



## **INVITATION TO BID**

**#21360**

**For**

### **INTERIOR RENOVATIONS TO H. B. BOOKER SCHOOL**

FOR THE CLEVELAND MUNICIPAL SCHOOL DISTRICT  
DBA: CLEVELAND METROPOLITAN SCHOOL DISTRICT  
BOARD OF EDUCATION, 1111 SUPERIOR AVENUE E, SUITE 1800  
CLEVELAND, OHIO 44114

UNDER THE DIRECTION OF OPERATIONS DEPARTMENT OF THE BOARD OF EDUCATION OF THE CLEVELAND  
METROPOLITAN SCHOOL DISTRICT - CUYAHOGA COUNTY, OHIO

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## Part I: ITB Submission & Process Requirements

Part I of the ITB provides a detailed set of directions which the service provider will use to prepare their bid.

Schedule for posting and contractor selection for the Interior Renovations to H.B. Booker School ITB 21360

Step	Date*
ITB Posted	August 29, 2022
Pre-Bid Meeting	September 1, 2022
All final questions from service providers to the District	September 6, 2022
Answers to service providers from the District and all addenda issued (if necessary)	September 7, 2022
ITB Responses Due	September 12, 2022
Bid Opening	September 12, 2022
Contract Negotiation	October 3 -October 7, 2022
Contract Start	October 15, 2022

\*Dates listed are subject to change at discretion of the District. Service Providers will be notified of changes to the schedule, as appropriate.

### Section A: Bid Submission & Format Requirements

#### Bid Submission Requirements

- a. In order for the District to evaluate bids fairly and completely, service providers should follow the format set forth herein and provide all of the information requested. The District discourages costly bids.
- b. All bids shall include all bid format requirements found below. All information requested in the district related forms must be filled in legibly and completely with blue ink signatures, or the bid may be considered non-responsive. **Interior Renovation for H.B. Booker School and #21360 must be on the outside of the envelope of submittals including shipping labels.**
- c. Sealed Responses are due at the Cashier's Office of the Cleveland Metropolitan School District, 1111 Superior Ave E. Cleveland, Ohio 44114 on or before 1:00 PM current local time on September 12, 2022. Mailing of Bids are encouraged. However, hand deliveries will be accepted from 12:00 PM to 1:00 PM on September 12, 2022. The bids will be opened following the bid cut off time at 1111 Superior Ave. E. Cleveland, Ohio 44114
- d. There will be a Pre-Bid Meeting at **4:30 PM on September 1, 2022**. The meeting will be held at **H.B. Booker School, 2121 W. 67<sup>th</sup> Street, Cleveland, OH 44102**. Attendance at the pre-bid is encouraged but not mandatory. Suppliers are encouraged to submit questions prior to the Pre-Bid Meeting so they may be addressed.
- e. All submissions must include one(1) original with blue signatures, one(1) copy, and one(1) electronic bid on a USB B Flash Drive. Original Copy should be easily identifiable. Electronic bid should include all documents. Service Providers not complying with this requirement shall be notified that they have twenty-four(24) hours in which to comply with this requirement or their bid may be disqualified. This applies to copies only. All materials are submitted as is.
- f. All written questions shall be directed to the Purchasing Division via email to: [dion.turner@clevelandmetroschools.org](mailto:dion.turner@clevelandmetroschools.org). Written questions will be accepted via email until 12:00 pm on September 6, 2022. Under no circumstances should any firm interested in providing the services identified in the ITB, their designees, or anyone affiliated with their firm, contact any other District employee or official during the ITB process, in an attempt to lobby or

or irregularities, and to disregard all non-conforming responsive conditional proposals. Each Proposer is liable for all proposal errors or omissions. A proposer shall not be permitted to alter or amend any proposal documents after the Proposal deadline time and date detailed in the RFP unless such is formally requested, in writing, by the District.

## **Bid Format Requirements**

- a. The Interior Renovations to H.B. Booker School specifications for ITB #21360 is described in Part III. Contractors are required to provide the information below as well as complete the District Related Forms in Appendix A.
- b. Bid Responses are to include the documents as follows:
  - i. **Transmittal Cover Letter:** Prepare a letter transmitting the bid on business letterhead. The letter should identify the business name, phone number, and business web address along with the name, phone number, and email address of the key contact person. The letter must have the signature of a person with authority to obligate the business. The transmittal cover letter shall also contain a statement that the bid is a firm offer for a ninety (90) day period.
  - ii. **Bid Cost Form,** including evidence of State certification to perform the work required.
  - iii. **Completed District Related Forms** set forth in Appendix A of this ITB.
  - iv. **Bid Guaranty:** A Certified Check for 10% of the total amount of the bid payable to the Treasurer of the Cleveland Metropolitan School District, or satisfactory bid bond executed by the bidder or a Surety company on a form supplied by the bondsman.

## **Section B: Bid Constraints**

- i. The service provider must comply with all laws, rules and regulations dictated by the Board of Education of the Cleveland Metropolitan School District, City of Cleveland, the State of Ohio and the United States Federal Government.
- ii. Purchases funded by federal grant funds must adhere to regulations found in Uniform Guidance “Super Circular”, 2 CFR 200 (UGG), as a condition of receiving funds and to meet annual audit compliance. In an effort to keep policy for all grants consistent, the District implemented the new federal guidelines regarding procurement utilized with federal grants immediately.
- iii. The District will only accept proposals that cover all of the major components requested in the RFP.
- iv. Service provider shall not include Ohio Sales Tax in the price quoted. The District will provide tax exempt certificate to the successful Proposer.
- v. Service provider’s personnel and subcontractors on the District site will be required to meet security requirements. Service provider agrees to successfully complete background checks on all of its employees, agents and subcontracts, if necessary, who provide services on site under this scope of work. Each person on site must wear an identification badge that clearly identifies and makes visible the person’s name and company.
- vi. No response may be withdrawn for at least ninety(90) days after receipt of bids.
- vii. Bidder understands and agrees that subsequent to submission of the bid, any District resolution authorizing the award of a contract or agreement does not vest any contractual rights to the bidder.
- viii. Bidder understands and agrees that such District resolution operates only to encumber funds necessary for the project and does not create a binding contract.
- ix. Bidder further acknowledges and agrees that any such District resolution may be revoked, at any time prior to execution of a formal, written contract.
- x. Bidder acknowledges and agrees that it has no vested contractual right until such time as a purchase order or contract have been issued.
- xi. Bidder further acknowledges and agrees that execution of a contract and issuance of a purchase order

- is not a ministerial function but is a formal requirement for acceptance of a bid.
- xii. Bidder must present evidence to the District, upon request, that they are fully competent and have the necessary facilities, equipment and financial resources to perform the work required in the specifications within the time frame required.
  - xiii. The District reserves the right to award the bid in whole or in parts, by item, by group of items, to a single service provider or to multiple service providers, where such action serves the best interests of the District.
  - xiv. The successful Service provider and their subcontractor(s), including organizations having personnel, equipment and vehicles on District property, shall provide evidence of insurance as follows:
    - a. Commercial General Liability Including limited contractual liability  
\$2,000,000.00 Limit of Liability  
(Per occurrence)
    - b. Automobile Liability Including non-owned and hired  
\$2,000,000.00 Limit of Liability  
(Per occurrence)
    - c. Worker’s Compensation Worker’s compensation and employer’s  
insurance to full extent required by applicable  
law
  - xv. This requirement must be fulfilled by the successful service provider providing the District with a current Certificate of Insurance (standard ACORD form), showing the Board of Education of the Cleveland Municipal School District as an additional insured (Certificate Holder does not constitute being an additional insured), within five(5) days of Notice of Intent to Award Agreement. The certificates of insurance shall contain a provision that the policy or policies shall not be cancelled without thirty (30) days’ prior written notice to the District.
  - xvi. The required insurance must be provided by a company licensed by the State of Ohio, which company must be financially acceptable to the Administration of the Cleveland Municipal School District
  - xvii. The District is not liable for vandalism which results in damage(s) to the property or vehicles of the Vendor. The school District will not reimburse for private insurance deductibles for such vandalism.
    - a. Vandalism damage is defined as damage resulting from criminal conduct for which an individual may (but not necessarily be processed under the Ohio Revised Code
  - xviii. In submitting a bid, service providers agree, unless specifically authorized in writing by an authorized representative of the District on a case by case basis, that it shall have no right to use, and shall not use, the name of Cleveland Metropolitan School District, its officials or employees, in any advertising, publicity, promotion, nor to express or imply any endorsement of service provider’s services.
  - xix. The Diversity Business and Service Provider Contract Compliance Programs shall make every good faith effort to ensure that certified diversity business enterprises in the District’s relevant geographic market area shall be afforded the maximum opportunity to compete for contracts, services, and purchases. The general goals for diversity business participation are: 15% for services, 20% for goods and supplies, and 30% for maintenance, construction, and repair. Non-diversity vendors will have their diversity business participation counted toward their goal attainment only with minority vendors who are certified and demonstrate previous experience in the respective business classification of the prime contractor. Only direct participation in the subcontract will be counted toward diversity business enterprise goal attainment. Service Providers shall refer to <https://bit.ly/3wvVApK> for further information and requirements on the District’s diversity goals.

**Section C: Evaluation Process**

- i. **Responsiveness:** Bids will be evaluated, first, as responsive or non-responsive to the Bid

specifications. A preliminary review will be conducted of all bids submitted on time to ensure the bid adheres to the material submission requirements specified in the Bid. Bids that do not meet the material submission requirements may be deemed non-responsive and rejected. In the event that all bidders do not meet one or more of the material submission requirements, the District reserves the right to continue the qualitative evaluation of the bids and select the bid(s) which most closely meets the specifications in the ITB. Bids must include, or meet, the following submission requirements:

- a. Timely Submission
  - b. Transmittal Cover Letter
  - c. Bid Cost Form
  - d. District Related Forms
  - e. Bid Guaranty
- ii. **Qualitative Evaluation** – The Bids will be evaluated to determine the lowest responsive and responsible bidder.

### **Section D: All District Related Forms**

There are a number of REQUIRED forms in Appendix A of the ITB that must be completed and submitted with the bid response. These forms include

- a. Addendum Acknowledgement
- b. Certificate of Debarment
- c. Conflict of Interest
- d. Proposer Qualification Form
- e. Non-Collusion Affidavit
- f. DBE Forms – A, B, C, D, E, F, G, & H
- g. EOA Contractual Declaration Forms
- h. References

### **Section E: Award of Contract**

- i. The terms of this agreement will begin immediately upon selection, approval, and contract execution through completion of the lowest responsive and responsible service provider.
- ii. The contract documents consist of the following:
  - a. District Contract
  - b. Certified Purchase Order or Supplier Contract
  - c. ITB Submission Requirements
  - d. Bid Cost Form
  - e. Bid Guaranty
  - f. All Required District Related Forms
  - g. All applicable addenda
- iii. The awarded bidder shall perform all work described in the contract documents, including without limitation, all terms and conditions of the specifications contained herein or otherwise stated in the bid documents and reasonably inferable therefrom by the bidder as necessary to produce the results intended thereby for specifications requested herein by the District.
- iv. CMSD reserves the right to reject all bids and deviate from this purchasing process to utilize other purchasing mechanisms available to the district under Ohio Law. Scope review and follow-up discussions with the apparent low bidder may be requested. CMSD reserves the right to interview or to seek additional information related to criteria already specified in the Invitation to Bid after opening the bids prior to issuance a certified Purchase Order or Supplier Contract

## **Part II: Overview, Background, and Specifications**

## Section A: Overview

The Cleveland Metropolitan School District (hereafter the "District") under ITB #21360 is seeking contractors to complete the Interior Renovations to H.B. Booker School.

The District is seeking a qualified contractor to furnish all labor, materials, and equipment necessary to renovate the interior for H.B. Booker School.

To facilitate submission and evaluation of bids, the following provides relevant background information and specifications. Instructions on how to submit a bid can be found in Part I. Contractors may submit a bid in response to the specifications below.

## Section B: Background

The District is a large urban school system with over 100 instructional non-instructional sites, approximately 6,000 teachers and administrative staff, 36,000 District students, and 3,500 classrooms.

## Section C: Specifications

### PHOTOGRAPHIC DOCUMENTATION

#### a) PART 1 – GENERAL

##### i) RELATED DOCUMENTS

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

##### ii) SUMMARY

- (1) Section includes administrative and procedural requirements for the following:

- (a) Preconstruction photographs.

- (2) Related Requirements:

- (a) Section 01732 "Selective Demolition" for photographic documentation before selective demolition operations commence.

##### iii) INFORMATIONAL SUBMITTALS

- (1) Digital Photographs: Submit image files within **three** days of taking photographs.

- (a) Digital Camera: Minimum sensor resolution of **8** megapixels.

- (b) Format: Minimum **3200 by 2400** pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.

- (c) Identification: Provide the following information with each image description in file metadata tag:

- (i) Name of Project.

- (ii) Name of Contractor.

- (iii) Date photograph was taken.

##### iv) USAGE RIGHTS

- (1) Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

b) PART 2 – PRODUCTS

i) PHOTOGRAPHIC MEDIA

- (1) Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of **8** megapixels, and at an image resolution of not less than **3200 by 2400** pixels.

c) PART 3 – EXECUTION

i) CONSTRUCTION PHOTOGRAPHS

- (1) General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
- (2) Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- (a) Date and Time: Include date and time in file name for each image.
- (b) Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- (3) Preconstruction Photographs: Before **commencement of demolition**, take photographs of Project site, including existing items to remain during construction, from different vantage points, as directed by **Architect**.

**SUBMITTAL PROCEDURES**

a) PART 1 – GENERAL

i) SUMMARY

- (1) Section Includes:
- (a) Submittal schedule requirements.
- (b) Administrative and procedural requirements for submittals.

ii) DEFINITIONS

- (1) 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."
- (2) 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."

iii) SUBMITTAL SCHEDULE

- (1) 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.

iv) SUBMITTAL FORMATS

- (1) Submittal Information: Include the following information in each submittal:
- (a) Project name.
- (b) Date.



- (c) Name of Architect.
  - (d) Name of Contractor.
  - (e) Name of firm or entity that prepared submittal.
  - (f) Names of subcontractor, manufacturer, and supplier.
  - (g) Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
  - (h) Category and type of submittal.
  - (i) Submittal purpose and description.
  - (j) Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
  - (k) Drawing number and detail references, as appropriate.
  - (l) Indication of full or partial submittal.
  - (m) Location(s) where product is to be installed, as appropriate.
  - (n) Other necessary identification.
  - (o) Remarks.
  - (p) Signature of transmitter.
- (2) Options: Identify options requiring selection by Architect.
- (3) 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.
- (4) Paper Submittals:
- (a) All submittals to be electronic except for material samples, initial color selection brochures, and similar.
  - (b) Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
  - (c) Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  - (d) Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies to the Contractor for distribution.
  - (e) Informational Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies to the Contractor for distribution.
  - (f) Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using facsimile of sample form included in Project Manual transmittal form.
- (5) PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

#### v) SUBMITTAL PROCEDURES

- (1) Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

- (a) 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.
- (b) Paper: Prepare submittals in paper form, and deliver to Architect.
- (2) Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - (a) Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - (b) Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  - (c) Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
- (3) 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.
  - (a) Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  - (b) Resubmittal Review: Allow 15 days for review of each resubmittal.
- (4) Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- (5) 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.
- (6) 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.

#### vi) SUBMITTAL REQUIREMENTS

- (1) Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - (a) If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
  - (b) Mark each copy of each submittal to show which products and options are applicable. Submittals with multiple products without job specific products marked as being provided for the project will be rejected. Products proposed for the project MUST be specifically marked in the submittals.
  - (c) Include the following information, as applicable:
    - (i) Manufacturer's catalog cuts.
    - (ii) Manufacturer's product specifications.
    - (iii) Standard color charts.
    - (iv) Statement of compliance with specified referenced standards.
    - (v) Testing by recognized testing agency.
    - (vi) Application of testing agency labels and seals.
    - (vii) Notation of coordination requirements.

- (viii) Availability and delivery time information.
- (d) For equipment, include the following in addition to the above, as applicable:
  - (i) Wiring diagrams that show factory-installed wiring.
  - (ii) Printed performance curves.
  - (iii) Operational range diagrams.
  - (iv) Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- (e) Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- (2) 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.
  - (a) Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - (i) Identification of products.
    - (ii) Schedules.
    - (iii) Compliance with specified standards.
    - (iv) Notation of coordination requirements.
    - (v) Notation of dimensions established by field measurement.
    - (vi) Relationship and attachment to adjoining construction clearly indicated.
    - (vii) Seal and signature of professional engineer if specified.
- (3) Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
  - (a) Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - (b) Identification: Permanently attach label on unexposed side of Samples that includes the following:
    - (i) Project name and submittal number.
    - (ii) Generic description of Sample.
    - (iii) Product name and name of manufacturer.
    - (iv) Sample source.
    - (v) Number and title of applicable Specification Section.
    - (vi) Specification paragraph number and generic name of each item.
  - (c) Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
  - (d) Paper Transmittal: Include paper transmittal including complete submittal information indicated.
  - (e) 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.
    - (i) 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.

- (ii) Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- (f) 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.
  - (i) 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.
- (g) 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.
  - (i) Number of Samples: Submit three sets of Samples. Architect will return two copies to the Contractor for distribution. Contractor to mark up and retain one returned Sample set as a project record Sample.
    - 1. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2. If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least two sets of paired units (of the five sets required) that show approximate limits of variations.
- (4) 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:
- (5) 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.
- (6) 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.
- (7) Certificates:
  - (a) 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.
  - (b) 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.
  - (c) 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.

- (d) Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- (e) Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- (f) Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

(8) Test and Research Reports:

- (a) Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- (b) 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.
- (c) 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.
- (d) 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.
- (e) 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.
- (f) 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:
  - (i) Name of evaluation organization.
  - (ii) Date of evaluation.
  - (iii) Time period when report is in effect.
  - (iv) Product and manufacturers' names.
  - (v) Description of product.
  - (vi) Test procedures and results.
  - (vii) Limitations of use.

vii) DELEGATED-DESIGN SERVICES

- (1) 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.
  - (a) If criteria indicated are insufficient to perform services or certification required, submit a

written request for additional information to Architect.

- (2) Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and five 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.
  - (a) 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.

viii) CONTRACTOR'S REVIEW

- (1) 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.
- (2) 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.
  - (a) Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

ix) ARCHITECT'S 'S REVIEW

- (1) Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.
  - (a) PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.
  - (b) Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- (2) 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.
- (3) Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- (4) Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- (5) Architect will return without review submittals received from sources other than Contractor.
- (6) Submittals not required by the Contract Documents will be returned by Architect without action.

**PRODUCT REQUIREMENTS**

a) PART 1 - GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

- (1) 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.

### iii) DEFINITIONS

- (1) 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.
  - (i) 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.
  - (ii) New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - (iii) Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- (2) Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.
- (3) Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

### iv) PRODUCT WARRANTIES

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

(c) See other Sections for specific content requirements and particular requirements for submitting special warranties.

(3) Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

b) PART 2 – PRODUCTS

i) PRODUCT SELECTION PROCEDURES

- (1) General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  - (a) Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  - (b) 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.
  - (c) Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
  - (d) Where products are accompanied by the term "as selected," Architect will make selection.
  - (e) Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  - (f) Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
    - (i) Submit additional documentation required by Architect in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.

**SELECTIVE DEMOLITION**

a) PART 1 – GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

(1) Section Includes:

- (a) Demolition and removal of selected portions of building or structure.
- (b) Salvage of existing items to be reused or recycled.

(2) Related Requirements:

- (a) Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
- (b) Section 017300 "Execution" for cutting and patching procedures.

iii) DEFINITIONS

- (1) Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- (2) Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- (3) Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage,



prepare for reuse, and reinstall where indicated.

- (4) Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- (5) 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.

iv) MATERIALS OWNERSHIP

- (1) Unless otherwise indicated, demolition waste becomes property of Contractor.

v) INFORMATIONAL SUBMITTALS

- (1) Qualification Data: For refrigerant recovery technician.
- (2) Schedule of Selective Demolition Activities: Indicate the following:
  - (a) Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
  - (b) Interruption of utility services. Indicate how long utility services will be interrupted.
  - (c) Coordination for shutoff, capping, and continuation of utility services.
  - (d) Use of elevator and stairs.
  - (e) Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- (3) Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- (4) Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

vi) CLOSEOUT SUBMITTALS

- (1) Inventory: Submit a list of items that have been removed and salvaged.

vii) FIELD CONDITIONS

- (1) Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- (2) Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- (3) Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- (4) Hazardous Materials: If present in building and structure are not in Contract.
  - (a) Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
  - (b) Owner will provide material safety data sheets as needed for suspected hazardous materials that are known to be present in buildings and structures if demolition is required because of building operations or processes performed there.
- (5) Storage or sale of removed items or materials on-site is not permitted.
- (6) Utility Service: Maintain existing utilities indicated to remain in service and protect them

against damage during selective demolition operations.

(a) Maintain fire-protection facilities in service during selective demolition operations.

viii) WARRANTY

(1) 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.

(2) 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.

ix) COORDINATION

(1) Arrange selective demolition schedule so as not to interfere with Owner's operations.

b) PART 2 – PRODUCTS

i) PERFORMANCE REQUIREMENTS

(1) Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

(2) Standards: Comply with ASSE A10.6 and NFPA 241.

c) PART 3 – EXECUTION

i) EXAMINATION

(1) Verify that utilities have been disconnected and capped before starting selective demolition operations.

