/WALL MOUNTED SENSORS(S) WITH MANUAL ON SWITCH         |  |
| OFFICE 015                 | 015         | X         |            |                            |                             |                     |                      | X                  | PROVIDE VACANCY OFF CEILING/WALL MOUNTED SENSORS(S) WITH MANUAL ON SWITCH         |  |

SHEET NOTES

- REFER TO SHEETS E-001 & E-002 FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS & LEGEND.



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COA  
COA NAME: POND & COMPANY  
COA NUMBER: PEF000802  
COA EXPIRATION: 06/30/2026



CLIENT INFORMATION  
CHATHAM AREA  
TRANSIT

PROJECT NAME  
  
CAT ITC  
BOARD  
ROOM

610 WEST  
OGLETHORPE AVE  
SAVANNAH, GA 31401

DRAWING ISSUE  
12/04/2025  
DATE  
ISSUED FOR CONSTRUCTION  
DESCRIPTION  
MARK  
DESIGNED BY: AS  
DRAWN BY: AS  
CHECKED BY: GA  
SUBMITTED BY: CB  
DATE: 12/04/2025  
PROJECT #: 1230561

SHEET TITLE  
LUMINAIRE  
SCHEDULE

SHEET NUMBER  
E-611

ORIGINAL SHEET SIZE:  
22" X 34"

12/2/2025 2:17:03 PM Autocadsk Docs://1230561 CAT ITC Board Room/1230561\_CAT ITC\_MEPF\_v23.rvt

D

C

B

A

| PANELBOARD SCHEDULE: GHA |     |                     |       |                        |       |      |       |                              |       |      |      |      |                     |     |
|--------------------------|-----|---------------------|-------|------------------------|-------|------|-------|------------------------------|-------|------|------|------|---------------------|-----|
| LOCATION: Space 115      |     |                     |       | MAINS RATING: 400A MLO |       |      |       | MINIMUM BREAKER SCCR: 10,000 |       |      |      |      |                     |     |
| SUPPLY FROM:             |     |                     |       | VOLTAGE: 208Y/120      |       |      |       |                              |       |      |      |      |                     |     |
| MOUNTING: SURFACE        |     |                     |       | PHASES: 3              |       |      |       |                              |       |      |      |      |                     |     |
| ENCLOSURE: NEMA 1        |     |                     |       | WIRES: 4               |       |      |       |                              |       |      |      |      |                     |     |
|                          |     |                     |       | CONNECTED LOAD KVA     |       |      |       |                              |       |      |      |      |                     |     |
|                          | CKT | CIRCUIT DESCRIPTION | TRIP  | POLE                   | A     |      | B     |                              | C     |      | POLE | TRIP | CIRCUIT DESCRIPTION | CKT |
| --                       | 1   | EXISTING LOAD       | 25 A  | 2                      | 1.75  | 1.20 |       |                              |       |      | 1    | 20 A | EXISTING LOAD       | 2   |
| --                       | 3   | --                  | --    | --                     |       |      | 1.75  | 1.50                         |       |      | 1    | 20 A | EXISTING LOAD       | 4   |
| --                       | 5   | EXISTING LOAD       | 20 A  | 1                      |       |      |       |                              | 0.36  | 1.50 | 1    | 20 A | EXISTING LOAD       | 6   |
| --                       | 7   | EXISTING LOAD       | 20 A  | 1                      | 0.36  | 0.60 |       |                              |       |      | 1    | 20 A | EXISTING LOAD       | 8   |