(2) 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.

(3) 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.

(a) Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

(4) Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.

(5) Verify that hazardous materials have been remediated before proceeding with building demolition operations.

(6) Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.

(a) Comply with requirements specified in Section 013233 "Photographic Documentation."

(b) Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

(c) Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

ii) UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- (1) Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- (2) 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.
  - (a) Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - (b) Arrange to shut off utilities with utility companies.
  - (c) 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.
  - (d) Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    - (i) Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - (ii) Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    - (iii) Equipment to Be Removed: Disconnect and cap services and remove equipment.
    - (iv) Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    - (v) Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
    - (vi) Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    - (vii) Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

### iii) PROTECTION

- (1) Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - (a) Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - (b) 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.
  - (c) Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - (d) Cover and protect furniture, furnishings, and equipment that have not been removed.
  - (e) Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- (2) Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

- (a) Strengthen or add new supports when required during progress of selective demolition.
- (3) Remove temporary barricades and protections where hazards no longer exist.

iv) SELECTIVE DEMOLITION, GENERAL

- (1) 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:
  - (a) 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.
  - (b) 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.
  - (c) Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - (d) 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.
  - (e) Maintain fire watch during and for at least 2 hours after flame-cutting operations.
  - (f) Maintain adequate ventilation when using cutting torches.
  - (g) Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  - (h) Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - (i) Dispose of demolished items and materials promptly.
- (2) 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.
- (3) Removed and Salvaged Items:
  - (a) Clean salvaged items.
  - (b) Pack or crate items after cleaning. Identify contents of containers.
  - (c) Store items in a secure area until delivery to Owner.
  - (d) Transport items to Owner's storage area designated by Owner.
  - (e) Protect items from damage during transport and storage.
- (4) Removed and Reinstalled Items:
  - (a) Clean and repair items to functional condition adequate for intended reuse.
  - (b) Pack or crate items after cleaning and repairing. Identify contents of containers.
  - (c) Protect items from damage during transport and storage.
  - (d) 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.

- (5) Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

v) SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- (1) Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) 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.
- (2) 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.
- (3) Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- (4) Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- (5) 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.

vi) DISPOSAL OF DEMOLISHED MATERIALS

- (1) 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.
  - (a) Do not allow demolished materials to accumulate on-site.
  - (b) Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - (c) Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - (d) Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- (2) Burning: Do not burn demolished materials.

vii) CLEANING

- (1) 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.

**THERMAL INSULATION**

a) PART 1 – GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

- (1) Section Includes:

(a) Glass-fiber blanket.

(2) Related Requirements:

(a) Section 092900 "Gypsum Board" for sound attenuation blanket used as acoustic insulation.

iii) ACTION SUBMITTALS

(1) Product Data: For each type of product.

iv) INFORMATIONAL SUBMITTALS

(1) Product Test Reports: For each product, for tests performed by a qualified testing agency.

(2) Evaluation Reports: For foam-plastic insulation, from ICC-ES.

v) DELIVERY, STORAGE, AND HANDLING

(1) Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

(2) Protect foam-plastic board insulation as follows:

(a) Do not expose to sunlight except to necessary extent for period of installation and concealment.

(b) Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.

(c) Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

b) PART 2 – PRODUCTS

i) MINERAL-WOOL BLANKETS

(1) Recycled Content of Insulation: Postconsumer recycled content plus one-half of preconsumer recycled content not less than t percent.

(2) Mineral-Wool Blanket, Unfaced : ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

(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:

(i) Roxul Inc.

(ii) Thermafiber Inc.; an Owens Corning company.

(iii) Johns Manville

ii) INSULATION FASTENERS

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

(a) Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.

(b) Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.

(2) Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches square or in diameter.

(a) Protect ends with capped self-locking washers incorporating a spring steel insert to ensure

permanent retention of cap in the following locations:

- (i) Ceiling plenums.
- (ii) Attic spaces.
- (iii) Where indicated.

(3) Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.

iii) ACCESSORIES

(1) Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

c) PART 3 – EXECUTION

i) PREPARATION

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

ii) INSTALLATION, GENERAL

(1) Comply with insulation manufacturer's written instructions applicable to products and applications.

(2) Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

(3) Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

(4) Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

iii) INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

(1) Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

(a) Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.

(b) Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

(c) Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

(d) For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.

(i) Exterior Walls: Set units with facing placed toward interior of construction.

(ii) Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

iv) PROTECTION

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

## **JOINT SEALANTS**

### a) PART 1 – GENERAL

#### i) RELATED DOCUMENTS

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

#### ii) SUMMARY

- (1) Section Includes:

- (a) Latex joint sealants.

#### iii) ACTION SUBMITTALS

- (1) Product Data: For each joint-sealant product.

#### iv) QUALITY ASSURANCE

- (1) Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

- (2) Product Testing: Test joint sealants using a qualified testing agency.

#### v) FIELD CONDITIONS

- (1) Do not proceed with installation of joint sealants under the following conditions:

- (a) When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

- (b) When joint substrates are wet.

- (c) Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

- (d) Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

#### vi) WARRANTY

- (1) 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.

- (a) Warranty Period: Two years from date of Substantial Completion.

### b) PART 2 – PRODUCTS

#### i) LATEX JOINT SEALANTS

- (1) **AJS-1**: Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

- (a) Products: Subject to compliance with requirements, provide one of the following:

- (i) Pecora Corporation; AC-20.

- (ii) Tremco Incorporated; Tremflex 834.

- (iii) Bostik, Inc.

#### ii) MISCELLANEOUS MATERIALS

- (1) 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.

- (2) Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- (3) Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

c) PART 3 – EXECUTION

i) EXAMINATION

- (1) Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- (2) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) PREPARATION

- (1) 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:
  - (a) Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - (b) Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - (i) Concrete.
    - (ii) Masonry.
    - (iii) Unglazed surfaces of ceramic tile.
    - (iv) Exterior insulation and finish systems.
    - (v) Insert other porous joint substrate.
  - (c) Remove laitance and form-release agents from concrete.
  - (d) Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    - (i) Metal.
    - (ii) Glass.
    - (iii) Porcelain enamel.
    - (iv) Glazed surfaces of ceramic tile.
- (2) Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

- (3) Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### iii) INSTALLATION OF JOINT SEALANTS

- (1) General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- (2) Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- (3) 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.
  - (a) Do not leave gaps between ends of sealant backings.
  - (b) Do not stretch, twist, puncture, or tear sealant backings.
  - (c) Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- (4) Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- (5) Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - (a) Place sealants so they directly contact and fully wet joint substrates.
  - (b) Completely fill recesses in each joint configuration.
  - (c) Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- (6) Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - (a) Remove excess sealant from surfaces adjacent to joints.
  - (b) Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - (c) Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.
  - (d) Provide flush joint profile locations indicated on Drawings according to Figure 8B in ASTM C 1193.
  - (e) Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C 1193.
    - (i) Use masking tape to protect surfaces adjacent to recessed tooled joints.
- (7) Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

### iv) CLEANING

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

v) PROTECTION

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

## **HOLLOW METAL DOORS AND FRAMES**

a) PART 1 – GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

(1) Section includes hollow-metal work.

(2) Related Requirements:

(a) Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

iii) DEFINITIONS

(1) Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

iv) COORDINATION

(1) 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.

v) ACTION SUBMITTALS

(1) Product Data: For each type of product.

(a) Include construction details, material descriptions, core descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.

(2) Shop Drawings: Include the following:

(a) Elevations of each door type.

(b) Details of doors, including vertical- and horizontal-edge details and metal thicknesses.

(c) Frame details for each frame type, including dimensioned profiles and metal thicknesses.

(d) Locations of reinforcement and preparations for hardware.

(e) Details of each different wall opening condition.

(f) Details of anchorages, joints, field splices, and connections.

(g) Details of accessories.

(h) Details of moldings, removable stops, and glazing.

(i) Details of conduit and preparations for power, signal, and control systems.

- (3) Samples for Initial Selection: For units with factory-applied color finishes.
- (4) Samples for Verification:
  - (a) For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
  - (b) For "Doors" and "Frames" subparagraphs below, prepare Samples approximately 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:
    - (i) Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
    - (ii) Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.
- (5) Schedule: Provide a schedule of hollow-metal work 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.

vi) INFORMATIONAL SUBMITTALS

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

vii) DELIVERY, STORAGE, AND HANDLING

- (1) Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
  - (a) Provide additional protection to prevent damage to factory-finished units.
- (2) Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- (3) Store hollow-metal work 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.

b) PART 2 – PRODUCTS

i) MANUFACTURERS

- (1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - (a) Amweld International, LLC.
  - (b) Ceco Door; ASSA ABLOY.
  - (c) Curries Company; ASSA ABLOY.
  - (d) Steelcraft; an Ingersoll-Rand company.
- (2) Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

ii) REGULATORY REQUIREMENTS

- (1) Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings[ and temperature-rise limits] indicated, based on testing at positive pressure according to NFPA 252

or UL 10C.

(a) Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

(2) Fire-Rated, Borrowed-Lite Assemblies: Complying with NFPA 80 and listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.

iii) INTERIOR DOORS AND FRAMES

(1) Construct interior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

(2) Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3. At locations indicated in the Door and Frame Schedule.

(a) Frames:

(i) Construction: Full profile welded.

(3) Construction: Full profile welded.

iv) FRAME ANCHORS

(1) Jamb Anchors:

(a) Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.

(b) Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.

(c) Post installed Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

(2) Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:

(a) Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

v) MATERIALS

(1) Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

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

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

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

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

(5) 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.

- (6) Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- (7) Glazing: Comply with requirements in Section 088000 "Glazing."
- (8) Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

vi) FABRICATION

- (1) Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- (2) Hollow-Metal Doors:
  - (a) Steel-Stiffened Door Cores: Provide minimum thickness 0.026 inch, steel vertical stiffeners of same material as face sheets extending full-door height, with vertical webs spaced not more than 6 inches apart. Spot weld to face sheets no more than 5 inches o.c. Fill spaces between stiffeners with glass- or mineral-fiber insulation.
  - (b) Fire Door Cores: As required to provide fire-protection[ and temperature-rise] ratings indicated.
  - (c) Vertical Edges for Single-Acting Doors: Provide beveled or square edges at manufacturer's discretion.
  - (d) Top Edge Closures: Close top edges of doors with inverted closures of same material as face sheets.
  - (e) Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.
  - (f) Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.
- (3) Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
  - (a) Sidelite Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
  - (b) Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
  - (c) Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
  - (d) Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
  - (e) Jamb Anchors: Provide number and spacing of anchors as follows:
    - (i) Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:
      1. Two anchors per jamb up to 60 inches high.

2. Three anchors per jamb from 60 to 90 inches high.
  3. Four anchors per jamb from 90 to 120 inches high.
  4. Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
- (ii) Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
1. Three anchors per jamb up to 60 inches high.
  2. Four anchors per jamb from 60 to 90 inches high.
  3. Five anchors per jamb from 90 to 96 inches high.
  4. Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
- (iii) Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
- (f) Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
- (i) Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
  - (ii) Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- (g) Terminated Stops: Terminate stops 6 inches above finish floor with a 45 -degree angle cut, and close open end of stop with steel sheet closure. Cover opening in extension of frame with welded-steel filler plate, with welds ground smooth and flush with frame.
- (4) Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.
- (5) Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
- (a) Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
  - (b) Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.
- (6) Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with mitered hairline joints.
- (a) Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
  - (b) Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
  - (c) Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
  - (d) Provide loose stops and moldings on inside of hollow-metal work.
  - (e) Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

vii) STEEL FINISHES

- (1) Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
  - (a) 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.

(2) ACCESSORIES

- (a) Louvers: Provide louvers for interior doors, where indicated, which comply with SDI 111C, with blades or baffles formed of 0.020-inch-thick, cold-rolled steel sheet set into 0.032-inch-thick steel frame.
  - (i) Sightproof Louver: Stationary louvers constructed with inverted-V or inverted-Y blades.
  - (ii) Lightproof Louver: Stationary louvers constructed with baffles to prevent light from passing from one side to the other.
  - (iii) Fire-Rated Automatic Louvers: Louvers constructed with movable blades closed by actuating fusible link, and listed and labeled for use in fire-rated door assemblies of type and fire-resistance rating indicated by same qualified testing and inspecting agency that established fire-resistance rating of door assembly.
- (b) Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- (c) Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

c) PART 3 – EXECUTION

i) EXAMINATION

- (1) Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- (2) Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- (3) Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- (4) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) PREPARATION

- (1) 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.
- (2) Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

iii) INSTALLATION

- (1) General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.
- (2) Hollow-Metal Frames: Install hollow-metal frames for doors, transoms, sidelites, borrowed lites, and other openings, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
  - (a) Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
    - (i) At fire-rated openings, install frames according to NFPA 80.
    - (ii) Where frames are fabricated in sections because of shipping or handling limitations,



field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.

- (iii) Install frames with removable stops located on secure side of opening.
  - (iv) Install door silencers in frames before grouting.
  - (v) Remove temporary braces necessary for installation only after frames have been properly set and secured.
  - (vi) Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
  - (vii) Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.
- (b) Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
- (i) Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
- (c) Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
- (d) Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
- (e) Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
- (f) 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.
- (g) In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
- (h) Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
- (i) Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
  - (ii) Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
  - (iii) Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
  - (iv) Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- (3) Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
- (a) Non-Fire-Rated Steel Doors:
    - (i) Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
    - (ii) Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
    - (iii) At Bottom of Door: 3/4 inch plus or minus 1/32 inch.
    - (iv) Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
  - (b) Fire-Rated Doors: Install doors with clearances according to NFPA 80
  - (c) Smoke-Control Doors: Install doors and gaskets according to NFPA 105.
- (4) Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-

metal manufacturer's written instructions.

- (a) Secure stops 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.

iv) ADJUSTING AND CLEANING

- (1) Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- (2) Remove grout and other bonding material from hollow-metal work immediately after installation.
- (3) 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.
- (4) Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- (5) Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

**FLUSH WOOD DOORS**

a) PART 1 - GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

(1) Section Includes:

- (a) Solid-core doors with wood-veneer faces.
- (b) Factory finishing flush wood doors.
- (c) Factory fitting flush wood doors to frames and factory machining for hardware.

(2) Related Requirements:

- (a) Section 088000 "Glazing" for glass view panels in flush wood doors.
- (b) Section 081113 "Hollow Metal Doors and Frames" for hollow metal frames.

iii) ACTION SUBMITTALS

- (1) Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.
- (2) Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
  - (a) Dimensions and locations of blocking.
  - (b) Dimensions and locations of mortises and holes for hardware.
  - (c) Dimensions and locations of cutouts.
  - (d) Undercuts.
  - (e) Requirements for veneer matching.
  - (f) Doors to be factory finished and finish requirements.
  - (g) Fire-protection ratings for fire-rated doors.
- (3) Samples for Initial Selection: For factory-finished doors.

(4) Samples for Verification:

- (a) Factory finishes applied to actual door face materials, approximately 8 by 10 inches (200 by 250 mm), for each material and finish. For each wood species and transparent finish, provide set of three Samples showing typical range of color and grain to be expected in finished Work.
- (b) Corner sections of doors, approximately 8 by 10 inches (200 by 250 mm), with door faces and edges representing actual materials to be used.
  - (i) Provide Samples for each species of veneer and solid lumber required.
  - (ii) Provide Samples for each color, texture, and pattern of plastic laminate required.
  - (iii) Finish veneer-faced door Samples with same materials proposed for factory-finished doors.

iv) QUALITY ASSURANCE

- (1) Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- (2) Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

v) DELIVERY, STORAGE, AND HANDLING

- (1) Comply with requirements of referenced standard and manufacturer's written instructions.
- (2) Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting.
- (3) Mark each door on bottom rail with opening number used on Shop Drawings.

vi) FIELD CONDITIONS

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

b) PART 2 – PRODUCTS

i) MANUFACTURERS

- (1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - (a) Algoma Hardwoods, Inc.
  - (b) Eggers Industries.
  - (c) Graham Wood Doors; an Assa Abloy Group company.
  - (d) Mohawk Doors; a Masonite company.
  - (e) VT Industries, Inc

ii) FLUSH WOOD DOORS, GENERAL

- (1) Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."
  - (a) Contract Documents contain selections chosen from options in quality standard and additional requirements beyond those of quality standard. Comply with those selections and requirements in addition to quality standard.
- (2) Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.
- (3) WDMA I.S.1-A Performance Grade: Extra Heavy Duty.

- (4) WDMA I.S.1-A Performance Grade:
- iii) VENEER-FACED DOORS FOR TRANSPARENT FINISH
  - (1) Interior Solid-Core Doors SCW:
    - (a) Grade: Custom (Grade A faces).
    - (b) Species: Match existing.
    - (c) Cut: Plain sliced (flat sliced).
    - (d) Match between Veneer Leaves: Book match.
    - (e) Assembly of Veneer Leaves on Door Faces: Running match.
    - (f) Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
    - (g) Room Match: Provide door faces of compatible color and grain within each separate room or area of building.
    - (h) Core: Particleboard or Either glued wood stave or structural composite lumber.
    - (i) Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.
    - (j) Construction: Seven plies, either bonded or nonbonded construction.
    - (k) WDMA I.S.1-A Performance Grade: Extra Heavy Duty .
- iv) FABRICATION
  - (1) Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
    - (a) Comply with NFPA 80 requirements for fire-rated doors.
  - (2) Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
    - (a) Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
  - (3) Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.
    - (a) Fabricate door and transom panels with full-width, solid-lumber, rabbeted, meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal door frames.
  - (4) Openings: Factory cut and trim openings through doors.
    - (a) Light Openings: Trim openings with moldings of material and profile indicated.
    - (b) Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."
    - (c) Louvers: Factory install louvers in prepared openings.
- v) FACTORY FINISHING
  - (1) General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
    - (a) Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
  - (2) Factory finish doors.
  - (3) Transparent Finish:
    - (a) Grade: Premium.
    - (b) Finish: WDMA TR-6 catalyzed polyurethane.
    - (c) Staining: Match existing doors.
    - (d) Effect: Semi-filled finish, produced by applying an additional finish coat to partially fill the

wood pores.

(e) Sheen: Satin.

c) PART 3 – EXECUTION

i) EXAMINATION

(1) Examine doors and installed door frames, with Installer present, before hanging doors.

(a) 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.

(b) Reject doors with defects.

(c) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) INSTALLATION

(1) Hardware: For installation, see Section 087100 “Door Hardware”

(2) Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as

(a) Install fire-rated doors according to NFPA 80.

(3) Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

(4) Factory-Finished Doors: Restore finish before installation if fitting or machining is required at project site.

iii) ADJUSTING

(1) Operation: Rehang or replace doors that do not swing or operate freely.

(2) 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.

**DOOR HARDWARE**

a) PART 1 – GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

(1) Section includes:

(a) Mechanical door hardware for:

(i) Swinging doors.

(b) Field verification, preparation and modification of existing doors and frames to receive new door hardware.

(2) Related Sections:

(a) Division 08 Section “Hollow Metal Doors and Frames”

(b) Division 08 Section “Flush Wood Doors”

iii) REFERENCES

(1) Fire/Life Safety

(a) NFPA - National Fire Protection Association

(i) NFPA 70 – National Electric Code

(ii) NFPA 80 - Standard for Fire Doors and Fire Windows

- (iii) NFPA 101 - Life Safety Code
  - (iv) NFPA 105 - Smoke and Draft Control Door Assemblies
- (b) Ohio Building Code (OBC)
- (c) All applicable State and Local Building Codes.
- (2) UL - Underwriters Laboratories
  - (a) UL 10B - Fire Test of Door Assemblies
  - (b) UL 10C - Positive Pressure Test of Fire Door Assemblies
  - (c) UL 1784 - Air Leakage Tests of Door Assemblies
  - (d) UL 305 - Panic Hardware
- (3) Accessibility
  - (a) ADA - Americans with Disabilities Act.
  - (b) ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- (4) DHI - Door and Hardware Institute
  - (a) Sequence and Format for the Hardware Schedule
  - (b) Recommended Locations for Builders Hardware
  - (c) Key Systems and Nomenclature
- (5) ANSI - American National Standards Institute
  - (a) ANSI/BHMA A156.1 - A156.29, and ANSI A156.31 - Standards for Hardware and Specialties
- iv) SUBMITTALS
  - (1) General:
    - (a) Submit in accordance with Conditions of Contract and Division 01 requirements.
    - (b) Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
    - (c) Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.
  - (2) Action Submittals:
    - (a) Product Data: Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
    - (b) Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
      - (i) Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
    - (c) Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:
      - (i) Door Index; include door number, heading number, and Architects hardware set

number.

- (ii) Opening Lock Function Spreadsheet: List locking device and function for each opening.
- (iii) Type, style, function, size, and finish of each hardware item.
- (iv) Name and manufacturer of each item.
- (v) Fastenings and other pertinent information.
- (vi) Location of each hardware set cross-referenced to indications on Drawings.
- (vii) Explanation of all abbreviations, symbols, and codes contained in schedule.
- (viii) Mounting locations for hardware.
- (ix) Door and frame sizes and materials.
- (x) Name and phone number for local manufacturer's representative for each product.
- (xi) Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.

- 1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

- (d) Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

(3) Informational Submittals:

- (a) Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
- (b) Product Certificates for electrified door hardware, signed by manufacturer:
  - (i) Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

(4) Closeout Submittals:

- (a) Operations and Maintenance Data : Provide in accordance with Division 01 and include:
  - (i) Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
  - (ii) Catalog pages for each product.
  - (iii) Name, address, and phone number of local representative for each manufacturer.
  - (iv) Parts list for each product.
  - (v) Final approved hardware schedule, edited to reflect conditions as-installed.
  - (vi) Final keying schedule
  - (vii) Copies of floor plans with keying nomenclature
  - (viii) As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
  - (ix) Copy of warranties including appropriate reference numbers for manufacturers to identify project.

v) QUALITY ASSURANCE

- (1) Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.
  - (a) Where specific manufacturer's product is named and accompanied by "No Substitute," including make or model number or other designation, provide product specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)
    - (i) Where no additional products or manufacturers are listed in product category, requirements for "No Substitute" govern product selection.
  - (b) Where products indicate "acceptable manufacturers" or "acceptable manufacturers and products", provide product from specified manufacturers, subject to compliance with specified requirements and "Single Source Responsibility" requirements stated herein.
- (2) Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
  - (a) Warehousing Facilities: In Project's vicinity.
  - (b) Scheduling Responsibility: Preparation of door hardware and keying schedules.
  - (c) Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
  - (d) Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
    - (i) Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
- (3) Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.
- (4) Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
  - (a) For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
  - (b) Can provide installation and technical data to Architect and other related subcontractors.
  - (c) Can inspect and verify components are in working order upon completion of installation.
  - (d) Capable of producing wiring diagrams.
  - (e) Capable of coordinating installation of electrified hardware with Architect and electrical engineers.
- (5) Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.
- (6) Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.
  - (a) Provide operating devices that do not require tight grasping, pinching, or twisting of wrist



and that operate with force of not more than 5 lbf (22.2 N).

(b) Maximum opening-force requirements:

- (i) Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
- (ii) Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
- (iii) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

(c) Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

(d) Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.

vi) DELIVERY, STORAGE, AND HANDLING

(1) Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

(2) Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

(a) Deliver each article of hardware in manufacturer's original packaging.

(3) Project Conditions:

(a) Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

(b) Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

(4) Protection and Damage:

(a) Promptly replace products damaged during shipping.

(b) Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.

(c) Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

vii) COORDINATION

(1) Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.

(2) Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

(3) Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

(4) Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

(5) Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

(6) Direct shipments not permitted, unless approved by Contractor.

b) PART 2 – PRODUCTS

i) MANUFACTURERS

(1) The Owner requires use of certain products for their unique characteristics and particular project suitability to insure continuity of existing and future performance and maintenance standards. After investigating available product offerings Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: “No Substitute.”

(a) Where “No Substitute” is noted, submittals and substitution requests for other products will not be considered.

(2) Approval of manufacturers and/or products other than those listed as “Scheduled Manufacturer” or “Acceptable Manufacturers” in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

(3) Approval of products from manufacturers indicated in “Acceptable Manufacturers” is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

Item	Scheduled Manufacturer	Acceptable Manufacturer
Hinges	Ives (IVE)	Hager, McKinney
Continuous Hinges	Ives (IVE)	Hager, McKinney
Electric Power Transfers	Von Duprin (VON)	Owners Standard - No Substitutions
Flush Bolts & Coordinators	Ives (IVE)	Hager, Rockwood
Locksets	Schlage (SCH)	Best, Sargent
Cylinders/Cores/Keying	Schlage (SCH) - Everest D	Owners Standard - No Substitutions
Exit Devices	Von Duprin	Precision, Sargent
Electric Strikes	Von Duprin	Folger Adams, HES
Power Supplies	Von Duprin	Precision, Sargent
Door Closers	LCN	Sargent, Stanley
Auto Operators	LCN	Owners Standard - No Substitutions
Door Trim	Ives (IVE)	Hager, Rockwood
Protection Plates	Ives (IVE)	Hager, Rockwood
Overhead Stops	Glynn-Johnson (GLY)	Rixson, ABH
Stops & Holders	Ives (IVE)	Hager, Rockwood
Magnetic Wall Holders	LCN	Rixson, ABH
Silencers	Ives (IVE)	Hager, Rockwood
Weatherstrip/Gasketing	Zero (ZER)	Hager, NGP, Pemko
Key Cabinets	Lund (LUN)	HPC, Telkee

(4) Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

(5) Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

ii) MATERIALS

(1) Fasteners

(a) Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.

(b) Furnish screws for installation with each hardware item. Finish exposed (exposed under

any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.

- (c) Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
- (d) Install hardware with fasteners provided by hardware manufacturer.

(2) Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.

- (a) Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
- (b) Use materials which match materials of adjacent modified areas.
- (c) When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

(3) Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

- (a) Where fasteners are exposed to view: Finish to match adjacent door hardware material.

### iii) HINGES

(1) Provide three-knuckle, ball bearing hinges.

(a) Manufacturers and Products:

- (i) Scheduled Manufacturer and Product: Ives 5BB1 series
- (ii) Acceptable Manufacturers and Products: Hager BB series, McKinney TB/T4B series,

(2) Requirements:

(a) 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

- (i) Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
- (ii) Interior: Standard weight, steel, 4-1/2 inches (114 mm) high

(b) Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.

(c) Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.

(d) Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

- (i) Steel Hinges: Steel pins
- (ii) Non-Ferrous Hinges: Stainless steel pins
- (iii) Out-Swinging Exterior Doors: Non-removable pins
- (iv) Out-Swinging Interior Lockable Doors: Non-removable pins
- (v) Interior Non-lockable Doors: Non-rising pins

(e) Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.

- (f) Doors 36 inches (914 mm) wide or less furnish hinges 4-1/2 inches (114 mm) high; doors greater than 36 inches (914 mm) wide furnish hinges 5 inches (127 mm) high, heavy weight or standard weight as specified.
- (g) Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
- (h) Provide mortar guard for each electrified hinge specified, unless specified in hollow metal frame specification.
- (i) Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches (2286 mm) or less in height. Provide one additional bearing hinge for each 30 inches (762 mm) of additional door height.
- (j) mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

#### iv) MORTISE LOCKS

##### (1) Manufacturers and Products:

- (a) Scheduled Manufacturer and Product: Schlage L9000 series
- (b) Acceptable Manufacturers and Products: Best 45H series, Sargent 8200 series

##### (2) Requirements:

- (a) Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1 Operational, Grade 1 Security, and manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
- (b) Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
- (c) Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
- (d) Provide electrified options as scheduled in the hardware sets. Where scheduled, provide a request to exit (RX) switch that is actuated with rotation of inside lever.
- (e) Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
  - (i) Lever Design: Schlage 06A.
  - (ii) Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

#### v) CYLINDERS

##### (1) Manufacturer:

- (a) Scheduled Manufacturer: Schlage "Everest D", Owner's District Wide Standard, NO SUBSTITUTIONS.

##### (2) Requirements: Provide cylinders/cores complying with the following requirements.

- (a) Cylinders/cores compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer's series as indicated.
- (3) Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Blind code marks shall not include actual key cuts.
- (4) Replaceable Construction Cores.
  - (a) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
  - (b) Owner or Owner's Representative will replace temporary construction cores with permanent cores.

vi) KEYING

(1) Requirements:

- (a) Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
  - (i) Keying system as directed by the Owner.

vii) SILENCERS

(1) Manufacturers:

- (a) Scheduled Manufacturer: Ives
- (b) Acceptable Manufacturers: Hager, Rockwood

(2) Requirements:

- (a) Provide "push-in" type silencers for hollow metal or wood frames.
- (b) Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
- (c) Omit where gasketing is specified.

c) PART 3 – EXECUTION

i) EXAMINATION

- (1) Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- (2) Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
- (3) Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- (4) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) PREPARATION

- (1) Where on-site modification of doors and frames is required:
  - (a) Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
  - (b) Field modify and prepare existing door and frame for new hardware being installed.
  - (c) When modifications are exposed to view, use concealed fasteners, when possible.

- (d) Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
  - (i) Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
  - (ii) Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
  - (iii) Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

iii) INSTALLATION

- (1) All hardware will be installed by qualified tradesmen, skilled in application of commercial grade hardware. A pre-installation meeting shall be conducted by the manufacturer's representative. The manufacturer's representative shall also conduct a post construction review of all doors as part of the punch list process.
- (2) Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
  - (a) Standard Steel Doors and Frames: ANSI/SDI A250.8.
  - (b) Custom Steel Doors and Frames: HMMA 831.
  - (c) Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- (3) Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- (4) Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- (5) Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- (6) Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- (7) Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- (8) Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- (9) Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).
- (10) Lock Cylinders: Install construction cores to secure building and areas during construction period.
  - (a) Replace construction cores with permanent cores as indicated in keying section.
  - (b) Permanent cores will be supplied to owner and installed by the owners' representative.
- (11) Wiring: Coordinate with Division 26 and Division 28 sections for:
  - (a) Conduit, junction boxes and wire pulls.
  - (b) Connections to and from power supplies to electrified hardware.
  - (c) Connections to fire/smoke alarm system and smoke evacuation system.
  - (d) Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
  - (e) Testing and labeling wires with Architect's opening number.

iv) ADJUSTING

- (1) 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.
  - (a) Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees
  - (b) Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
  - (c) Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

v) CLEANING AND PROTECTION

- (1) Clean adjacent surfaces soiled by door hardware installation.
- (2) Clean operating items as necessary to restore proper function and finish.
- (3) Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

vi) DOOR HARDWARE SCHEDULE

- (1) Locksets, exit devices, and other hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements. Contractor is to provide hardware sets, per the project notes and requirements for each door, then submit these sets in the shop drawing phase for review and approval.

**NON-STRUCTURAL METAL FRAMING**

a) PART 1 – GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

- (1) Section Includes:
  - (a) Non-load-bearing steel framing systems for interior partitions.
  - (b) Suspension systems for interior ceilings and soffits.
  - (c) Grid suspension systems for gypsum board ceilings.

iii) ACTION SUBMITTALS

- (1) Product Data: For each type of product.
  - (a) Studs and Runners: Provide documentation that framing members' certification is according to SIFA's "Code Compliance Certification Program for Cold-Formed Steel Structural and Non-Structural Framing Members."

iv) INFORMATIONAL SUBMITTALS

- (1) Evaluation Reports: For embossed steel studs and runners firestop tracks, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

b) PART 2 – PRODUCTS

i) PERFORMANCE REQUIREMENTS

- (1) Horizontal Deflection: For wall assemblies, limited to 1/240 at gypsum board assemblies and 1/360 at cementitious backer units of the wall height based on horizontal loading of 5 lbf/sq. ft. .

ii) FRAMING SYSTEMS

- (1) Framing Members, General: Comply with ASTM C 754 for conditions indicated.

- (a) Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
  - (b) Protective Coating: ASTM A 653/A 653M, G40, hot-dip galvanized coating unless otherwise indicated.
- (2) Studs and Runners: ASTM C 645. Use either steel studs and runners or embossed steel studs and runners.
- (a) Steel Studs and Runners:
    - (i) Minimum Base-Metal Thickness: As required by performance requirements for horizontal deflection.
    - (ii) Depth: As indicated on Drawings.
  - (b) Embossed Steel Studs and Runners:
    - (i) Minimum Base-Metal Thickness: As required by horizontal deflection performance requirements.
    - (ii) Depth: As indicated on Drawings.
- (3) Slip-Type Head Joints: Where indicated, provide one of the following:
- (a) Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch-deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
  - (b) Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
  - (c) Deflection Track: Steel sheet top runner 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.
- (4) Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
- (a) Minimum Base-Metal Thickness: 0.0329 inch.
- (5) Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.
- (a) Depth: 1-1/2 inches.
  - (b) Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.
- (6) Hat-Shaped, Rigid Furring Channels: ASTM C 645.
- (a) Minimum Base-Metal Thickness: 0.0329 inch.
  - (b) Depth: 7/8 inch.
- (7) Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission.
- (a) Configuration: Asymmetrical or hat shaped.
- (8) Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.
- (a) Depth: 3/4 inch.
- (9) Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-metal thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.
- iii) SUSPENSION SYSTEMS
- (1) Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.
  - (2) Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in



diameter.

- (3) Flat Hangers: Steel sheet, 1 by 3/16 inch by length indicated.
- (4) Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch and minimum 1/2-inch- wide flanges.
  - (a) Depth: As indicated on Drawings.
- (5) Furring Channels (Furring Members):
  - (a) Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
  - (b) Steel Studs and Runners: ASTM C 645.
    - (i) Minimum Base-Metal Thickness: As indicated on Drawings.
    - (ii) Depth: As indicated on Drawings.
  - (c) Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.
    - (i) Minimum Base-Metal Thickness: 0.0329 inch .
  - (d) Resilient Furring Channels: 1/2-inch- deep members designed to reduce sound transmission.
    - (i) Configuration: Asymmetrical or hat shaped.
- (6) Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

iv) AUXILIARY MATERIALS

- (1) General: Provide auxiliary materials that comply with referenced installation standards.
  - (a) Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- (2) Isolation Strip at Exterior Walls: Provide the following:
  - (a) 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.

c) PART 3 – EXECUTION

i) EXAMINATION

- (1) 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.
- (2) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) PREPARATION

- (1) Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
  - (a) Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

iii) INSTALLATION, GENERAL

- (1) Installation Standard: ASTM C 754.
  - (a) Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- (2) Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- (3) Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- (4) Install bracing at terminations in assemblies.

- (5) Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

iv) INSTALLING FRAMED ASSEMBLIES

- (1) Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
  - (a) Single-Layer Application: 16 inches o.c. unless otherwise indicated.
- (2) Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- (3) Install studs so flanges within framing system point in same direction.
- (4) Install tracks (runners) 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.
  - (a) 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.
  - (b) Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
    - (i) Install two studs at each jamb unless otherwise indicated.
    - (ii) 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.
    - (iii) Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
  - (c) 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.
- (5) Direct Furring:
  - (a) Screw to wood framing.
  - (b) Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- (6) Z-Shaped Furring Members:
  - (a) Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced 24 inches o.c.
  - (b) 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.
  - (c) 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.
- (7) 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.

v) INSTALLING SUSPENSION SYSTEMS

- (1) Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- (2) Isolate suspension systems from building structure where they abut or are penetrated by

- building structure to prevent transfer of loading imposed by structural movement.
- (3) Suspend hangers from building structure as follows:
- (a) 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.
    - (i) Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  - (b) 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.
    - (i) Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
  - (c) 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.
  - (d) 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.
  - (e) Do not attach hangers to steel roof deck.
  - (f) Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
  - (g) Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
  - (h) Do not connect or suspend steel framing from ducts, pipes, or conduit.
- (4) 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.
- (5) 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.

## GYPSUM BOARD

### a) PART 1 – GENERAL

#### i) RELATED DOCUMENTS

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

#### ii) SUMMARY

- (1) Section Includes:

(a) Interior gypsum board.

- (2) Related Requirements:

(a) Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.

#### iii) ACTION SUBMITTALS

- (1) Product Data: For each type of product.

#### iv) DELIVERY, STORAGE AND HANDLING

- (1) 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.

v) FIELD CONDITIONS

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

b) PART 2 – PRODUCTS

i) GYPSUM BOARD, GENERAL

- (1) Materials: Products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

ii) INTERIOR GYPSUM BOARD

- (1) Gypsum Wallboard: ASTM C 1396/C 1396M.

(a) Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- (i) Georgia-Pacific Building Products.
- (ii) National Gypsum Company.
- (iii) USG Corporation.

- (2) Gypsum Ceiling Board: ASTM C 1396/C 1396M.

(a) Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- (i) Georgia-Pacific Building Products; Toughrock CD Ceiling Board.
- (ii) National Gypsum Company; High Strength Ceiling Board.
- (iii) USG Corporation; Sheetrock Brand Sag-Resistant Gypsum Board.

(b) Thickness: 1/2 inch.

(c) Long Edges: Tapered.

iii) TRIM ACCESSORIES

- (1) Interior Trim: ASTM C 1047.

(a) Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.

(b) Shapes:

- (i) Cornerbead.
- (ii) LC-Bead: J-shaped; exposed long flange receives joint compound.
- (iii) L-Bead: L-shaped; exposed long flange receives joint compound.
- (iv) Expansion (control) joint.

(v) Curved-Edge Cornerbead: With notched or flexible flanges

iv) JOINT TREATMENT MATERIALS

- (1) General: Comply with ASTM C 475/C 475M.

(2) Joint Tape:

- (a) Interior Gypsum Board: Paper.
- (b) Exterior Gypsum Soffit Board: Fiber Glass.
- (c) Tile Backing Panels: As recommended by panel manufacturer.

(3) Joint Compound for Interior Gypsum Board: For each coat, use formulation that is

compatible with other compounds applied on previous or for successive coats.

(a) Prefilling: At open joints and damaged surface areas, use setting-type taping compound.

(b) Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

(i) Use setting-type compound for installing paper-faced metal trim accessories.

(c) Fill Coat: For second coat, use compound per gypsum board manufacturer's written recommendations.

(d) Finish Coat: For third coat, use compound per gypsum board manufacturer's written recommendations.

(e) Skim Coat: For final coat of Level 5 finish, use compound or coating per gypsum board manufacturer's written recommendations.

(4) Joint Compound for Exterior Applications:

(a) Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.

(5) Joint Compound for Tile Backing Panels:

(a) Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.

v) AUXILIARY MATERIALS

(1) General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

(2) Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

(a) Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

(b) For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

(3) Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

(4) Sound-Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

(a) Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

c) PART 3 – EXECUTION

i) EXAMINATION

(1) 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.

(2) Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

(3) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) APPLYING AND FINISHING PANELS, GENERAL

(1) Comply with ASTM C 840.

(2) 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.

- (3) 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.
- (4) 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.
- (5) Form control and expansion joints with space between edges of adjoining gypsum panels
- (6) Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - (a) 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.
  - (b) Fit gypsum panels around ducts, pipes, and conduits.
  - (c) 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.
- (7) 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.
- (8) Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- (9) Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side

### iii) APPLYING INTERIOR GYPSUM BOARD

#### (1) Single-Layer Application:

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

### iv) INSTALLING TRIM ACCESSORIES

- (1) 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.
- (2) Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- (3) Interior Trim: Install in the following locations:
  - (a) Cornerbead: Use at outside corners unless otherwise indicated.
  - (b) LC-Bead: Use at exposed panel edges.
  - (c) L-Bead: Use where indicated.
  - (d) Curved-Edge Cornerbead: Use at curved openings.

v) FINISHING GYPSUM BOARD

- (1) 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.
- (2) Prefill open joints and damaged surface areas.
- (3) Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- (4) Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
  - (a) Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  - (b) Level 2: Panels that are substrate for tile.
  - (c) Level 3: Where indicated on Drawings.
  - (d) Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
    - (i) Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

vi) PROTECTION

- (1) 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.
- (2) Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- (3) Remove and replace panels that are wet, moisture damaged, and mold damaged.
  - (a) Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - (b) Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration

**ACOUSTICAL PANEL CEILINGS**

a) PART 1 – GENERAL

i) SUMMARY

- (1) Section includes acoustical panels and exposed suspension systems for interior ceilings.
- (2) Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

ii) PREINSTALLATION MEETINGS

- (1) Preinstallation Conference: Conduct conference at Project site to be attended by the installer, the architect, and the construction manager to review the specifications, and detail the materials, the installation, the initial maintenance, and protection of the installed ceiling.

iii) ACTION SUBMITTALS

- (1) Product Data: For each type of product.
- (2) Samples: For each exposed product and for each color and texture specified, 6 inches in size.

iv) INFORMATIONAL SUBMITTALS

- (1) Qualification Data: For testing agency.
- (2) Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.

(3) Evaluation Reports: For each acoustical panel ceiling suspension system, from ICC-ES.

v) CLOSEOUT SUBMITTALS

(1) Maintenance Data: For finishes to include in maintenance manuals.

vi) MAINTENANCE MATERIAL SUBMITTALS

(1) 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.

(a) Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity installed for each panel type specified.

(b) Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed for each type specified

(c) Hold-Down Clips: Equal to 2 percent of quantity installed.

(d) Impact Clips: Equal to 2 percent of quantity installed.

vii) DELIVERY, STORAGE, AND HANDLING

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

(2) Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

(3) Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

viii) FIELD CONDITIONS

(1) Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, 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.

(a) Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

b) PART 2 – PRODUCTS

i) SOURCE LIMITATIONS

(1) Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

ii) PERFORMANCE REQUIREMENTS

(1) Ceiling products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Formaldehyde emissions shall not exceed 16.5 mcg/cu. m or 13.5 ppb, whichever is less.

(2) Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

(a) Flame-Spread Index: Class A according to ASTM E1264.

(b) Smoke-Developed Index: 450 or less.

(3) Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency.



Identify products with appropriate markings of applicable testing agency.

(a) Indicate design designations from UL or from the listings of another qualified testing agency.

iii) ACOUSTICAL PANELS

(1) Acoustical Panels: ACT-1

(a) Manufacturers: Subject to compliance with requirements, provide products by one of the following:

(i) Armstrong World Industries, Inc.; Cirrus #574 (24 by 24 inch) and #533 (24 by 48 inch) Square Lay-in Item #1714.

(ii) CertainTeed Corp.; Celotex Brand Fine Fissured High NRC #HHF-497 DP.

(iii) USG Interiors, Inc.; Subsidiary of USG Corporation; Eclipse ClimaPlus, Square Lay-in Item #76575.

(b) Classification: Provide fire-resistance rated panels complying with ASTM E 1264 for type, form, and pattern as follows:

(i) Type and Form: Type III, mineral base with painted finish; Form 2, water felted.

(ii) Pattern: CE (perforated, small holes and lightly textured).

(c) Color: White.

(d) LR: Not less than 0.85.

(e) NRC: Not less than 0.70.