| --                       | 9   | EXISTING LOAD       | 20 A  | 1                      |       |      | 0.20  | 0.60                         |       |      | 1    | 20 A | EXISTING LOAD       | 10  |
| --                       | 11  | GHP                 | 100 A | 3                      |       |      |       |                              | 6.88  | 0.60 | 1    | 20 A | EXISTING LOAD       | 12  |
| --                       | 13  | --                  | --    | --                     | 6.08  | 0.80 |       |                              |       |      | 1    | 20 A | EXISTING LOAD       | 14  |
| --                       | 15  | --                  | --    | --                     |       |      | 3.92  | 0.80                         |       |      | 1    | 20 A | EXISTING LOAD       | 16  |
| --                       | 17  | EXISTING LOAD       | 25 A  | 3                      |       |      |       |                              | 0.00  | 0.80 | 1    | 20 A | EXISTING LOAD       | 18  |
| --                       | 19  | --                  | --    | --                     | 0.00  | 0.50 |       |                              |       |      | 1    | 20 A | VAV-1-1, VAV-1-2    | 20  |
| --                       | 21  | --                  | --    | --                     |       |      | 0.00  | 0.50                         |       |      | 1    | 20 A | EXISTING LOAD       | 22  |
| --                       | 23  | SPARE               | 50 A  | 3                      |       |      |       |                              | 0.00  | 0.40 | 1    | 20 A | EXISTING LOAD       | 24  |
| --                       | 25  | --                  | --    | --                     | 0.00  | 0.60 |       |                              |       |      | 1    | 20 A | EXISTING LOAD       | 26  |
| --                       | 27  | --                  | --    | --                     |       |      | 0.00  | 1.20                         |       |      | 1    | 20 A | EXISTING LOAD       | 28  |
| --                       | 29  | EXISTING LOAD       | 20 A  | 1                      |       |      |       |                              | 2.20  | 1.20 | 1    | 20 A | EXISTING LOAD       | 30  |
| --                       | 31  | EXISTING LOAD       | 20 A  | 1                      | 1.00  | 1.20 |       |                              |       |      | 1    | 20 A | EXISTING LOAD       | 32  |
| --                       | 33  | EXISTING LOAD       | 30 A  | 1                      |       |      | 1.00  | 1.20                         |       |      | 1    | 20 A | EXISTING LOAD       | 34  |
| --                       | 35  | EXISTING LOAD       | 20 A  | 1                      |       |      |       |                              | 1.00  | 0.00 | 1    | 20 A | SPARE               | 36  |
| --                       | 37  | EXISTING LOAD       | 30 A  | 1                      | 2.88  | 0.00 |       |                              |       |      | 1    | 20 A | SPARE               | 38  |
| --                       | 39  | SPARE               | 20 A  | 1                      |       |      | 0.00  | 0.00                         |       |      | 1    | 20 A | SPARE               | 40  |
| --                       | 41  | SPARE               | 20 A  | 1                      |       |      |       |                              | 0.00  | 0.00 | 1    | 20 A | SPARE               | 42  |
| TOTAL LOAD:              |     |                     |       |                        | 24.76 |      | 18.67 |                              | 19.51 |      |      |      |                     |     |