(f) CAC: Not less than 35.

(g) Edge/Joint Detail: Square.

(h) Thickness: 3/4 inch.

(i) Modular Size: 24 by 48 inches and 24 by 24 inches, as indicated in Drawings.

(j) Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21 (basis of design: Armstrong, Humiguard Plus).

iv) METAL SUSPENSION SYSTEMS

(1) Suspension system for ACT-1.

(a) Products: Subject to compliance with requirements, provide one of the following:

(i) Armstrong World Industries, Inc.; Prelude XL 15/16" Exposed Tee System.

(ii) CertainTeed Corporation.; 15/16" Classic System.

(iii) USG Interiors, Inc.; Donn DX Exposed 15/16" Face Suspension System

(b) Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, G30 (Z90) coating designation, with prefinished, 15/16-inch- (24-mm-) wide, aluminum caps on flanges.

(i) Structural Classification: Intermediate-duty system.

(ii) End Condition of Cross Runners: Override stepped or butt-edge type.

(iii) Face Design: Flat, flush.

(iv) Face Finish: Painted white.

v) ACCESSORIES

(1) Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

(a) Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E488/E488M or ASTM E1512 as applicable, conducted by a qualified testing and inspecting agency.

(i) Type: Postinstalled expansion anchors.

(ii) Corrosion Protection, Carbon Steel: Components zinc plated according to ASTM B633, Class SC 1 (mild) service condition.

(iii) Corrosion Protection, Stainless Steel: Components complying with ASTM F593 and ASTM F594, Group 1 Alloy 304 or 316.

(iv) Corrosion Protection, Nickel-Copper Alloy: Components fabricated from nickel-copper- alloy rods complying with ASTM B164 for UNS No. N04400 alloy.

(b) Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E1190, conducted by a qualified testing and inspecting agency.

(2) Wire Hangers, Braces, and Ties: Provide wires as follows:

(a) Zinc-Coated, Carbon-Steel Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper.

(b) Stainless-Steel Wire: ASTM A580/A580M, Type 304, nonmagnetic.

(c) Nickel-Copper-Alloy Wire: ASTM B164, nickel-copper-alloy UNS No. N04400.

(d) Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C635/C635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.106-inch- diameter wire.

(3) Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

(4) Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

(5) Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch- thick, galvanized- steel sheet complying with ASTM A653/A653M, G90 coating designation; with bolted connections and 5/16-inch- diameter bolts.

(6) Hold-Down Clips: Manufacturer's standard hold-down.

(7) Impact Clips: Manufacturer's standard impact-clip system designed to absorb impact forces against acoustical panels.

(8) Clean-Room Gasket System: Where indicated, provide manufacturer's standard system, including manufacturer's standard gasket and related adhesives, tapes, seals, and retention clips, designed to seal out foreign material from and maintain positive pressure in clean room.

c) PART 3 – EXECUTION

i) EXAMINATION

- (1) 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.
- (2) Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- (3) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) PREPARATION

- (1) 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 unless otherwise indicated and comply with layout shown on reflected ceiling plans.
- (2) Layout openings for penetrations centered on the penetrating items.

iii) INSTALLATION

- (1) Install acoustical panel ceilings according to ASTM C636/C636M and manufacturer's written instructions.
  - (a) Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.
- (2) Suspend ceiling hangers from building's structural members and as follows:
  - (a) 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.
  - (b) Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  - (c) 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.
  - (d) Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
  - (e) Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
  - (f) Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
  - (g) 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.

- (h) Do not attach hangers to steel deck tabs.
  - (i) Do not attach hangers to steel roof deck. Attach hangers to structural members.
  - (j) 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.
  - (k) Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
- (3) 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.
- (4) Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
- (a) Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
  - (b) Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
  - (c) Do not use exposed fasteners, including pop rivets, on moldings and trim.
- (5) Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- (6) 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 precise fit.
- (a) Arrange directionally patterned acoustical panels as follows:
    - (i) Install panels with pattern running in one direction parallel to long axis of space or as indicated in drawings.
  - (b) For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
  - (c) For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
  - (d) For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
  - (e) 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.
  - (f) Install impact clips in areas indicated; space according to panel manufacturer's written instructions unless otherwise indicated.
    - (i) Hold-Down Clips: Space 24 inches o.c. on all cross runners.
  - (g) Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

#### iv) ERECTION TOLERANCES

- (1) Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet,

non- cumulative.

(2) Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

v) CLEANING

(1) 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.

(2) Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

RESILIENT BASE AND ACCESSORIES

a) PART 1 – GENERAL

i) SUMMARY

(1) Section Includes:

(a) Thermoset-rubber base.

ii) ACTION SUBMITTALS

(1) Product Data: For each type of product.

(2) Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 2 inches long.

iii) MAINTENANCE MATERIAL SUBMITTALS

(1) 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.

(a) 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.

iv) QUALITY ASSURANCE

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

(a) Coordinate mockups in this Section with mockups specified in other Sections.

(b) Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

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

(2) Installation Qualification: Contractors for floor covering installation should be experienced in managing commercial flooring projects and provide professional installers, qualified to install the various flooring materials specified. An installer is "qualified" if trained by a certified International Standards and Training Alliance resilient floor covering installer.

v) DELIVERY, STORAGE, AND HANDLING

(1) 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 55 deg F or more than 85 deg F.

vi) FIELD CONDITIONS

- (1) Maintain ambient temperatures within range recommended by manufacturer, but not less than 65 degrees F or more than 85 degrees F, in spaces to receive resilient products during the following periods:
  - (a) 48 hours before installation.
  - (b) During installation.
  - (c) 48 hours after installation.
- (2) After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- (3) Install resilient products after other finishing operations, including painting, have been completed.

b) PART 2 – PRODUCTS

i) PERFORMANCE REQUIREMENTS

- (1) Fire-Test-Response Characteristics: For resilient base and accessories, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
  - (a) Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
  - (b) ASTM E (Smoke Generation) Maximum Specific Optical Density of 450 or less.

ii) THERMOSET-RUBBER BASE (RB)

- (1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - (a) Flexco; Wallflowers Wall Base.
  - (b) Johnsonite; A Tarkett Company; Baseworks Rubber Wall Base.
  - (c) Mannington Commercial: BurkeBase Type TS Wall Base.
  - (d) Mondo Contract Flooring; Wall Base.
  - (e) Nora Systems, Inc.; Nora Wall Base
  - (f) Roppe Corporation, U.S.A.; Pinnacle Wall Base.
- (2) Product Standard: ASTM F 1861, Type TS (rubber, thermoset).
  - (a) Group: I (solid, homogeneous).
  - (b) Style: B, Cove.
  - (c) Thickness: 0.125 inch.
  - (d) Height: 4 inches and 6 inches were indicated in drawings.
  - (e) Lengths: Coils in manufacturer's standard length, minimum 100 feet.
  - (f) Outside Corners: Job formed.
  - (g) Inside Corners: Job formed.
  - (h) Colors: As selected by Architect from full range of industry colors.

iii) VINYL MOLDING ACCESSORIES

- (1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - (a) Flexco, Corporation; Flooring Accessories.
  - (b) Johnsonite; A Tarkett Company; Specialty Flooring Finishing Accessories.

(c) Mannington Commercial; Vinyl Accessories.

(d) Roppe Corporation, U.S.A.; Vinyl Accessories.

(2) Description: Vinyl cap for cover resilient flooring, carpet edge for glue-down applications, nosing for carpet, nosing for resilient flooring, reducer strip for resilient flooring, joiner for tile and carpet, and transition strips.

(3) Profile and Dimensions: As indicated.

(4) Locations: Provide vinyl molding accessories in areas indicated.

(5) Colors: As selected by Architect from full range of industry colors.

iv) INSTALLATION MATERIALS

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

(2) Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

(a) Adhesives shall have a VOC content of 50 g/L or less.

(3) Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.

(4) Metal Edge Strips: of width shown, nominal 2 inches wide, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

c) PART 3 – EXECUTION

i) EXAMINATION

(1) Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

(a) 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.

(2) Proceed with installation only after unsatisfactory conditions have been corrected.

(a) Installation of resilient products indicates acceptance of surfaces and conditions.

ii) PREPARATION

(1) Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

(2) Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.

(a) Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

(b) Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

(c) Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.

(d) Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly

spaced in installation areas.

- (i) Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
- (ii) Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

- (3) Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- (4) Do not install resilient products until materials are the same temperature as space where they are to be installed.
  - (a) At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- (5) Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

### iii) RESILIENT BASE INSTALLATION

- (1) Comply with manufacturer's written instructions for installing resilient base.
- (2) Use only manufacturer's recommended adhesive for installation.
- (3) 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.
- (4) Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- (5) Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- (6) Do not stretch resilient base during installation.
- (7) On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- (8) Preformed Corners: Install preformed corners before installing straight pieces.
- (9) Job-Formed Corners:
  - (a) Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 6 inches in length.
    - (i) Form without producing discoloration (whitening) at bends.
  - (b) Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 6 inches in length.
  - (c) Mitered corners are not acceptable.

### iv) RESILIENT ACCESSORY INSTALLATION

- (1) Comply with manufacturer's written instructions for installing resilient accessories.
- (2) Resilient Stair Accessories:
  - (a) Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
  - (b) Use only manufacturer's recommended adhesive for installation.
  - (c) Tightly adhere to substrates throughout length of each piece.
  - (d) For treads installed as separate, equal-length units, install to produce a flush joint



between units.

- (3) Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

v) CLEANING AND PROTECTION

- (1) Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- (2) Perform the following operations immediately after completing resilient-product installation:
  - (a) Remove adhesive and other blemishes from surfaces. Follow manufacturer's instructions to avoid damage to flooring finish and accessory materials' finish
  - (b) Sweep and vacuum horizontal surfaces thoroughly.
  - (c) Damp-mop horizontal surfaces to remove marks and soil.
- (3) Initial Maintenance for Rubber Tread and Riser Units: Remove soil, visible adhesive and surface blemishes from floor tile surfaces before performing manufacturer's recommended maintenance.
  - (a) Use commercially available product recommended by flooring manufacturer.
  - (b) Remove silicone finish with a diluted pH neutral cleaner/degreaser using flooring and solution manufacturers' accepted method.
- (4) Protect resilient products from marks, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- (5) Cover resilient products subject to wear and foot traffic until Substantial Completion.

**RESILIENT TILE FLOORING**

a) PART 1 – GENERAL

i) RELATED DOCUMENTS

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

ii) SUMMARY

- (1) Section Includes:
  - (a) Vinyl enhanced tile.
- (2) Related Sections:
  - (a) Division 09 Section "Resilient Base and Accessories" for resilient base, reducer strips, and other accessories installed with resilient floor coverings.

iii) ACTION SUBMITTALS

- (1) Product Data: For each type of product.

iv) INFORMATIONAL SUBMITTALS

- (1) Qualification Data: For Installer.

v) CLOSEOUT SUBMITTALS

- (1) Maintenance Data: For each type of floor tile to include in maintenance manuals.
- (2) Maintenance Tutorial: For each type of floor tile, provide a maintenance tutorial for the owners by the manufacturer including the recommended products, procedures, equipment required to retain the flooring at its optimum condition.

vi) MAINTENANCE MATERIAL SUBMITTALS

- (1) Furnish extra materials that match products installed and that are packaged with protective

covering for storage and identified with labels describing contents.

(a) Floor Tile: Furnish (2) full cartons (90 sq. ft) of each field color and 1 full carton (45 sq. ft), of each accent color in the dye lots installed.

vii) QUALITY ASSURANCE

(1) Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

(a) Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

(2) Source Limitations: Obtain each floor tile type through one source from a single manufacturer.

viii) DELIVERY, STORAGE, AND HANDLING

(1) Store floor tile 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. Store floor tiles on flat surfaces.

ix) FIELD CONDITIONS

(1) 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 floor tile during the following time periods:

(a) 48 hours before installation.

(b) During installation.

(c) 48 hours after installation.

(2) After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

(3) Close spaces to traffic during floor tile installation.

(4) Close spaces to traffic for 48 hours after floor tile installation.

(5) Install floor tile after other finishing operations, including painting, have been completed.

b) PART 2 – PRODUCTS

i) PERFORMANCE REQUIREMENTS

(1) Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

(a) Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

(b) ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

ii) VINYL ENHANCED FLOOR TILE (VET)

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

(a) Altro; Dolce, Dolce Essentials, and Quartz Tile.

(b) Armstrong Flooring, Commercial; Eco Flooring

(c) Johnsonite, A Tarkett Company; Azterra and Azrock Color Essence Vinyl Enhanced Tile.

(d) Flexco, Corporation; Delane Solid Vinyl Tile.

(2) Tile Standard: ASTM F 1066, Class 2, through-pattern tile.

(3) Wearing Surface: Smooth.

(4) Thickness: 0.125 inch.

(5) Size: 12 by 12 inches and/or 12 by 24 inches.

(6) Colors and Patterns: As selected by Architect from full range of industry colors, minimum (65).

(7) Tile Standard: ASTM F 1066, Class 2, through-pattern tile.

- (8) Wearing Surface: Smooth.
- (9) Thickness: 0.125 inch.
- (10) Size: 12 by 12 inches and/or 12 by 24 inches.
- (11) Colors and Patterns: As selected by Architect from full range of industry colors, minimum (65).

iii) INSTALLATION MATERIALS

- (1) Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- (2) Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
  - (a) Adhesives shall comply with the following limits for VOC content:
    - (i) Vinyl Composition Tile Adhesives: 50 g/L or less.
    - (ii) Rubber Floor Adhesives: 60 g/L or less.
  - (b) Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- (3) Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

c) PART 3 – EXECUTION

i) EXAMINATION

- (1) Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - (a) 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 floor tile.
- (2) Proceed with installation only after unsatisfactory conditions have been corrected.

ii) PREPARATION

- (1) Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
- (2) Concrete Substrates: Prepare according to ASTM F 710.
  - (a) Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  - (b) Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
  - (c) Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrates pass testing.
  - (d) Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations:
    - (i) Perform anhydrous calcium chloride test according to ASTM F 1869.
      - 1. Rubber Floor Tile: Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
      - 2. Vinyl Composition Floor Tile: Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 5 lb of water/1000 sq. ft. (2.27 kg of water/92.9 sq. m) in 24 hours.

- (ii) Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum **75** percent relative humidity level.
- (3) Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.
- (4) Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- (5) Do not install floor tiles until they are the same temperature as the space where they are to be installed.
  - (a) At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.
- (6) Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

### iii) FLOOR TILE INSTALLATION

- (1) Comply with manufacturer's written instructions for installing floor tile.
- (2) Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
  - (a) Lay tiles **in pattern indicated**.
- (3) Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
  - (a) Lay tiles **with grain running in one direction and in pattern of colors and sizes indicated**.
- (4) Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- (5) Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- (6) Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- (7) Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
- (8) Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

### iv) CLEANING AND PROTECTION

- (1) Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- (2) Perform the following operations immediately after completing floor tile installation:
  - (a) Remove adhesive and other blemishes from exposed surfaces.
  - (b) Sweep and vacuum surfaces thoroughly.
  - (c) Damp-mop surfaces to remove marks and soil.
- (3) Protect floor tile from marks, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- (4) Floor Polish for Vinyl Enhanced Tile: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.

- (a) Use commercially available product acceptable to manufacturer and owner
- (b) Coordinate selection of floor polish with Owner's maintenance service.
- (c) Apply number of coat(s) as recommended in writing by flooring manufacturer for given area.

(5) Cover floor tile until Substantial Completion.

## INTERIOR PAINTING

### a) PART 1 – GENERAL

#### i) RELATED DOCUMENTS

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

#### ii) SUMMARY

(1) Section includes surface preparation and the application of paint systems on the following interior substrates:

- (a) Concrete.
- (b) Concrete masonry units (CMU).
- (c) Steel.
- (d) Galvanized metal.
- (e) Gypsum board.

(2) Related Requirements:

- (a) Section 051200 "Structural Steel Framing" for shop priming of metal substrates with primers specified in this Section.
- (b) Section 099600 "High-Performance Coatings" for high-performance and special-use coatings.
- (c) Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.
- (d) Section 099300 "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on interior wood substrates.

#### iii) ACTION SUBMITTALS

- (1) Product Data: For each type of product. Include preparation requirements and application instructions.
- (2) Product List: For each product indicated, include the following:
  - (a) Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  - (b) VOC content.

#### iv) MAINTENANCE MATERIAL SUBMITTALS

- (1) 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.
  - (a) Paint: 5 percent, but not less than 5 gal. (18.9 L) for field colors and 1 gal. (3.8 L) of each accent color applied.

#### v) QUALITY ASSURANCE

- (1) Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
- (2) Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

(3) Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

(4) Paint mockups as required per owners and architect.

vi) DELIVERY, STORAGE, AND HANDLING

(1) Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

(a) Product name or title of material.

(b) Product description (generic classification or binder type).

(c) Manufacturer's stock number and date of manufacture.

(d) Contents by volume, for pigment and vehicle constituents.

(e) Thinning instructions.

(f) Application instructions.

(g) Color name and number.

(h) VOC content.

(2) 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 .

(a) Maintain containers in clean condition, free of foreign materials and residue.

(b) Remove rags and waste from storage areas daily.

vii) FIELD CONDITIONS

(1) Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F .

(2) 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.

b) PART 2 – PRODUCTS

i) MANUFACTURERS

(1) Manufacturers: Subject to compliance with requirements, [provide products by one of the following]:

(a) Benjamin Moore & Co.

(b) PPG Architectural Finishes, Inc.

(c) Sherwin-Williams Company (The).

ii) PAINT, GENERAL

(1) Material Compatibility:

(a) 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.

(b) 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.

(2) Colors: Match Architect's samples.

iii) WATER-BASED PAINTS

(1) Latex, Interior, Institutional Low Odor/VOC, Flat (Gloss Level 1):MPI#143

(a) Benjamin Moore: Spec 500 Interior Latex Flat N536 (0 g/L), MPI # 53, X-Green 53,

143, X- Green 143, LEED 2009, LEED V4, CHPS Certified.

(b) PPG Architectural Finishes, Inc.: 6-4110 Speedhide zero VOC Interior Flat.

(c) Sherwin-Williams Company (The):.ProMar 200 Zero VOC Interior Latex Flat B30W12651

(2) Latex, Interior, Institutional Low Odor/VOC, (Gloss Level 3):MPI#145

(a) Benjamin Moore: Ultra Spec 500 Latex Eggshell N538 (0 g/L), MPI # 52, X-Green 52, 145, X- Green 145, 139, X-Green 139, LEED 2009, LEED V4, CHPS Certified.

(b) PPG Architectural Finishes, Inc.: 6-4310 Speedhide zero VOC Interior Eggshell.

(c) Sherwin-Williams Company (The): ProMar 200 Zero VOC Eg-Shel in Lieu of MPI#145.

(3) Latex, Interior, Institutional Low Odor/VOC, Semi-Gloss (Gloss Level 5):MPI#141

(a) Benjamin Moore: Benjamin Moore Ultra Spec 500 Interior Latex Gloss N540 (0 g/L), MPI # 54, X-Green 54, 147, X-Green 147, 141, X-Green 141, LEED 2009, LEED V4.

(b) PPG Architectural Finishes, Inc.: 6-4510 Speedhide zero VOC Interior Semi-Gloss.

(c) Sherwin-Williams Company (The): ProMar 200 Zero VOC Interior Latex Semi-Gloss in Lieu of MPI #141

#### iv) DRY FOG/FALL COATINGS

(1) Dry Fall, Water Based, Flat (Gloss Level 1): MPI#118

(a) Benjamin Moore: Coronado Super Kote 5000 Dry Fall Latex Flat N110 (46 g/L), MPI # 118

(b) PPG Architectural Finishes, Inc.: 6-715xi Speedhide Flat Dry Fall.

(c) Sherwin-Williams Company (The): B42W000181 Pro Industrial Low VOC Waterborne Acrylic Dryfall Flat.

#### v) SOURCE QUALITY CONTROL

(1) Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

(a) Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

(b) Testing agency will perform tests for compliance with product requirements.

(c) Owner may direct Contractor to stop applying coatings 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.

#### c) PART 3 – EXECUTION

##### i) EXAMINATION

(1) Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

(2) Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

(a) Concrete: 12 percent.

(b) Masonry (Clay and CMU): 12 percent.

(c) Gypsum Board: 12 percent.

(3) Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

(4) Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

(5) Proceed with coating application only after unsatisfactory conditions have been corrected.

(a) Application of coating indicates acceptance of surfaces and conditions.

## ii) PREPARATION

(1) Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

(2) Remove hardware, covers, plates, and similar items already in place that are removable and 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.

(a) After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

(3) Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

(a) Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

(4) Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

(5) Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.

(6) Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

(7) Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

(8) Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

(9) Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

## iii) APPLICATION

(1) Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

(a) Use applicators and techniques suited for paint and substrate indicated.

(b) 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.

(c) Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.