NOTES: EXISTING LOAD WAS 56.44KVA. NEW LOAD IS 62.94KVA. A TOTAL OF 6.5KVA HAS BEEN ADDED.

| Load Classification               | Connected Load | Estimated Demand | Panel Totals                      |
|-----------------------------------|----------------|------------------|-----------------------------------|
| LTG                               | 0.46 kVA       | 0.46 kVA         | Total Conn. Load: 62.94 kVA       |
| Lighting                          | 0.00 kVA       | 0.00 kVA         | Total Est. Demand Load: 62.94 kVA |
| Other                             | 0.50 kVA       | 0.50 kVA         | Total Conn. Current: 175 A        |
| Recp - General Purpose            | 6.84 kVA       | 6.84 kVA         | Total Est. Demand Current: 175 A  |
| Recp - Specific Appliance or Load | 4.02 kVA       | 4.02 kVA         | Total Est. Design Current: 201 A  |
| Spare                             | 51.14 kVA      | 51.14 kVA        |                                   |

| PANELBOARD SCHEDULE: GHA |     |                           |      |                        |      |      |      |                              |      |                     |               |    |    |
|--------------------------|-----|---------------------------|------|------------------------|------|------|------|------------------------------|------|---------------------|---------------|----|----|
| LOCATION: Space 115      |     |                           |      | MAINS RATING: 400A MLO |      |      |      | MINIMUM BREAKER SCCR: 10,000 |      |                     |               |    |    |
| SUPPLY FROM: GHA         |     |                           |      | VOLTAGE: 208Y/120      |      |      |      |                              |      |                     |               |    |    |
| MOUNTING: SURFACE        |     |                           |      | PHASES: 3              |      |      |      |                              |      |                     |               |    |    |
| ENCLOSURE: NEMA 1        |     |                           |      | WIRES: 4               |      |      |      |                              |      |                     |               |    |    |
| CONNECTED LOAD KVA       |     |                           |      |                        |      |      |      |                              |      |                     |               |    |    |
|                          | CKT | CIRCUIT DESCRIPTION       | TRIP | POLE                   | A    | B    | C    | POLE                         | TRIP | CIRCUIT DESCRIPTION | CKT           |    |    |
|                          | 43  | EXISTING LOAD             | 20 A | 1                      | 1.50 | 2.40 |      |                              | 2    | 20 A                | EXISTING LOAD | 44 |    |
|                          | 45  | EXISTING LOAD             | 20 A | 1                      |      | 1.20 | 2.40 |                              | --   | --                  | --            | 46 | -- |
|                          | 47  | OFFICE 014 RECEPTACLES    | 20 A | 1                      |      |      | 0.72 | --                           | 1    | --                  | SPACE ONYL    | 48 |    |
|                          | 49  | OFFICE 015 RECEPTACLES    | 20 A | 1                      | 0.72 | --   |      |                              | 1    | --                  | SPACE ONYL    | 50 |    |
|                          | 51  | CALL ROOM 002 RECEPTACLES | 20 A | 1                      |      | 0.54 | --   |                              | 1    | --                  | SPACE ONYL    | 52 |    |
|                          | 53  | L6-20 RACK RECEPTACLE     | 20 A | 2                      |      |      | 1.66 | --                           | 1    | --                  | SPACE ONYL    | 54 |    |
| --                       | 55  | --                        | --   | --                     | 1.66 | --   |      |                              | 1    | --                  | SPACE ONYL    | 56 |    |
|                          | 57  | QUAD RACK RECEPTACLE      | 20 A | 1                      |      | 0.36 | --   |                              | 1    | --                  | SPACE ONYL    | 58 |    |
|                          | 59  | WORKSTATION POWER         | 20 A | 3                      |      |      | 0.50 | --                           | 1    | --                  | SPACE ONYL    | 60 |    |
| --                       | 61  | --                        | --   | --                     | 0.50 | --   |      |                              | 1    | --                  | SPACE ONYL    | 62 |    |
| --                       | 63  | --                        | --   | --                     |      | 0.50 | --   |                              | 1    | --                  | SPACE ONYL    | 64 |    |
|                          | 65  | WATER COOLER              | 20 A | 1                      |      |      | 0.69 | --                           | 1    | --                  | SPACE ONYL    | 66 |    |
|                          | 67  | WORKSTATION FURNITURE     | 20 A | 3                      | 0.50 | --   |      |                              | 1    | --                  | SPACE ONYL    | 68 |    |
| --                       | 69  | --                        | --   | --                     |      | 0.50 | --   |                              | 1    | --                  | SPACE ONYL    | 70 |    |
| --                       | 71  | --                        | --   | --                     |      |      | 0.50 | --                           | 1    | --                  | SPACE ONYL    | 72 |    |
|                          | 73  | WORKSTATION FURNITURE     | 20 A | 3                      | 0.50 | --   |      |                              | 1    | --                  | SPACE ONYL    | 74 |    |
| --                       | 75  | --                        | --   | --                     |      | 0.50 | --   |                              | 1    | --                  | SPACE ONYL    | 76 |    |
| --                       | 77  | --                        | --   | --                     |      |      | 0.50 | --                           | 1    | --                  | SPACE ONYL    | 78 |    |
|                          | 79  | SPARE                     | 20 A | 1                      | 0.00 | 0.00 |      |                              | 1    | 20 A                | SPARE         | 80 |    |
|                          | 81  | SPARE                     | 20 A | 1                      |      | 0.00 | 0.00 |                              | 1    | 20 A                | SPARE         | 82 |    |
|                          | 83  | SPARE                     | 20 A | 1                      |      |      | 0.00 | 0.00                         | 1    | 20 A                | SPARE         | 84 |    |
| TOTAL LOAD:              |     |                           |      |                        | 7.78 | 6.00 | 4.57 |                              |      |                     |               |    |    |

NOTES:

| Load Classification               | Connected Load | Estimated Demand | Panel Totals                      |
|-----------------------------------|----------------|------------------|-----------------------------------|
| Recp - Specific Appliance or Load | 4.02 kVA       | 4.02 kVA         | Total Conn. Load: 18.36 kVA       |
| Recp - General Purpose            | 6.84 kVA       | 6.84 kVA         | Total Est. Demand Load: 18.36 kVA |
|                                   |                |                  | Total Conn. Current: 51 A         |
|                                   |                |                  | Total Est. Demand Current: 51 A   |
|                                   |                |                  | Total Est. Design Current: 59 A   |