- (d) Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - (e) Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- (2) 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.
  - (3) If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
  - (4) 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.
  - (5) Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
    - (a) Paint the following work where exposed in equipment rooms:
      - (i) Equipment, including panelboards.
      - (ii) Uninsulated metal piping.
      - (iii) Uninsulated plastic piping.
      - (iv) Pipe hangers and supports.
      - (v) Metal conduit.
      - (vi) Plastic conduit.
      - (vii) Tanks that do not have factory-applied final finishes.
      - (viii) Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    - (b) Paint the following work where exposed in occupied spaces:
      - (i) Equipment, including panelboards.
      - (ii) Uninsulated metal piping.
      - (iii) Uninsulated plastic piping.
      - (iv) Pipe hangers and supports.
      - (v) Metal conduit.
      - (vi) Plastic conduit.
      - (vii) Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
      - (viii) Other items as directed by Architect.
    - (c) Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

#### iv) FIELD QUALITY CONTROL

- (1) Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  - (a) Contractor shall touch up and restore painted surfaces damaged by testing
  - (b) If test results show that dry film thickness of applied paint does not comply with paint

manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

v) CLEANING AND PROTECTION

- (1) At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- (2) After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- (3) 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 Architect, and leave in an undamaged condition.
- (4) At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

vi) INTERIOR PAINTING SCHEDULE

(1) CMU Substrates:

(a) Institutional Low-Odor/VOC Latex System:

- (i) Block Filler: Block filler, latex, interior/exterior.
- (ii) Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
- (iii) Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (Gloss Level 5).
- (iv) Surfaces: New masonry walls, graphics (do not use in high humidity areas).

(2) Steel Substrates:

(a) Water-Based Dry-Fall System:

- (i) Prime Coat: Primer, acrylic, anti-corrosive, for metal or primer, acrylic, quick dry, for metal.
- (ii) Topcoat: Dry fall, water based, flat (Gloss Level 1).
- (iii) Surfaces: Exposed metal decking, trusses, structural steel, metal joists.

(3) Gypsum Board Substrates:

(a) Institutional Low-Odor/VOC Latex System:

- (i) Prime Coat: Primer sealer, interior, institutional low odor/VOC.
- (ii) Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
- (iii) Topcoat: Latex, interior, institutional low odor/VOC, flat (Gloss Level 1).
- (iv) Surfaces: Drywall ceilings and soffits subject to no abuse.

**Part III: Bid Cost Form**  
**ITB #21360 Interior Renovations to H.B. Booker School**

The Bidder proposes to furnish all labor, materials, and equipment necessary to complete Interior Renovations to H.B. Booker School. The undersigned proposes to renovate the interior of H.B. Booker School for the District in accordance with the Specifications and to the entire satisfaction of, and acceptance by, the District and for the following prices. The Agreement will begin **October 15, 2022** pending authorization of funds at the discretion of the District.

**Base Bid:** Base bid shall consist of furnishing all materials, equipment, labor and services to perform all work, as shown in the specifications:

Materials:     \$ \_\_\_\_\_

Labor:           \$ \_\_\_\_\_

\_\_\_\_\_

Total Sum:     \$ \_\_\_\_\_

**Schedule:**

Date to Begin Construction:

Event:	Date:

**Substitutions:** Bidder is to list here any “Substitutions” for which consideration is desired, showing the addition or reduction in price to be made, for each, if the substitution is accepted, or stated “No Change in Price”, if none is provided. Submission of proposed substitution for approval, whether for savings in cost or improvement in construction is encouraged.

Substitutions are for consideration of inclusion only. The District has the right to require all work to conform to the Specifications issued.

Branded or Make Specified	Proposed Substitutions	Add	Deduct




**Vendors are required to complete the signatory section below.**

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

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

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

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

**Appendix A: District Related Forms**  
**Addendum Acknowledgement Form for ITB #21360**

Having read and examined the Request for Proposal Documents, including the specifications, prepared by the Cleveland Metropolitan School District for the above-referenced Project, and the following Addenda:

Addendum Number

Date of Receipt

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Bidder: \_\_\_\_\_.

The undersigned Vendor proposes to perform all work for the applicable contract, in accordance with the contract document for the proposed sums.

***Failing to acknowledge a published Addendum may cause your bid to be rejected.***

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

# Certificate of Debarment



## Certification Regarding Debarment, Suspension, and Other Responsibility Matters Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 13 CFR Part 145. The regulations were published as Part VII of the May 26, 1988 *Federal Register* (pages 19160-19211). Copies of the regulations are available from local offices of the U.S. Small Business Administration.

### (BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief that it and its principals:
  - (a) Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - (b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for 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; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are 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 enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective primary participant shall attach an explanation to this proposal.

Business Name \_\_\_\_\_

Date \_\_\_\_\_

By \_\_\_\_\_

Name and Title of Authorized Representative

\_\_\_\_\_  
Signature of Authorized Representative



## Certificate of Debarment Pg. 2

- 2 -

### INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to which this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations (13 CFR Part 145).
6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the ineligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

# Conflict of Interest Form

## Statement of Potential Conflicts of Interest

Vendor Name:	Primary Contact:
Address 1:	Telephone #:
Address 2:	Fax #:
City:	Email:
State, Zip:	Website:

Cleveland Metropolitan School District (CMSD) adheres to Ohio Ethics Law and strictly follows the opinion of the Ohio Ethics Commission. As such, each vendor is requested to submit this statement declaring any potential conflicts of interest in doing business with the District. Please answer the following two questions providing all requested information.

1. Are any current Cleveland Metropolitan School District (CMSD) employees, Cleveland Board of Education members, or any of their immediate family members, also members of the vendor's board of directors, hold any officer position with the vendor, or own any shares of any stock issued by the vendor?

Yes \_\_\_\_\_ No \_\_\_\_\_

If **Yes**, and if the CMSD employee, CMSD board member, or immediately family member is a member of the vendor's board of directors or holds an office with the vendor, please state the person's name and position with the vendor.

Name: \_\_\_\_\_

Position: \_\_\_\_\_

If **Yes**, and if the CMSD employee, CMSD board member, or immediate family member owns share of any stock in the vendor organization or company, state the percentage of all outstanding company shares owned by the CMSD employee or board member.

\_\_\_\_\_ %

2. Are any current CMSD employees, CMSD board members, or any immediate family members also employees of the vendor?

Yes \_\_\_\_\_ No \_\_\_\_\_

If **Yes**, please state the person's name and provide a description of their job duties for the provider:

Name: \_\_\_\_\_

Job Duties: \_\_\_\_\_

If **Yes**, please describe the contact that the vendor will have with the CMSD employee or CMSD board member in the course of providing services to the District:

\_\_\_\_\_

\_\_\_\_\_

**CERTIFICATION**

I do hereby certify that the foregoing statements are true and accurate, and that my signature below attests to the authenticity of my identity as the person actually signing this form. This document is not a contract. In order for a binding Agreement to exist, a signed Agreement will be required prior to any legally binding commitment by the District.

**NOTARIZED STATEMENT**

\_\_\_\_\_ being duly sworn and deposes says

That he/she is the \_\_\_\_\_ of  
(title)

\_\_\_\_\_, and answers to all the  
(organization)  
foregoing questions and all statements therein contained are true and correct.

\_\_\_\_\_  
(signature)

Subscribed and sworn before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

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

My commission expires: \_\_\_\_\_

## Bidder Qualifications Form

Bidder must answer all questions or attach a written explanation for each question.

PROPOSER NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY; STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

TITLE: \_\_\_\_\_

TELEPHONE: (    ) \_\_\_\_\_ TOLL FREE: (    ) \_\_\_\_\_

TAXPAYER IDENTIFICATION NUMBER: \_\_\_\_\_

1. What type of organization? (i.e. corporation, partnership, etc.)
  
2. How many years has your organization been in business?
  
3. How many years has your organization been in business under its current name?
  
4. List any other aliases your organization has utilized in the last two years and the form of Business
  
5. If you are currently a corporation, list the following:
  - a. State of incorporation
  
  - b. Date of incorporation
  
  - c. President's name
  
  - d. Secretary's name
  
  - e. Treasurer's name
  
  - f. Statutory agent's name
  
  - g. Name of shareholders, if less than 10

- h. Principal place of doing business
- 
- 6. If you are currently in a partnership, list the following:
    - a. Name and address of all general and limited partners.
  
    - b. Original name and date of organization's inception
- 
- 7. If you are neither a corporation nor a partnership, please describe your organization and list principals.
- 
- 8. Are you legally qualified to do business in the State of Ohio?
- 
- 9. Are you legally qualified to do business in Cuyahoga County and licensed by the City of Cleveland?
- 
- 10. Has your organization ever been (i) declared by a customer to be in default under a contract and/or (ii) sued by a customer for failure to completely a contract or properly perform services in a timely manner? If yes, please state where, when, and why.
- 
- 11. Has your organization ever been cited by a local, county, state, or federal authority for violation of a regulation or statute or failing to timely complete a contract in accordance with specifications? If yes, please state date, agency, and final disposition.
- 
- 12. Has your organization ever filed for bankruptcy? If yes, please state where, when and why?
- 
- 13. On a separate sheet, list the major customers for whom your organization has provided this type of equipment or service in the past five years. Include owner's name and type of work performed.
- 
- 14. Has your organization ever been sued by a supplier for failure to timely pay for materials or equipment provided? If yes, please provide details.
- 
- 15. What is the dollar limit of your firm's General (CLS) Liability Insurance?  
  
Name of insuring company: \_\_\_\_\_  
  
Policy number: \_\_\_\_\_
- 
- 16. What is the dollar limit of your firm's Automotive Liability Insurance?

Owned vehicles \_\_\_\_\_

Non-Owned vehicles \_\_\_\_\_

Name of insuring company \_\_\_\_\_

Policy number \_\_\_\_\_

17. List the name and address of every person having an interest in this ITB.
  
  
  
  
  
  
  
  
  
  
18. Has any federal, state or local government entity ever cited or taken any action against your organization or any of its principals for failure to pay or remit any taxes including but not limited to income, withholding, sales, franchise, or personal property taxes? If yes, please give name of agency, date and amount of taxes overdue and resolution of the issue.
  
  
  
  
  
  
  
  
  
  
19. Is your organization and its' principals current in payment of personal property taxes?
  
  
  
  
  
  
  
  
  
  
20. The prospective lower tier participant certifies, by submission of this ITB, that neither it nor its principals is presently debarred, suspended, proposed, for debarment or suspension, declared ineligible, or voluntarily excluded from participation in this transaction by any State and/or Federal Department or Agency.
  
  
  
  
  
  
  
  
  
  
21. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participants shall attach an explanation to this ITB.

## Notarized Statement

\_\_\_\_\_ being duly sworn and deposes says

that he/she is the \_\_\_\_\_ of  
(title)

\_\_\_\_\_, and answers to all the  
(organization)

foregoing questions and all statements therein contained are true and correct.

\_\_\_\_\_  
(signature)

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

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

My commission expires: \_\_\_\_\_

**Non-Collusion Affidavit**

This Affidavit must be executed and shall accompany the proposal in order for the proposal to be considered.

NON-COLLUSION AFFIDAVIT  
State of Ohio, Cuyahoga County

\_\_\_\_\_, being first duly sworn, deposes and says that

he/she is \_\_\_\_\_ of \_\_\_\_\_

of the party making the foregoing proposal; that such proposal is genuine and not collusive or sham; that said proposer has not colluded, conspired, connived, or agreed, directly or indirectly, with any proposer or person, to put in a sham proposal, or that such other person shall refrain from proposing, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the proposal price of affiant or any other proposer, to fix any overhead, profit or cost element of said proposal price, or of that of any proposer, or to secure any advantage against the Board of Education of the Cleveland Metropolitan School District, or any person or persons interested in the proposal; and that all statements contained in said proposal are true; and further that such proposer has not, directly or indirectly, submitted this proposal, or the contents thereof, or divulged information or data relative thereto to any Association or to any member or agent thereof.

\_\_\_\_\_  
Affiant

Sworn to and subscribed before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public in and for Cuyahoga County, Ohio

My commission expires: \_\_\_\_\_



## Diversity Business Enterprise Forms

Information about the District's Diversity Business Enterprise Program can be found at <https://bit.ly/3wvVApK>.

### DBE Form A

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

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

Type of Business (Product or Service): \_\_\_\_\_

Date of Proposed Contract Award: \_\_\_\_\_

Amount of Proposed Contract Award: \_\_\_\_\_

Diversity Business Enterprise Subcontractor(s): \_\_\_\_\_

Dollar Amount Subcontract Award: \_\_\_\_\_

Percent of Subcontract Award: \_\_\_\_\_

D.B.E. Participation: \_\_\_\_\_ \$ \_\_\_\_\_

F.B.E. Participation: \_\_\_\_\_ \$ \_\_\_\_\_

Name of EEO Officer: \_\_\_\_\_

\_\_\_\_\_  
(Signature of owner, partner, or authorized officer)

Name: \_\_\_\_\_ Dated: \_\_\_\_\_  
(printed)

Title: \_\_\_\_\_

DO NOT COMPLETE BELOW THIS LINE

\_\_\_Compliant \_\_\_Compliance Pending\_\_\_Non-Compliant

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

\_\_\_\_\_  
(signature, DBE Department)

\_\_\_\_\_  
(date)

## DBE Form B

### NOTICE OF REQUIREMENT TO ENSURE DIVERSITY BUSINESS ENTERPRISE (DBE) OPPORTUNITY

Note: All eligible proposers for award of the contract should comply with the Requirements, Terms, and Conditions of this Notice.

The undersigned proposer hereby agrees that the goal it has established for DBE participation in this project through either subcontracting or entering into a joint Venture with DBEs in conformity with the Requirements. Terms and Conditions of this Notice is a goal of thirty (30%) percent for a construction/repair/ maintenance contract, twenty (20%) percent for a supply contract, and fifteen (15%) for a service contract of the total contract amount of this project. In no event will the absence of goals as stated above be deemed as compliance with the requirements, terms and conditions of this notice.

In addition, the undersigned will complete and attach hereto the DBE (Form C) Schedule for DBE participation, showing all DBE/FBE that will participate as subcontractors or joint ventures in this contract and a DBE (Form D), DBE Letter of Intent form for each DBE/FBE listed on the Schedule.

Proposer: \_\_\_\_\_

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

By: \_\_\_\_\_

Title: \_\_\_\_\_

#### Definition of DBE: A Diversity Business Enterprise (DBE)

"Small Diversity business concern" means a small business concern that is a least (51) percent unconditionally owned by one or more individuals who are both socially and economically diverse, or a publicly owned business that has at least (51) percent of its stock unconditionally owned by one or more socially and economically diverse individuals and that has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least (51) percent unconditionally owned by an economically diverse Indian tribe or Native Hawaiian Organization, or a publicly owned business that has least (51) percent of its stock unconditionally owned by one of these entities, that has its management and daily business controlled by members of an economically diverse Indian tribe or Native Hawaiian Organization.

**DBE Form C**

**SCHEDULE MBE/FBE PARTICIPATION**

Project Name: \_\_\_\_\_

Name of Non-DBE Contractor: \_\_\_\_\_

Identification Number: \_\_\_\_\_

Location: \_\_\_\_\_

Name of Minority Contractor: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Type of work to be performed and work hours involved:  
\_\_\_\_\_

Projected commencement and completion dates for work:  
\_\_\_\_\_

Agreed price in dollars or percentage:  
\_\_\_\_\_

The undersigned will enter into a formal agreement with DBE for work listed in this schedule conditioned upon execution for a contract with the Cleveland Municipal School District

TO BE RETURNED WITH THE PROPOSAL

\_\_\_\_\_  
Signature of Non-DBE Prime Contractor

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

**DBE Form D**

**DBE LETTER OF INTENT**

To: \_\_\_\_\_  
*Non-DBE Prime or General Proposer*

Project: \_\_\_\_\_

**NON-DBE PRIME OR GENERAL PROPOSER**

The Undersigned intends to perform work in connection with the above-referenced project as (check one):

an individual       a corporation       a partnership       a joint venture

DBE status of the undersigned is confirmed in the Cleveland Municipal School District's DBE file of bona fide enterprises with a certification date of: \_\_\_\_\_

The Undersigned is prepared to perform the following described work in connection with the above referenced project. Specify in detail particular work items or parts thereof to be performed:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

at the following price or percent of contract: \$ \_\_\_\_\_

You have projected the following commencement date of such work, and the undersigned is projecting completion of such work as follows:

**Items** \_\_\_\_\_

**Projected Commencement Date** \_\_\_\_\_

**Projected Completion Date** \_\_\_\_\_

\_\_\_\_\_ % (percent) of the dollar value of the subcontract will be sublet and/or awarded to NON-DBE contractor (s) and/or NON-FBE SUPPLIERS. The undersigned will enter into a formal agreement for the above work with you conditioned upon your execution of a contract with the Cleveland Municipal School District.

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

\_\_\_\_\_  
**Name of DBE Firm (where applicable)**

\_\_\_\_\_  
Signature of DBE (where applicable)

\_\_\_\_\_  
Signature of MBE Firm

(TO BE RETURNED WITH ITB)

\_\_\_\_\_  
**Name of FBE Firm**

\_\_\_\_\_  
**Signature of FBE Firm**

**DBE Form E**

**DBE Unavailability Certification**

I, \_\_\_\_\_,  
*Name Title*

Of \_\_\_\_\_, certify that on \_\_\_\_\_  
*Date*

I contacted the following DBE to obtain a Proposal for work items to be performed on:

Board Project: \_\_\_\_\_

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

Work Items Sought: \_\_\_\_\_

Form of Proposal Sought: \_\_\_\_\_

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

Work Items Sought: \_\_\_\_\_

Form of Proposal Sought: \_\_\_\_\_

To the best of my knowledge and belief said minority business enterprise was unavailable (exclusive of the unavailability due to lack of agreement on price) for work on this project or unable to prepare a proposal for the following reason (s):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
*Signature, Non-DBE prime Proposer Date*

\_\_\_\_\_ was offered an opportunity to proposal on the above-referenced work on \_\_\_\_\_ by \_\_\_\_\_  
*Date Non-DBE Prime Proposer*

\_\_\_\_\_  
*Signature, Non-DBE Prime Proposer*

The above statement is a true and accurate account of why I did not submit a Proposal on this project.

\_\_\_\_\_  
*Signature, Non-DBE prime Proposer*

**DBE Form F**

**Non-Minority Prime Affidavit For DBE**

STATE OF            }  
COUNTY OF        } SS.

**AFFIDAVIT**

The undersigned swear that the foregoing statements are correct and include all material information necessary to identify and explain the items and operation of our subcontract and the intended participation by each party in the undertaking. Further, the undersigned covenant and agree to provide to the Cleveland Municipal School District current, complete, and accurate information regarding actual subcontract work and the payments thereof, and any proposed changes in any of the subcontract arrangements and to permit the audit and examination of the books, records and files of the subcontract or those of each party relevant to the subcontract, by authorized representatives of the Cleveland Municipal School District. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under federal and state laws concerning false statements.

Name of Firm: \_\_\_\_\_

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

Name and Title: \_\_\_\_\_

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

STATE OF            }  
COUNTY OF } SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, before me appeared \_\_\_\_\_

\_\_\_\_\_, to me personally known, who being duly sworn,

did execute the foregoing affidavit, and did state that they were properly authorized by \_\_\_\_\_

\_\_\_\_\_ to execute the affidavit and did so as their free act and deed.

(Seal)

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

Commission expires \_\_\_\_\_

## DBE Form G

**This form need not be completed if all joint venture firms are diversity business enterprises**

1. Name of Joint Venture: \_\_\_\_\_

2. Address of Joint Venture: \_\_\_\_\_

3. Phone Number of Joint Venture: \_\_\_\_\_

4. Identify the firms which comprise this joint venture. (The DBE partner must complete DBE Form A or have current DBE Certification)

---

---

a. Describe the roll of the DBE firm in the joint venture: \_\_\_\_\_

---

b. Describe briefly the experience and business qualifications of each non-DBE Joint Venture: \_\_\_\_\_

---

5. Nature of Joint Venture's Business: \_\_\_\_\_

---

6. Provide a copy of the Joint Venture Agreement.

7. What is the percentage of DBE Ownership? DBE \_\_\_\_\_% FBE \_\_\_\_\_%

8. Ownership of Joint Venture: (This need not be completed if described in the Joint Venture agreement provided in response to question 6).

a. Profit and loss sharing: \_\_\_\_\_

---

b. Capital contributions, including equipment: \_\_\_\_\_

---

c. Other applicable ownership interest: \_\_\_\_\_

---

9. Control of and participation in this contract. Identify by name, race, and "firm" those individuals and their titles who are responsible for day-to-day management and policy decision making, including, but not limited to, those prime responsibility form:

a. Financial decisions: \_\_\_\_\_

\_\_\_\_\_

b. Management decisions, such as:

i. Estimating: \_\_\_\_\_

ii. Marketing and Sales: \_\_\_\_\_

iii. Hiring and firing of management personnel: \_\_\_\_\_

\_\_\_\_\_

iv. Purchasing of major items or supplies: \_\_\_\_\_

\_\_\_\_\_

c. Supervision of field operations: \_\_\_\_\_

\_\_\_\_\_

Note: If after complete the DBE Form B and before the completion of the joint venture's work on any contract awarded, there is any significant change in the information submitted, the joint venture must inform the Cleveland Municipal School District, either directly or through the non-DBE prime subcontractor if the joint vendor is a subcontractor.



**DBE Form H**

**Non-Minority Prime Affidavit (Joint Venture)**

**STATE OF OHIO**

**CUYAHOGA COUNTY**

**AFFIDAVIT**

The undersigned swear that the forgoing statements are correct and include all material information necessary to identify and explain the items and operation of our subcontract and the intended participation by each joint venture in the undertaking. Further, the undersigned covenant and agree to provide to the Cleveland Municipal School District current, complete, and accurate information regarding actual joint venture work and the payments thereof and any proposed changes in any of the subcontract arrangements and to permit the audit and examination of the books, records and files of the joint venture or those of each party relevant to the joint venture, by authorized representatives of the Cleveland Municipal School District. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under federal and state laws concerning false statements.