| PANELBOARD SCHEDULE: GHP |     |                     |      |                        |      |      |      |                              |      |                     |                             |               |    |  |
|--------------------------|-----|---------------------|------|------------------------|------|------|------|------------------------------|------|---------------------|-----------------------------|---------------|----|--|
| LOCATION: Space 118      |     |                     |      | MAINS RATING: 100A MLO |      |      |      | MINIMUM BREAKER SCCR: 22,000 |      |                     |                             |               |    |  |
| SUPPLY FROM: GHA         |     |                     |      | VOLTAGE: 208Y/120      |      |      |      |                              |      |                     |                             |               |    |  |
| MOUNTING: SURFACE        |     |                     |      | PHASES: 3              |      |      |      |                              |      |                     |                             |               |    |  |
| ENCLOSURE: NEMA 1        |     |                     |      | WIRES: 4               |      |      |      |                              |      |                     |                             |               |    |  |
| CONNECTED LOAD KVA       |     |                     |      |                        |      |      |      |                              |      |                     |                             |               |    |  |
|                          | CKT | CIRCUIT DESCRIPTION | TRIP | POLE                   | A    | B    | C    | POLE                         | TRIP | CIRCUIT DESCRIPTION | CKT                         |               |    |  |
|                          | 1   | EXISTING LOAD       | 20 A | 1                      | 1.39 | 1.35 |      |                              | 1    | 20 A                | EXISTING LOAD               | 2             |    |  |
|                          | 3   | EXISTING LOAD       | 20 A | 1                      |      | 1.39 | 1.30 |                              | 1    | 20 A                | EXISTING LOAD               | 4             |    |  |
|                          | 5   | EXISTING LOAD       | 20 A | 1                      |      |      |      | 1.39                         | 0.75 | 1                   | 20 A                        | EXISTING LOAD | 6  |  |
|                          | 7   | EXISTING LOAD       | 20 A | 1                      | 1.39 | 0.17 |      |                              | 1    | 20 A                | EXISTING LOAD               | 8             |    |  |
|                          | 9   | EXISTING LOAD       | 20 A | 1                      |      | 0.42 | 1.00 |                              | 1    | 20 A                | EXISTING LOAD               | 10            |    |  |
|                          | 11  | EXISTING LOAD       | 20 A | 1                      |      |      |      | 0.42                         | 1.00 | 1                   | 20 A                        | EXISTING LOAD | 12 |  |
|                          | 13  | EXISTING LOAD       | 20 A | 1                      | 0.42 | 1.36 |      |                              | 1    | 20 A                | EXISTING LOAD               | 14            |    |  |
|                          | 15  | EXISTING LOAD       | 20 A | 1                      |      | 0.42 | 1.11 |                              | 1    | 20 A                | EXISTING LOAD               | 16            |    |  |
|                          | 17  | EXISTING LOAD       | 20 A | 1                      |      |      | 0.00 | 0.36                         | 1    | 20 A                | EXISTING LOAD               | 18            |    |  |
|                          | 19  | SPARE               | 20 A | 1                      | 0.60 | 0.20 |      |                              | 1    | 20 A                | EXISTING LOAD               | 20            |    |  |
|                          | 21  | SPARE               | 20 A | 1                      |      | 0.00 | 0.46 |                              | 1    | 20 A                | LIGHTING CALL ROOM 002,.... | 22            |    |  |
|                          | 23  | SPARE               | 20 A | 1                      |      |      | 0.00 | 0.00                         | 1    | 20 A                | SPARE                       | 24            |    |  |
|                          | 25  | SPARE               | 20 A | 1                      | 0.00 | 0.00 |      |                              | 1    | 20 A                | SPARE                       | 26            |    |  |
|                          | 27  | SPARE               | 20 A | 1                      |      | 0.00 | 0.00 |                              | 1    | 20 A                | SPARE                       | 28            |    |  |
|                          | 29  | SPARE               | 20 A | 1                      |      |      | 0.00 | 0.00                         | 1    | 20 A                | SPARE                       | 30            |    |  |

NOTES: EXISTING LOAD WAS 16.52KVA. NEW LOAD IS 16.88KVA. A TOTAL OF 0.36KVA HAS BEEN ADDED.

| Load Classification | Connected Load | Estimated Demand | Panel Totals                      |
|---------------------|----------------|------------------|-----------------------------------|
| Lighting            | 0.00 kVA       | 0.00 kVA         | Total Conn. Load: 16.88 kVA       |
| LTG                 | 0.46 kVA       | 0.46 kVA         | Total Est. Demand Load: 16.88 kVA |
|                     |                |                  | Total Conn. Current: 47 A         |
|                     |                |                  | Total Est. Demand Current: 47 A   |
|                     |                |                  | Total Est. Design Current: 54 A   |

| PANELBOARD SCHEDULE: CP 2 |                               |      |      |                        |      |      |      |                              |                     |                    |    |  |  |
|---------------------------|-------------------------------|------|------|------------------------|------|------|------|------------------------------|---------------------|--------------------|----|--|--|
| LOCATION: ELEC 005        |                               |      |      | MAINS RATING: 400A MLO |      |      |      | MINIMUM BREAKER SCCR: 10,000 |                     |                    |    |  |  |
| SUPPLY FROM: CP           |                               |      |      | VOLTAGE: 208Y/120      |      |      |      |                              |                     |                    |    |  |  |
| MOUNTING: SURFACE         |                               |      |      | PHASES: 3              |      |      |      |                              |                     |                    |    |  |  |
| ENCLOSURE: NEMA 1         |                               |      |      | WIRES: 4               |      |      |      |                              |                     |                    |    |  |  |
| CONNECTED LOAD KVA        |                               |      |      |                        |      |      |      |                              |                     |                    |    |  |  |
| CKT                       | CIRCUIT DESCRIPTION           | TRIP | POLE | A                      | B    | C    | POLE | TRIP                         | CIRCUIT DESCRIPTION | CKT                |    |  |  |
| 43                        | EXISTING LOAD                 | 20 A | 1    | 1.46                   | 1.00 |      |      | 1                            | 20 A                | EXISTING LOAD      | 44 |  |  |
| 45                        | EXISTING LOAD                 | 20 A | 1    |                        | 0.86 | 1.00 |      | 1                            | 20 A                | EXISTING LOAD      | 46 |  |  |
| 47                        | EXISTING LOAD                 | 20 A | 1    |                        |      | 1.30 | 1.31 | 1                            | 20 A                | EXISTING LOAD      | 48 |  |  |
| 49                        | EXISTING LOAD                 | 20 A | 1    | 0.86                   | 0.52 |      |      | 1                            | 20 A                | BOARDROOM...       | 50 |  |  |
| 51                        | EXISTING LOAD                 | 20 A | 1    |                        | 1.30 | 0.56 |      | 1                            | 20 A                | BOARDROOM LIGHTING | 52 |  |  |
| 53                        | EXISTING LOAD                 | 20 A | 1    |                        |      | 1.30 | 0.75 | 1                            | 20 A                | EXISTING LOAD      | 54 |  |  |
| 55                        | EXISTING LOAD                 | 20 A | 1    | 1.73                   | 0.50 |      |      | 1                            | 20 A                | EXISTING LOAD      | 56 |  |  |
| 57                        | EXISTING LOAD                 | 20 A | 1    |                        | 1.73 | 0.00 |      | 1                            | 20 A                | SPARE              | 58 |  |  |
| 59                        | EXISTING LOAD                 | 20 A | 1    |                        |      | 0.86 | 1.20 | 1                            | 20 A                | EXISTING LOAD      | 60 |  |  |
| 61                        | EXISTING LOAD                 | 20 A | 1    | 1.30                   | 0.86 |      |      | 1                            | 20 A                | EXISTING LOAD      | 62 |  |  |
| 63                        | EXISTING LOAD                 | 20 A | 1    |                        | 0.86 | 0.53 |      | 1                            | 20 A                | EXISTING LOAD      | 64 |  |  |
| 65                        | EXISTING LOAD                 | 20 A | 1    |                        |      | 1.51 | --   | 1                            | --                  | SPACE              | 66 |  |  |
| 67                        | EXISTING LOAD                 | 20 A | 1    | 1.00                   | --   |      |      | 1                            | --                  | SPACE              | 68 |  |  |
| 69                        | EXISTING LOAD                 | 20 A | 1    |                        | 1.15 | --   |      | 1                            | --                  | SPACE              | 70 |  |  |
| 71                        | EXISTING LOAD                 | 20 A | 1    |                        |      | 0.86 | --   | 1                            | --                  | SPACE              | 72 |  |  |
| 73                        | EXISTING LOAD                 | 20 A | 1    | 0.55                   | --   |      |      | 1                            | --                  | SPACE              | 74 |  |  |
| 75                        | EXISTING LOAD                 | 20 A | 1    |                        | 0.55 | --   |      | 1                            | --                  | SPACE              | 76 |  |  |
| 77                        | CALL ROOM 002, OFFICES 014... | 20 A | 1    |                        |      | 0.91 | --   | 1                            | --                  | SPACE              | 78 |  |  |
| 79                        | MOTORIZED SCREEN              | 20 A | 1    | 0.18                   | 0.00 |      |      | 1                            | 20 A                | SPARE              | 80 |  |  |
| 81                        | SPARE                         | 20 A | 1    |                        | 0.00 | 0.00 |      | 1                            | 20 A                | SPARE              | 82 |  |  |
| 83                        | SPARE                         | 20 A | 1    |                        |      | 0.00 | 0.00 | 1                            | 20 A                | SPARE              | 84 |  |  |

[illegible]