\_\_\_\_\_  
*Name of Firm (Prime)*

\_\_\_\_\_  
*Name of Firm (DBE)*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Name and Title*

\_\_\_\_\_  
*Name and Title*

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

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

STATE OF \_\_\_\_\_ ] COUNTY OF

]SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_ , before me appeared \_\_\_\_\_, to me personally known, who being duly sworn, did execute the foregoing affidavit, and did state that they were properly authorized by \_\_\_\_\_ to execute the affidavit and did so as their free act and deed.

(Seal)

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

\_\_\_\_\_  
Commission expires

## EOA Contractual Declaration Forms

Information about the District's Affirmative Action Program can be found at <https://bit.ly/3wwVApK>.

### Service Provider Contract Compliance Form

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

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

Standard Metropolitan Statistical Area: \_\_\_\_\_

Recruitment Area: \_\_\_\_\_

Type of Business (product or service): \_\_\_\_\_

Name of EEO Officer: \_\_\_\_\_

Signature of Owner, Partner, or Authorized Officer: \_\_\_\_\_

Name (type or print): \_\_\_\_\_

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

---

Do not complete below this line

---

Status of Vendor:

Compliance

Conditional Compliance

Non-Compliance

Compliance Pending

Comments: \_\_\_\_\_

\_\_\_\_\_

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

**Compliance Declaration**

**The following must be filled out completely:**

It is the policy of \_\_\_\_\_ that equal employment opportunity be afforded to all qualified persons without regard to race, religion, color, sex, national origin, age, or handicap.

In support of this policy, \_\_\_\_\_ will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, or handicap.

\_\_\_\_\_ will take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to race, color, sex, national origin, age, or handicap. Such action will include, but not be limited to:

Recruitment, advertising, or solicitation for employment, hiring, placement, upgrading, transfer or demotion, selection for training including apprenticeship rates of pay or other forms of compensation, layoffs or termination.

The undersigned company states that they are of current applicable requirement pertaining to Fair Labor Standards and Non-Discriminatory Practices of Federal, State, and Local Governments.

The undersigned further acknowledges that if the contract is awarded to the undersigned, that the undersigned will comply with all Fair Labor Standard Practice.

\_\_\_\_\_  
(Name of Company)

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

(Signature of Company Official)

STATE OF ( )  
COUNTY OF ( ) SS.

BEFORE ME, a Notary Public in and for said County and State personally appeared the above-named Company  
\_\_\_\_\_ by \_\_\_\_\_

It's \_\_\_\_\_, who acknowledged that they knowingly signed the aforesaid instrument, and that the same is their free act and deed duly authorized and the free act and deed of said company.

IN TESTIMONY WHEREOF, I have hereto set my hand and affixed seal at

\_\_\_\_\_, \_\_\_\_\_, this

day of \_\_\_\_\_, 20\_\_\_.

## Employment Data Form

Please note this data may be obtained by visual survey or post-employment record. Neither visual surveys nor post-employment records are prohibited by any federal, state or local law. All specified data is required to be filled in by District policy.

Job Categories	All EMPLOYEES			MALES					FEMALES				
	TOALS MALES & FEMALES	MALES	FEMALES	WHITE (NOT OF HISPANIC ORIGIN)	BLACK (NOT OF HISPANIC ORIGIN)	ASIAN AMERICAN OR PACIFIC ISLANDER	AMERICAN INDIAN OR ALSKAN NATIVE	HISPANIC	WHITE (NOT OF HISPANIC ORIGIN)	BLACK (NOT OF HISPANIC ORIGIN)	ASIAN AMERICAN OR PACIFIC ISLANDE	AMERICAN INDIAN OR ALSKAN NATIVE	HISPANIC
OFFICIALS, MGRS & SUPERVISORS													
PROFESSIONALS													
TECHNICIANS													
SALES WORKERS													
OFFICE/CLERICAL													
CRAFTWORKERS (SKILLED)													
OPERATIONS (SEMI-SKILLED)													
LABORERS (UNSKILLED)													
SERVICE WORKERS													
APPRENTICES													
TOTAL													

**Additional information (optional):**

Describe any other actions taken which show that all employees are recruited, hired, or trained or promoted without regard to their race, religion, color, sex, handicap, age or national origin. Use second sheet if additional space is needed:

The undersigned certifies that they are legally authorized by the proposer to make the statements and representations contained in this report, and that they have read all of the foregoing statements and representations which are true and correct to the best of their knowledge and belief.

FIRM OR CORPORATE NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

## References

Include below three references of equal or larger size to this current ITB project. Public sector experience is preferred, but not required. Please attach relevant supporting documentation, such as project plans, scope of work.

### **Reference #1:**

Company/School Name: \_\_\_\_\_

Address: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone and Fax#: \_\_\_\_\_

Dates of Service: \_\_\_\_\_

Description of Services Provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### **Reference #2:**

Company/School Name: \_\_\_\_\_

Address: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone and Fax #: \_\_\_\_\_

Dates of Service: \_\_\_\_\_

Description of Services Provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Reference #3:**

Company/School Name: \_\_\_\_\_

Address: \_\_\_\_\_

Type of Business: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone and Fax#: \_\_\_\_\_

Dates of Service: \_\_\_\_\_

Description of Services Provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Appendix B: Service Provider Checklist

To assist service providers in the preparation of their proposals to ensure compliance with all document requirements

- Cover Page
- Transmittal Cover Letter, signed
- Table of Contents
- Bid Cost Form
  - Signatory
- District Related Forms
  - Addendum Acknowledgement, checked: <https://www.clevelandmetroschools.org/purchasing> for any addendums
  - Certificate of Debarment
  - Conflict of Interest
  - Bidder Qualification Form
  - Non-Collusion Affidavit
  - DBE Forms- A, B, C, D, E, F, G, & H, for more information: <https://bit.ly/3wvVApK>
  - EOA Contractual Declaration Forms 1 &2, for more information: <https://bit.ly/3wvVApK>
  - Employment Data Form
  - References
- Bid Guaranty

### Copies

- Original, marked
- Copies (1), marked
- USB B/Flashdrive

# BARBARA BOOKER SCHOOL

## INTERIOR IMPROVEMENTS

2121 WEST 67TH STREET

ISSUE FOR PERMIT 8.5.2022

CLEVELAND, OHIO  
44102

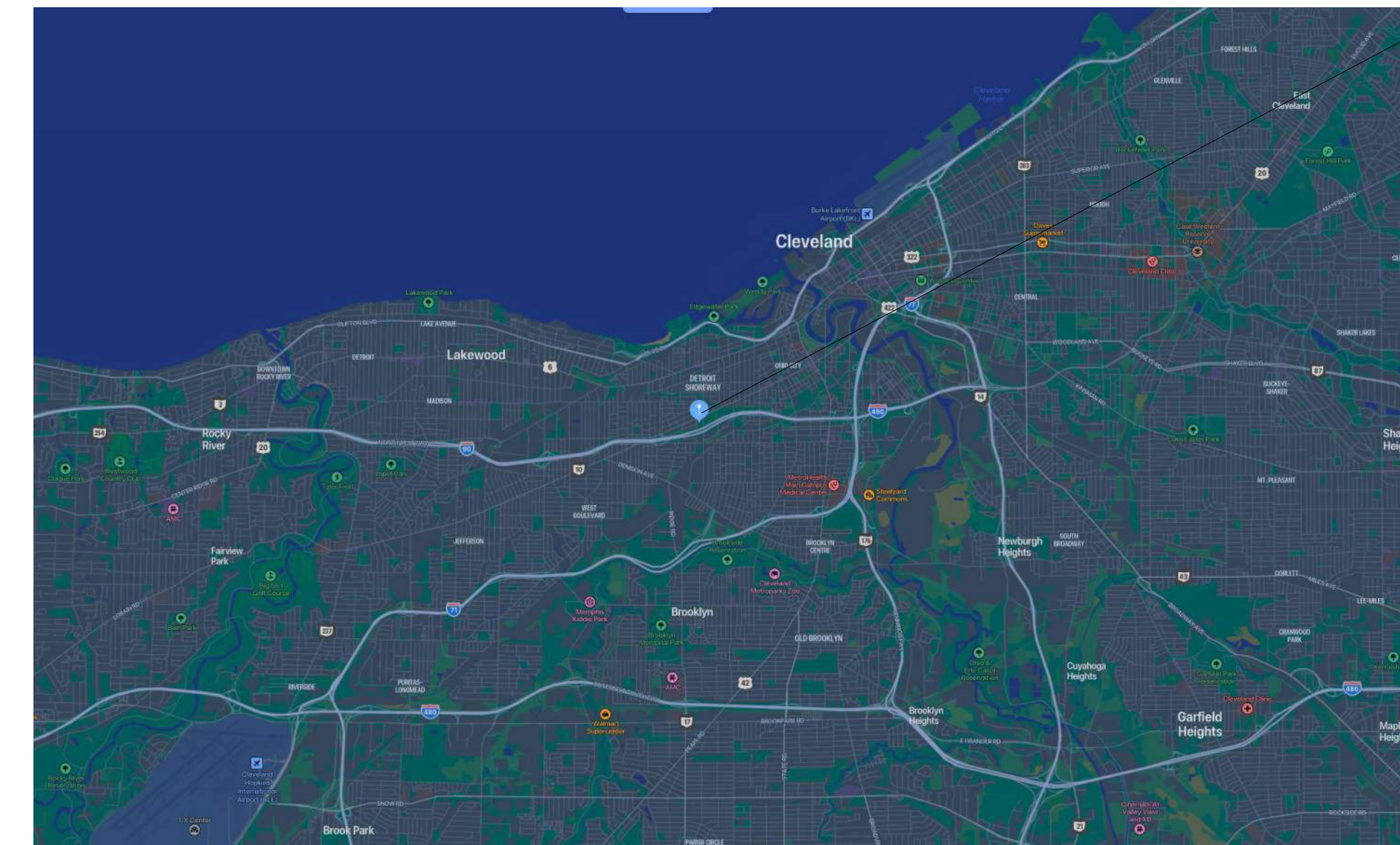
FUNDED THROUGH A  
PARTNERSHIP WITH:



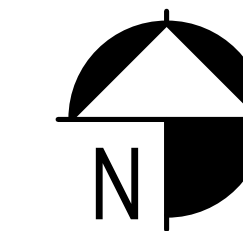
SITE  
LOCATION



SITE MAP  
NOT TO SCALE



VICINITY MAP  
NOT TO SCALE



SITE  
LOCATION

DRAWING LIST	
SHEET NUMBER	SHEET NAME
GENERAL	
CS1	COVER SHEET
ARCHITECTURAL	
A101	FIRST FLOOR PLAN
A102	FIRST FLOOR MEZZANINE PLAN
A103	SECOND FLOOR PLAN
A104	SECOND FLOOR MEZZANINE PLAN
A201	TYPICAL RCP #1
A202	FIRST MEZZANINE PARTIAL RCP
ELECTRICAL	
E-1	ELECTRICAL PLAN AND DETAILS
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL SPECIFICATIONS
PLUMBING	
P-1	PLUMBING GENERAL NOTES
P-2	FOOD SERVICE PLUMBING PLAN
P-3	MECHANICAL SPECIFICATIONS
FOOD SERVICE	
FSE-3	FOOD SERVICE ELECTRICAL FLOOR PLAN - FOR REFERENCE ONLY
FOOD SERVICE	
FSE-1	FOOD SERVICE EQUIPMENT FLOOR PLAN - FOR REFERENCE ONLY
FSE-2	FOOD SERVICE EQUIPMENT SCHEDULE
FSE-4	FOOD SERVICE PLUMBING FLOOR PLAN - FOR REFERENCE ONLY
FSE-5	FOOD SERVICE REFRIGERATION FLOOR PLAN - FOR REFERENCE ONLY

### ARCHITECT

TDA

4230 RIVER ST.  
WILLOUGHBY, OH 44094  
CONTACT: JEFF HENDERSON  
440.269.2266

### MECHANICAL, ELECTRICAL & PLUMBING ENGINEERS

THORSON BAKER & ASSOCIATES

3030 W STREETSBORO RD  
RICHFIELD, OH 44286  
CONTACT: ROB PIRIAK 330.659.6688

### KITCHEN DESIGNER

JRA FOOD SERVICE CONSULTANTS

401 HALL STREET SW, SUITE 234  
GRAND RAPIDS, MI 49503  
CONTACT: JIM RIEMENSCHNEIDER 616-454-4433



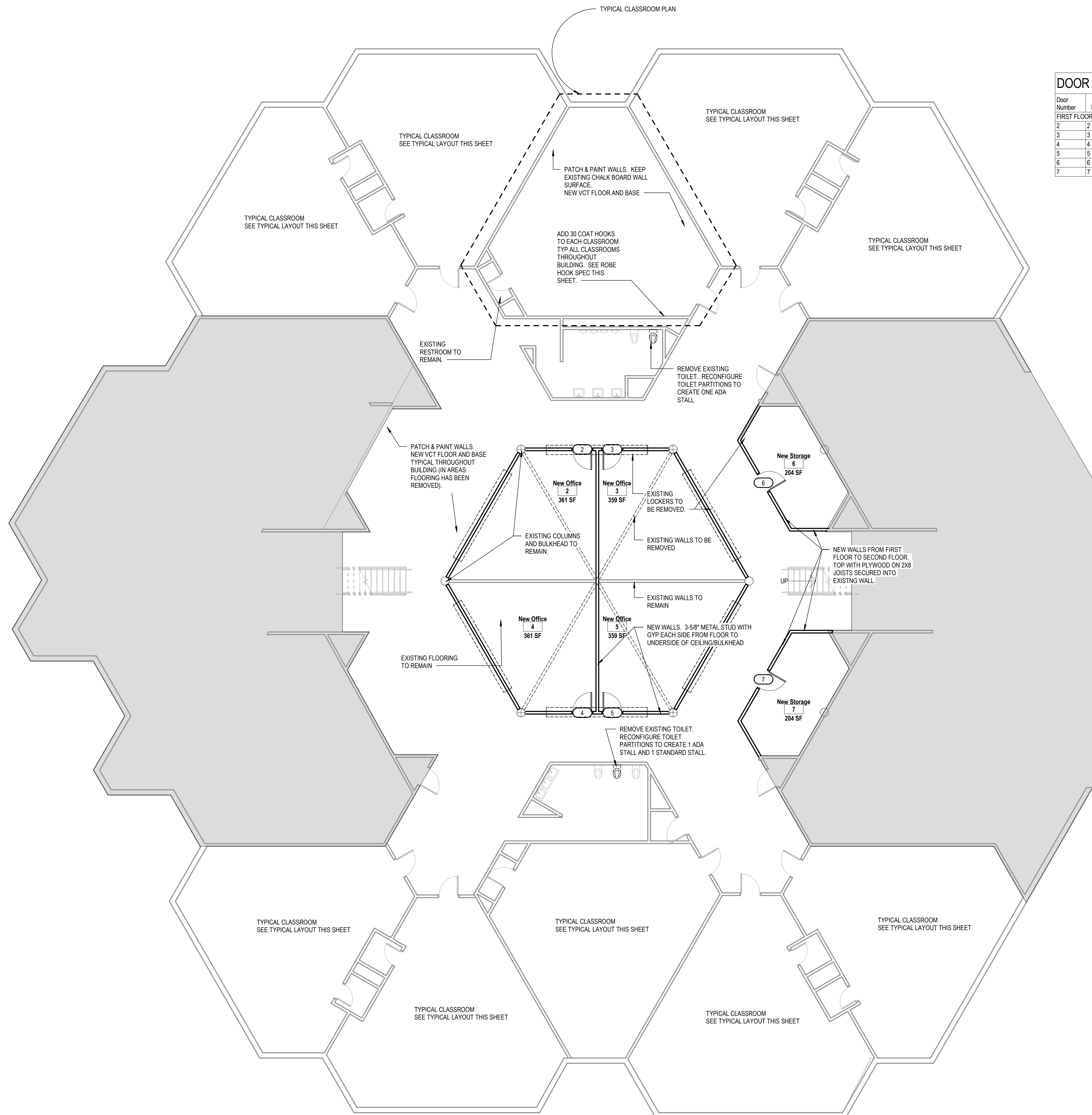
**GENERAL NOTES - ARCHITECTURAL**

1. ALL DIMENSIONS ARE DRAWN TO FINISH FACE OF WALL.
2. DO NOT SCALE DRAWINGS. DIMENSIONS LOCATED ON PLANS, ELEVATIONS, AND DETAILS SHALL GOVERN OVER SMALL SCALE DETAILS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
3. DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION AND INSTALLATION OF CASEWORK. REFER TO CASEWORK NOTES FOR ADDITIONAL INFORMATION.
4. PROVIDE METAL STUD FRAMING AROUND ALL PENETRATIONS THRU METAL STUD PARTITIONS.

**SPEC**  
 ROBE HOOK (RHADA)  
 1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENT. PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:  
 A. AMERICAN SPECIALTIES, INC.  
 B. BOBRICK WASHROOM EQUIPMENT, INC.  
 C. BRADLEY CORPORATION  
 D. GAMCO SPECIALTY ACCESSORIES, A DIVISION OF BOBRICK  
 2. DESCRIPTION: SINGLE PRONG UNIT  
 3. MATERIAL AND FINISH: STAINLESS STEEL, ASTM A480/A480M NO 4 FINISH (SATIN)

**DOOR SCHEDULE**

Door Number	Room Number	Room Name	Panel Type	Doors		Frame		Head Detail	Jamb Detail	Hardware Set No.	Fire Rating	Remarks
				Mat.	Width	Height	Mat.					
FIRST FLOOR												
2	2	New Office	F	SCW	3'-0"	7'-0"	HM					MATCH EXISTING
3	3	New Office	F	SCW	3'-0"	7'-0"	HM					MATCH EXISTING
4	4	New Office	F	SCW	3'-0"	7'-0"	HM					MATCH EXISTING
5	5	New Office	F	SCW	3'-0"	7'-0"	HM					MATCH EXISTING
6	6	New Storage	F	SCW	3'-0"	7'-0"	HM					MATCH EXISTING
7	7	New Storage	F	SCW	3'-0"	7'-0"	HM					MATCH EXISTING



**1**  
**A101** FIRST FLOOR EXISTING/DEMO/NEW  
 SCALE: 1/8" = 1'-0"

RENOVATIONS TO  
 BARBARA BOOKER SCHOOL

Project Address

no.	description	date
Sheet Revisions		
Project Issues		

design and construction documents as instruments of service are prepared by the architect and are not to be used for any other purpose without the written consent of the architect. the use of this design and these construction documents for any other purpose without the written consent of the architect is strictly prohibited without expressed written consent of the architect.

sheet name: FIRST FLOOR PLAN

drawn by:

Author

checked by:

Checker

sheet number:

**A101**

job number:

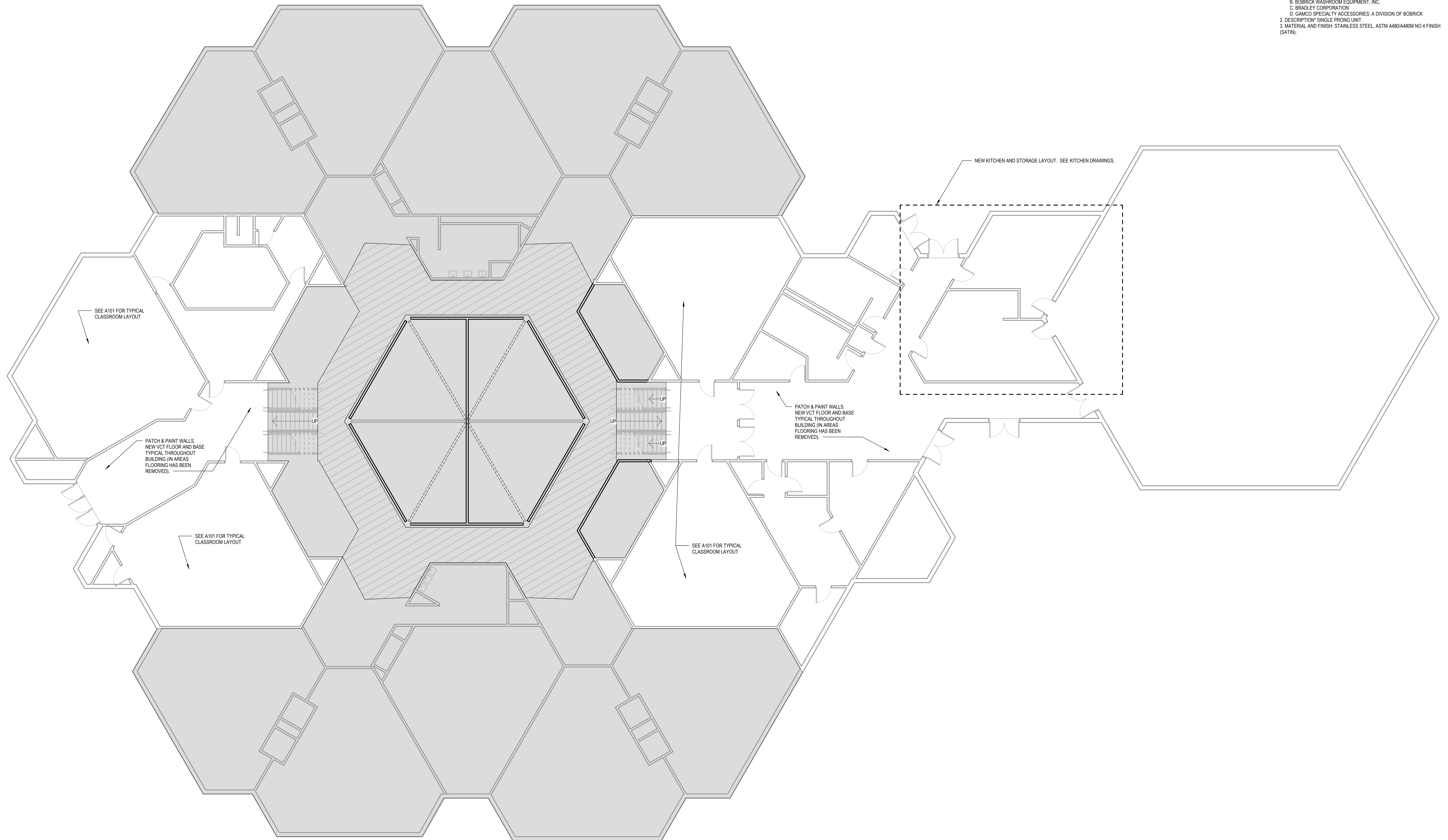
00000



GENERAL NOTES - ARCHITECTURAL

1. ALL DIMENSIONS ARE DRAWN TO FINISH FACE OF WALL.
2. DO NOT SCALE DRAWINGS. DIMENSIONS LOCATED ON PLANS, ELEVATIONS, AND DETAILS SHALL GOVERN OVER SMALL SCALE DETAILS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
3. DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION AND INSTALLATION OF CASEWORK. REFER TO CASEWORK NOTES FOR ADDITIONAL INFORMATION.
4. PROVIDE METAL STUD FRAMING AROUND ALL PENETRATIONS THRU METAL STUD PARTITIONS.

**SPEC**  
 ROBE HOOK (RHADA)  
 1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENT.  
 PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:  
 A. AMERICAN SPECIALTIES, INC.  
 B. BOBRICK WASHROOM EQUIPMENT, INC.  
 C. BRADLEY CORPORATION  
 D. GAMCO SPECIALTY ACCESSORIES; A DIVISION OF BOBRICK  
 2. DESCRIPTION: SINGLE PRONG UNIT  
 3. MATERIAL AND FINISH: STAINLESS STEEL, ASTM A480/A483M NO. 4 FINISH (SATIN).



1 FIRST FLOOR MEZZANINE EXISTING/DEMO/NEW  
 A102 SCALE: 1/8" = 1'-0"

Sheet Revisions

no.	description	date

Project Issues

no.	description	date

design and construction documents as instruments of service are prepared by the architect under the direct supervision and control of the architect. the use of this design and these construction documents by anyone other than the contractor named herein is strictly prohibited without expressed written consent of the design architect.  
 sheet name: FIRST FLOOR MEZZANINE PLAN

drawn by:

checked by:

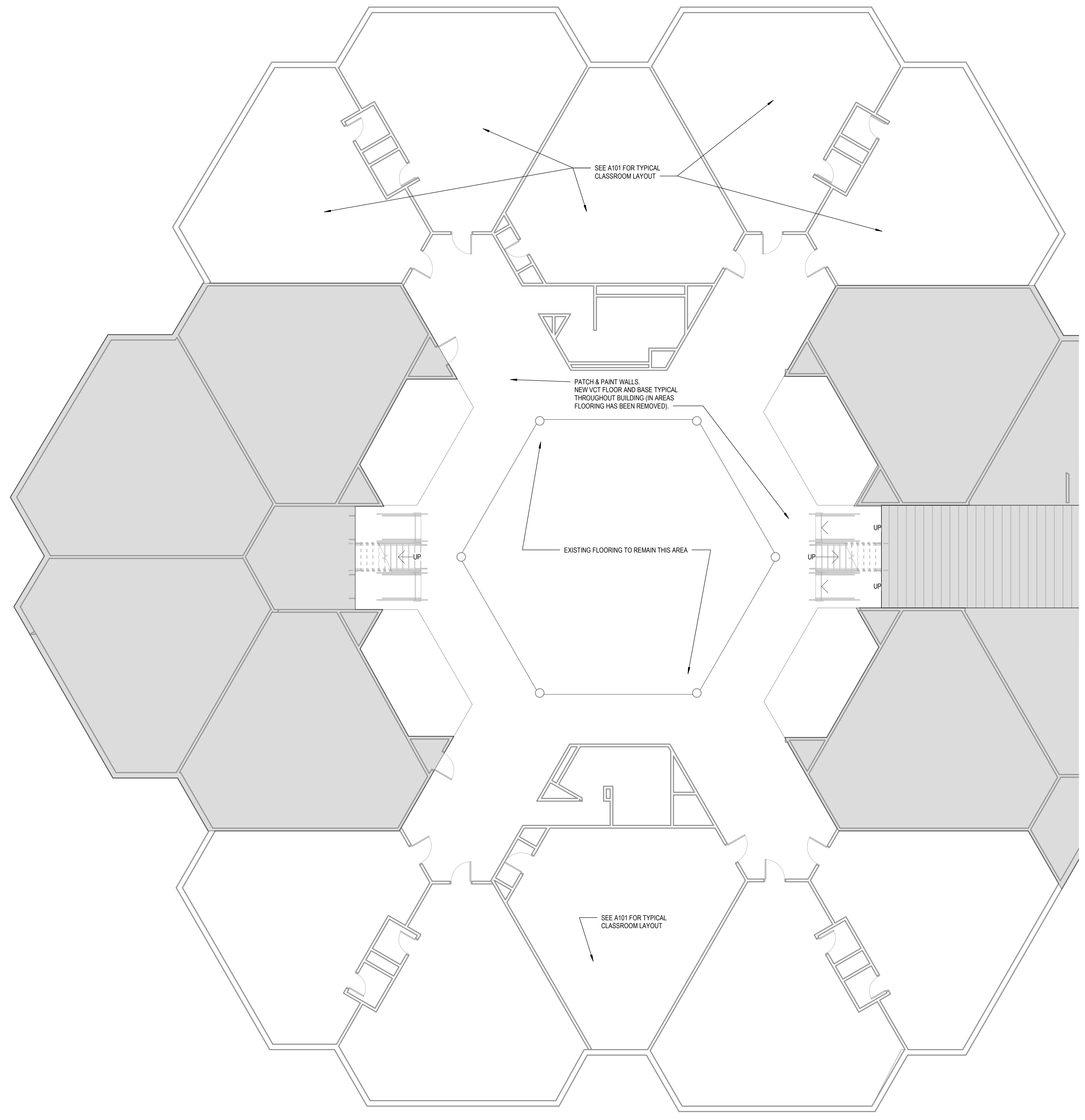
sheet number: A102

job number:

### GENERAL NOTES - ARCHITECTURAL

1. ALL DIMENSIONS ARE DRAWN TO FINISH FACE OF WALL.
2. DO NOT SCALE DRAWINGS. DIMENSIONS LOCATED ON PLANS, ELEVATIONS, AND DETAILS SHALL GOVERN OVER SMALL SCALE DETAILS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
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4. PROVIDE METAL STUD FRAMING AROUND ALL PENETRATIONS THRU METAL STUD PARTITIONS.

**SPEC**  
ROSE HOOK (RHADA):  
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENT.  
PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:  
A. AMERICAN SPECIALTIES, INC.  
B. BOBRICK WASHROOM EQUIPMENT, INC.  
C. BRADLEY CORPORATION  
D. GAMCO SPECIALTY ACCESSORIES: A DIVISION OF BOBRICK  
2. DESCRIPTION: SINGLE PRONG UNIT  
3. MATERIAL AND FINISH: STAINLESS STEEL, ASTM A480/A480M NO 4 FINISH (SATN).



**1** SECOND FLOOR EXISTING/DEMO/NEW  
A103 SCALE: 1/8" = 1'-0"



RENOVATIONS TO  
BARBARA BOOKER SCHOOL  
Project Address

no.	description	date
Sheet Revisions		

no.	description	date
Project Issues		

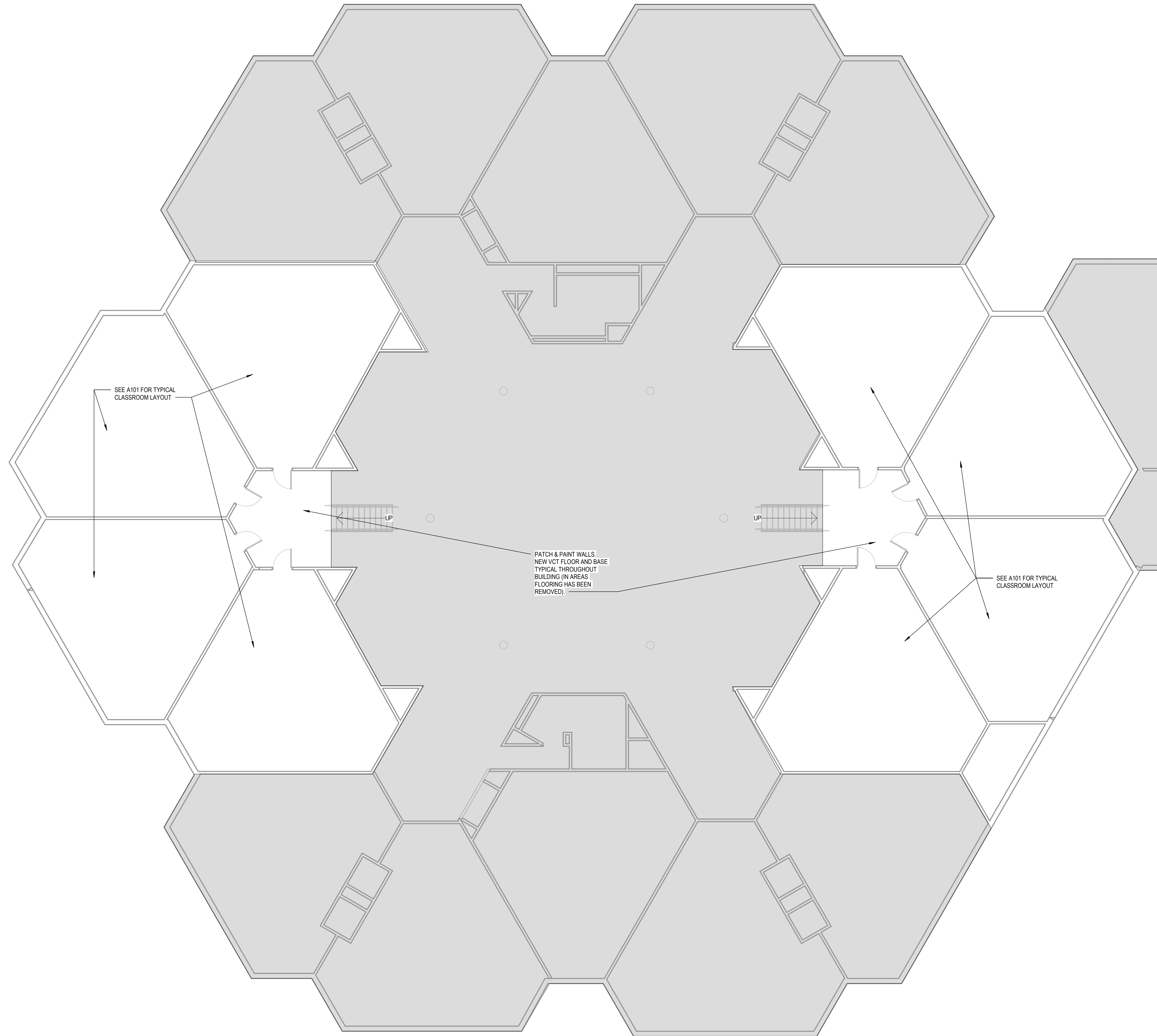
design and construction documents are instruments of service and are to be used only for the project and location specified. any other use without the express written consent of thedesignarchitecture llc is strictly prohibited without expressed written consent of thedesignarchitecture llc.  
sheet name:  
SECOND FLOOR PLAN

drawn by:   
checked by:   
sheet number:   
job number:

GENERAL NOTES - ARCHITECTURAL

1. ALL DIMENSIONS ARE DRAWN TO FINISH FACE OF WALL.
2. DO NOT SCALE DRAWINGS. DIMENSIONS LOCATED ON PLANS, ELEVATIONS, AND DETAILS SHALL GOVERN OVER SMALL SCALE DETAILS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
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**SPEC**  
 ROBE HOOK (RHADA):  
 1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENT, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:  
 A. AMERICAN SPECIALTIES, INC.  
 B. BOBRICK WASHROOM EQUIPMENT, INC.  
 C. BRADLEY CORPORATION  
 D. GAMCO SPECIALTY ACCESSORIES, A DIVISION OF BOBRICK  
 2. DESCRIPTION: SINGLE PRONG UNIT  
 3. MATERIAL AND FINISH: STAINLESS STEEL, ASTM A480/A483M NO 4 FINISH (SATIN).



1 SECOND FLOOR MEZZANINE EXISTING/DEMO/NEW  
 A104 SCALE: 1/8" = 1'-0"



RENOVATIONS TO  
 BARBARA BOOKER SCHOOL  
 Project Address

no.	description	date

no.	description	date

Project Issues

design and construction documents as instruments of service are prepared by tda the design architecture llc. the use of this design and these construction documents for any purpose other than that intended hereon is strictly prohibited without expressed written consent of tda the design architecture llc.

sheet name:  
 SECOND FLOOR MEZZANINE PLAN

drawn by:

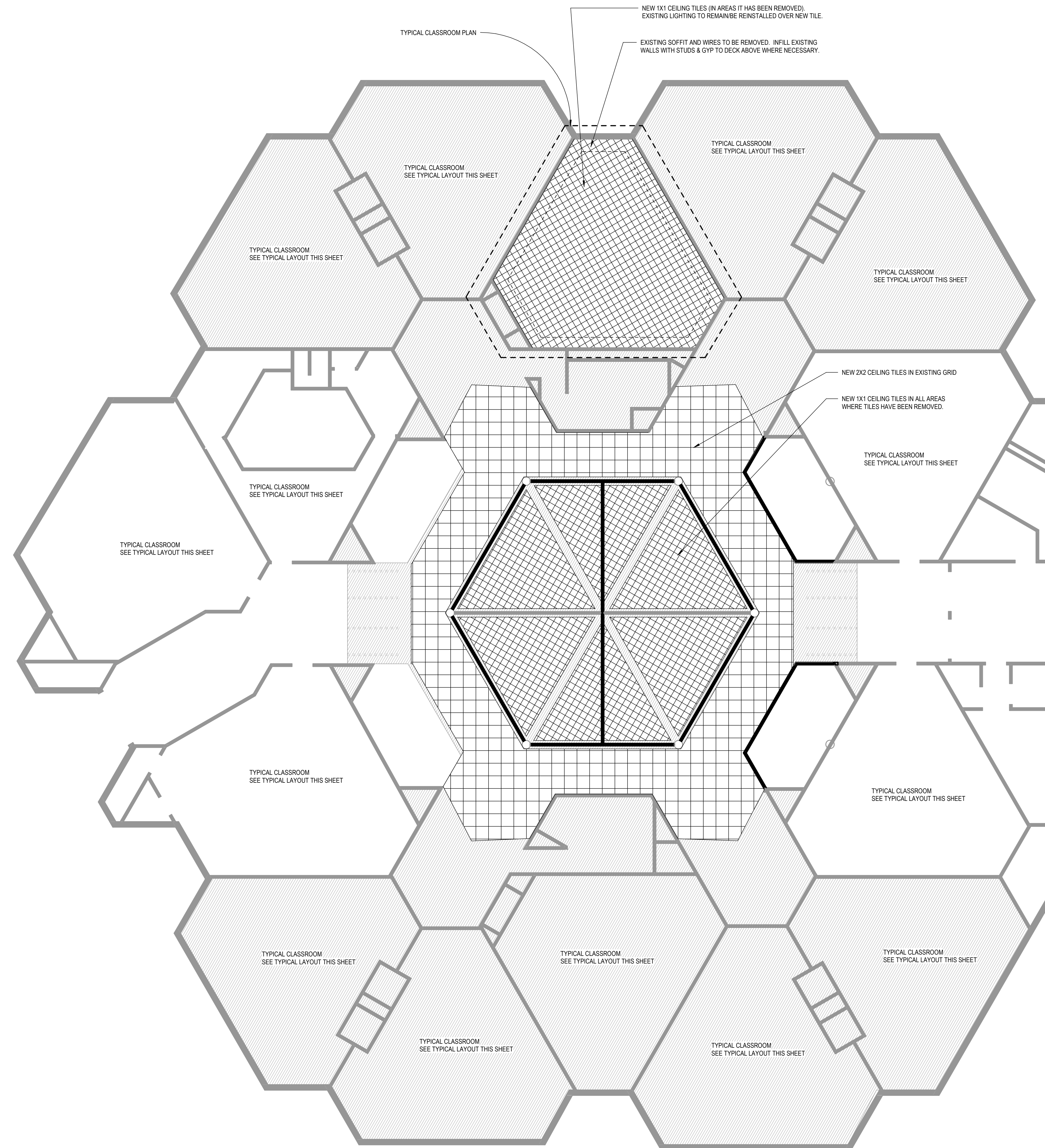
checked by:

sheet number:

job number:

GENERAL NOTES - CEILING PLAN

- 1. CEILING PLANS MAY NOT INDICATE ALL MECHANICAL, ELECTRICAL, PLUMBING, AND TECHNOLOGY ITEMS. SEE MECHANICAL/ELECTRICAL DRAWINGS FOR FURTHER REQUIREMENTS.
- 2. NEW SUSPENDED GRID CEILINGS SHALL BE ARRANGED SO THAT GRID IS SPACED EQUALLY FROM MOST REMOTE WALL IN EACH DIRECTION, WITH NO TILE LESS THAN 6" UNLESS OTHERWISE INDICATED.
- 3. PROVIDE CONTROL JOINTS AS NOTED OR REQUIRED TO PREVENT CRACKING.
- 4. WHERE SUPPORT WIRES FOR ACOUSTICAL CEILING GRID CANNOT BE INSTALLED VERTICALLY, THE CONTRACTOR SHALL PROVIDE A UNISTRUT™ BENEATH THE OBSTRUCTION AS TO PERMIT WIRES TO BE VERTICALLY ATTACHED TO THE UNISTRUT™.
- 5. PAINT ALL EXPOSED STRUCTURAL STEEL.
- 6. CONTRACTOR SHALL PROVIDE HOLD-DOWN CLIPS AT VESTIBULE.



**1** TYPICAL RCP 1ST & 2ND FLOORS  
 A201 SCALE: 1/8" = 1'-0"

no.	description	date
-----	-------------	------

Sheet Revisions

no.	description	date
-----	-------------	------

design and construction documents are instruments of service and shall be used only for the project and location specified. Any other use, reproduction, or distribution of these documents without the written consent of thedesign architecture llc is strictly prohibited. thedesign architecture llc  
 sheet name:  
 TYPICAL RCP 1

drawn by:   
 checked by:   
 sheet number:   
 job number:

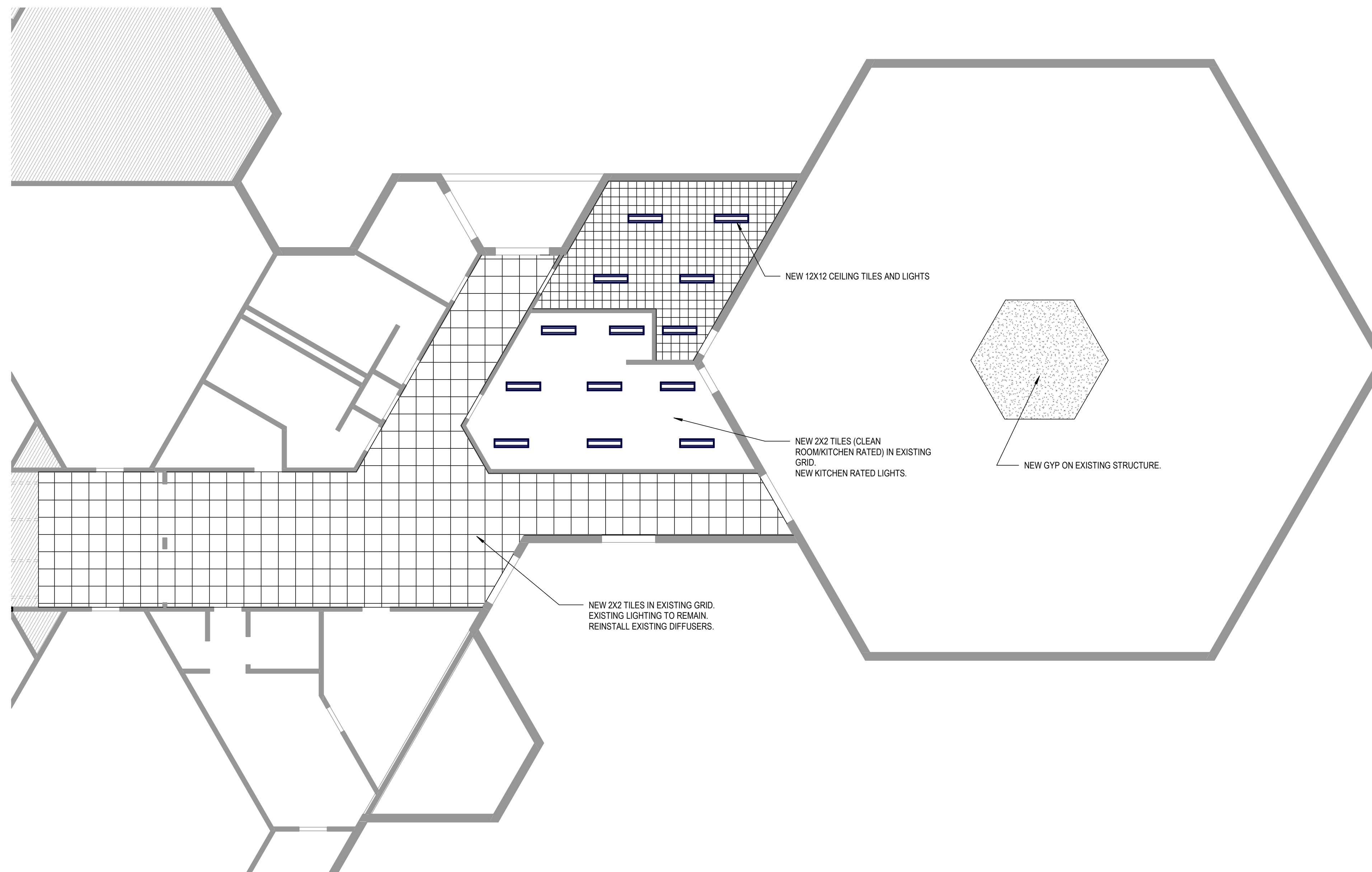
**GENERAL NOTES - CEILING PLAN**

1. CEILING PLANS MAY NOT INDICATE ALL MECHANICAL, ELECTRICAL, PLUMBING, AND TECHNOLOGY ITEMS. SEE MECHANICAL/ELECTRICAL DRAWINGS FOR FURTHER REQUIREMENTS.
2. NEW SUSPENDED GRID CEILINGS SHALL BE ARRANGED SO THAT GRID IS SPACED EQUALLY FROM MOST REMOTE WALL IN EACH DIRECTION, WITH NO TILE LESS THAN 6" UNLESS OTHERWISE INDICATED.
3. PROVIDE CONTROL JOINTS AS NOTED OR REQUIRED TO PREVENT CRACKING.
4. WHERE SUPPORT WIRES FOR ACOUSTICAL CEILING GRID CANNOT BE INSTALLED VERTICALLY, THE CONTRACTOR SHALL PROVIDE A UNISTRUT BENEATH THE OBSTRUCTION AS TO PERMIT WIRES TO BE VERTICALLY ATTACHED TO THE UNISTRUT.
5. PAINT ALL EXPOSED STRUCTURAL STEEL.
6. CONTRACTOR SHALL PROVIDE HOLD-DOWN CLIPS AT VESTIBULE.

**CEILING SYMBOLS**

- DIFFUSER (SUPPLY)
- DUCT OR REGISTER (RETURN OR EXHAUST)
- 2'x4' SUSPENDED LAY-IN ACOUSTICAL CEILING
- 2'x2' SUSPENDED LAY-IN ACOUSTICAL CEILING
- SUSPENDED GYPSUM BOARD FASCIA, SOFFIT OR CEILING
- EXTERIOR GYPSUM BOARD SOFFIT (MOISTURE RESISTANT IF INTERIOR)
- EXP - EXPOSED STRUCTURE AND MTL DECK
- 2' X 4' LAY-IN FIXTURE
- 2' X 2' LAY-IN FIXTURE
- 1' X 4' LAY-IN FIXTURE
- DOWN LIGHT FIXTURE
- CEILING HEIGHT & TYPE
- CMU LINTEL, PAINTED
- EXPOSED STRUCTURE
- CEILING ACCESS PANEL - COORDINATE LOCATION WITH ABOVE CEILING EQUIPMENT ACCESS.
- EXTERIOR LIGHT
- PENDANT LIGHT FIXTURE
- 2' X 4' LAY-IN FIXTURE
- 2' X 2' LAY-IN FIXTURE
- CURTAIN TRACK
- 2' X 4' RADIAL GEOMETRIC DIFFUSER
- ROLLER SHADE
- MOTORIZED ROLLER SHADE

SEE ELECTRICAL DWGS FOR FURTHER INFO ON LIGHT FIXTURES AND TYPES



1 FIRST FLOOR MEZZANINE PARTIAL RCP  
A202 SCALE: 1/8" = 1'-0"

no.	description	date
Sheet Revisions		

no.	description	date
Project Issues		

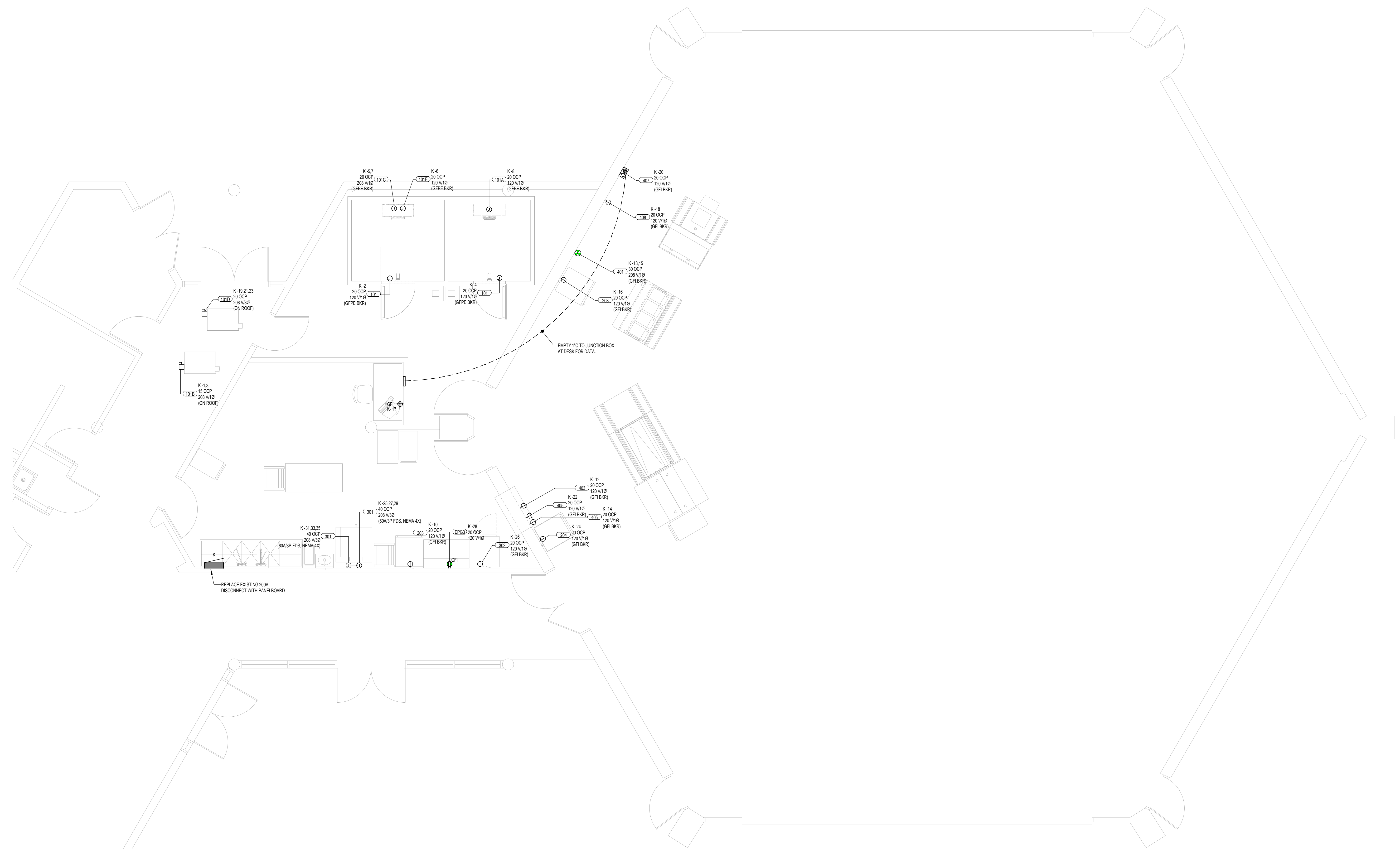
design and construction documents as instruments of service are prepared by the registered professional architect of record, the use of this design and these construction documents by any other person without the expressed written consent of theendesign architecture llc. sheet name: FIRST FLOOR MEZZANINE PARTIAL RCP

drawn by:  
**Author**

checked by:  
**Checker**

sheet number:  
**A202**

job number:  
**00000**



### ELECTRICAL PLAN

1/4" = 1'-0"

NOTE: ALL RECEPTACLES ON THIS DRAWING SHALL BE GFCI PROTECTED PER N.E.C. 210.8(B).

#### PANELBOARD DESIGNATION: K

LOCATION: VOLTS: 120/208 V<sub>LINE</sub> A.I.C. RATING: 10K  
SUPPLY FROM: PHASES: 3 MAINS TYPE: MCB  
MOUNTING: WIRES: 4 MAINS RATING: 200  
SPECIAL REQUIREMENTS: BUS RATING: 200

NOTE	CKT	DESCRIPTION	-A	-P	A	B	C	-P	-A	DESCRIPTION	CKT	NOTE		
--	1	COOLER COMPRESSOR	20	2	0.6	1.0			1	20	WALK-IN COOLER/FREEZER	2	GFE	
--	3	WALK-IN FREEZER COIL	--	--		0.6	1.0		1	20	WALK-IN COOLER/FREEZER	4	GFE	
--	5	WALK-IN FREEZER COIL	20	2			1.0	0.6	1	20	FREEZER COIL HEAT TAPE	6	GFE	
--	7	SPARE	--	--	1.0	0.6				1	20	WALK-IN COOLER COIL	8	GFE
--	9	SPARE	30	2		0.0	1.4		1	20	HOT FOOD CABINET	10	GFI	
--	11	SPARE	--	--			0.0	0.9	1	20	COLD FOOD TABLE	12	GFI	
--	13	HOT FOOD TABLE	30	2	1.8	0.4			1	20	MILK COOLER	14	GFI	
--	15	REC. OFFICE	20	1		1.8	1.4		1	20	HOT FOOD CABINET	16	GFI	
--	17	FREEZER COMPRESSOR	20	3		0.4	1.2	1	20	LOW PROFILE AIR CURTAIN	18	GFI		
--	19	FREEZER COMPRESSOR	30	3	1.4	1.2			1	20	CASH REGISTER/FDS - BY OWNER	20	GFI	
--	21	SPARE	--	--		1.4	0.4		1	20	MILK COOLER	22	GFI	
--	23	CONVECTION OVEN	--	--		1.4	1.8	1	20	COLD FOOD CABINET	24	GFI		
--	25	SPARE	60	3	3.7	0.6			1	20	REFRIGERATOR	26	GFI	
--	27	SPARE	--	--		3.7	0.2		1	20	GENERAL PURPOSE DUPLEX	28		
--	29	SPARE	--	--			3.7	0.0	1	20	SPARE	30		
--	31	CONVECTION OVEN	60	3	3.7	0.0			1	20	SPARE	32		
--	33	SPARE	--	--		3.7	0.0		1	20	SPARE	34		
--	35	SPARE	--	--			3.7	0.0	1	20	SPARE	36		
--	37	SPARE	20	1	0.0	0.0			1	20	SPARE	38		
--	39	SPARE	20	1		0.0	0.0		1	20	SPARE	40		
--	41	SPARE	20	1		0.0	0.0		1	20	SPARE	42		
--	43	SPARE	20	1	0.0	0.0			1	20	SPARE	44		
--	45	SPARE	20	1	0.0	0.0			1	20	SPARE	46		
--	47	SPARE	20	1	0.0	0.0			1	20	SPARE	48		
--	49	SPARE	20	1	0.0	0.0			1	20	SPARE	50		
GFI	51	SPARE	20	1		0.0	0.0		1	20	SPARE	52	GFI	
GFI	53	SPARE	20	1		0.0	0.0		1	20	SPARE	54	GFI	
GFI	55	SPARE	20	1	0.0	0.0			1	20	SPARE	56	GFI	
GFI	57	SPARE	20	1	0.0	0.0			1	20	SPARE	58	GFI	
GFI	59	SPARE	20	1	0.0	0.0			1	20	SPARE	60	GFI	
KVA SUB TOTALS			15.9	15.6	14.8					KVA TOTAL			46.3	
AMPS SUB TOTALS			133.7	130.8	123.3					AMP TOTAL			128.5	

**PANELBOARD SCHEDULE CIRCUIT BREAKER NOTES**

- \* ALL BREAKERS SHALL BE "AIC" RATED
- \* NOT ALL NOTES MAY APPLY TO THIS PROJECT.
- GFI - 5mA GFI TYPE FOR PERSONNEL PROTECTION
- SFE - 30mA GFI TYPE FOR EQUIPMENT PROTECTION
- AF - "ARC-FAULT" TYPE
- AF/F - COMBINATION "ARC-FAULT"/5mA GFI TYPE
- ST - SHUNT-TRIP TYPE
- ET - ELECTRONIC TRIP TYPE
- L - BREAKER TO HAVE LOCK-ON CLIP
- UR - BREAKER TO HAVE LOCK-ON CLIP AND RED MARKING
- HT - FURNISH AND INSTALL HANDLE TIES FOR MULTIPLE CIRCUITS
- EB - EXISTING BREAKER WITH NEW CIRCUIT. EXISTING BREAKER ASSUMED TO BE SPARE OR EXISTING CIRCUIT ASSUMED DEMOLISHED DURING SCOPE OF THIS PROJECT. FIELD VERIFY.
- NB - FURNISH AND INSTALL NEW BREAKER. BREAKER SHALL MATCH EXISTING PANELBOARD MANUFACTURER, TYPE AND AIC RATING.
- ETR - EXISTING CIRCUIT TO REMAIN. LOAD SHOWN BASED UPON EXISTING DRAWINGS OR 80% OF FULLY LOADED BREAKER AMPACITY.

WHERE ROOM NAME/NUMBER IS INDICATED FOR CIRCUIT DESCRIPTION, CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT NAME/NUMBER WITH ARCHITECTURAL PLANS PRIOR TO INSTALLING CIRCUIT DIRECTORY.

#### KITCHEN EQUIPMENT SCHEDULE - KITCHEN

ITEM #	DESCRIPTION	VOLTAGE	PHASE	LOAD (kW)	HP	AMPS (A)	OCF	CIRCUIT	FEEDER	CONNECTION	ADDITIONAL INFORMATION/REQUIREMENTS	MOUNTING HEIGHT	REMARKS
101	WALK-IN COOLER/FREEZER	120 V	1	1.0 kW		8.0 A	20 A	K-4	(2) #12 & (1) #12 GND 3/4"C.	DIRECT	GFFE BKR	48"	WIRE TO JB FOR LIGHTS, DOOR HEATER
101	WALK-IN COOLER/FREEZER	120 V	1	1.0 kW		8.0 A	20 A	K-2	(2) #12 & (1) #12 GND 3/4"C.	DIRECT	GFFE BKR	48"	WIRE TO JB FOR LIGHTS, DOOR HEATER
101A	WALK-IN COOLER COIL	120 V	1	0.6 kW		5.0 A	20 A	K-8	(2) #12 & (1) #12 GND 3/4"C.	DIRECT	GFFE BKR	96"	WIRING FROM COIL TO TIME CLOCK
101B	COOLER COMPRESSOR	208 V	1	1.2 kW		5.7 A	15 A	K-1.3	(2) #12 & (1) #12 GND 3/4"C.	30A/3P, WP, FDS	ON ROOF	48"	REMOTE, ROOF MOUNTED COMPRESSOR UNIT FOR WALK-IN COOLER/FREEZER. TRADES TO VERIFY EXACT LOCATION.
101C	WALK-IN FREEZER COIL	208 V	1	2.0 kW	9.8 A	20 A		K-5.7	(2) #12 & (1) #12 GND 3/4"C.	DIRECT	GFFE BKR	96"	WIRING FROM COIL TO TIME CLOCK
101D	FREEZER COMPRESSOR	208 V	3	4.2 kW	11.6 A	20 A		K-19.21.23	(3) #10 & (1) #10 GND 3/4"C.	30A/3P, WP, FDS	ON ROOF	48"	REMOTE, ROOF MOUNTED COMPRESSOR UNIT FOR WALK-IN COOLER/FREEZER. TRADES TO VERIFY EXACT LOCATION.
101E	FREEZER COIL HEAT TAPE	120 V	1	0.6 kW		5.0 A	20 A	K-6	(2) #12 & (1) #12 GND 3/4"C.	DIRECT	GFFE BKR	96"	
203	HOT FOOD CABINET	120 V	1	1.4 kW		12.0 A	20 A	K-10	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	72"	
203	HOT FOOD CABINET	120 V	1	1.4 kW		12.0 A	20 A	K-16	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	72"	
204	COLD FOOD CABINET	120 V	1	1.8 kW		15.0 A	20 A	K-24	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	72"	
301	CONVECTION OVEN - DOUBLE DECK	208 V	3	11.2 kW	31.0 A	40 A		K-25.27.29	(3) #6 & (1) #10 GND 1"C.	DIRECT	60A/3P FDS, NEMA 4X	24"	
301	CONVECTION OVEN - DOUBLE DECK	208 V	3	11.2 kW	31.0 A	40 A		K-31.33.35	(3) #6 & (1) #10 GND 1"C.	DIRECT	60A/3P FDS, NEMA 4X	24"	
302	REFRIGERATOR	120 V	1	0.6 kW	4.9 A	20 A		K-26	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	90"	
401	HOT FOOD TABLE	208 V	1	3.5 kW	17.0 A	30 A		K-13.15	(2) #10 & (1) #10 GND 3/4"C.	6-30P	GFI BKR	16"	
403	COLD FOOD TABLE	120 V	1	0.9 kW	7.8 A	20 A		K-12	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	16"	
405	MILK COOLER	120 V	1	0.4 kW	3.0 A	20 A		K-22	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	16"	
405	MILK COOLER	120 V	1	0.4 kW	3.0 A	20 A		K-14	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	16"	
407	CASH REGISTER/FDS - BY OWNER	120 V	1	1.2 kW	10.0 A	20 A		K-20	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	16"	INTERWIRE TO OFFICE/CPU - VIF
408	LOW PROFILE AIR CURTAIN	120 V	1	1.2 kW	10.4 A	20 A		K-18	(2) #12 & (1) #12 GND 3/4"C.	CAP	GFI BKR	16"	
EPG3	GENERAL PURPOSE DUPLEX	120 V	1	0.2 kW	1.5 A	20 A		K-28	(2) #12 & (1) #12 GND 3/4"C.	CAP		48"	

**CONNECTION TYPES:**  
 DIRECT - DIRECT CONNECTION TO LIMIT DISCONNECT SWITCH  
 MS - MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION - TYPE AND RATING PER EQUIPMENT BEING SERVED.  
 DS - DISCONNECT SWITCH - TYPE AND RATING PER EQUIPMENT BEING SERVED.  
 FDS - FUSIBLE DISCONNECT SWITCH - TYPE, RATING, AND FUSES PER EQUIPMENT BEING SERVED.  
 WP - WEATHERPROOF TYPE

**NOTE:**  
 FOR ALL DIRECT CONNECTED EQUIPMENT, E.C. TO FURNISH WIRING WHIPS LONG ENOUGH TO PERMIT EQUIPMENT TO BE MOVED OUT FOR SERVICE/CLEANING WITHOUT REQUIRING EQUIPMENT TO BE DISCONNECTED.

no.	description	date
01	Issue For Bidding	8-5-22

no.	description	date
01	Issue For Bidding	8-5-22

3030 West Streetsboro Road, Richfield, Ohio 44286  
 (330) 659-6688 Ph.  
 (330) 659-6675 Fax

drawn by: TBA  
 checked by: TBA  
 sheet number: E-1  
 job number:  
 Project Number







GENERAL NOTES

DESIGN CRITERIA

- 1. Applicable Building Codes
A. Building: IBC 2015 | OBC 2017
1) Construction classification type: TYPE II | B
2) Primary use and occupancy classification:
a) Educational: Group E
B. Mechanical: IMC 2015 | OMC 2017
C. Plumbing: IPC 2015 | OPC 2017
D. Electrical: NEC 2017
E. Gas: IFGC 2017
F. Local Building Code and Revisions.
GENERAL
1. The Item General Contractor (G.C.) as used in these documents refers to the Contractor / Construction Manager in responsible charge of the project in terms of coordination, scheduling, subcontractor coordination, etc. This term refers to, but is not limited to, General Contractor, Construction Manager, Design Build Contractor, Prime Contractor, etc. The term is referencing the entity that coordinates the work of other trades.

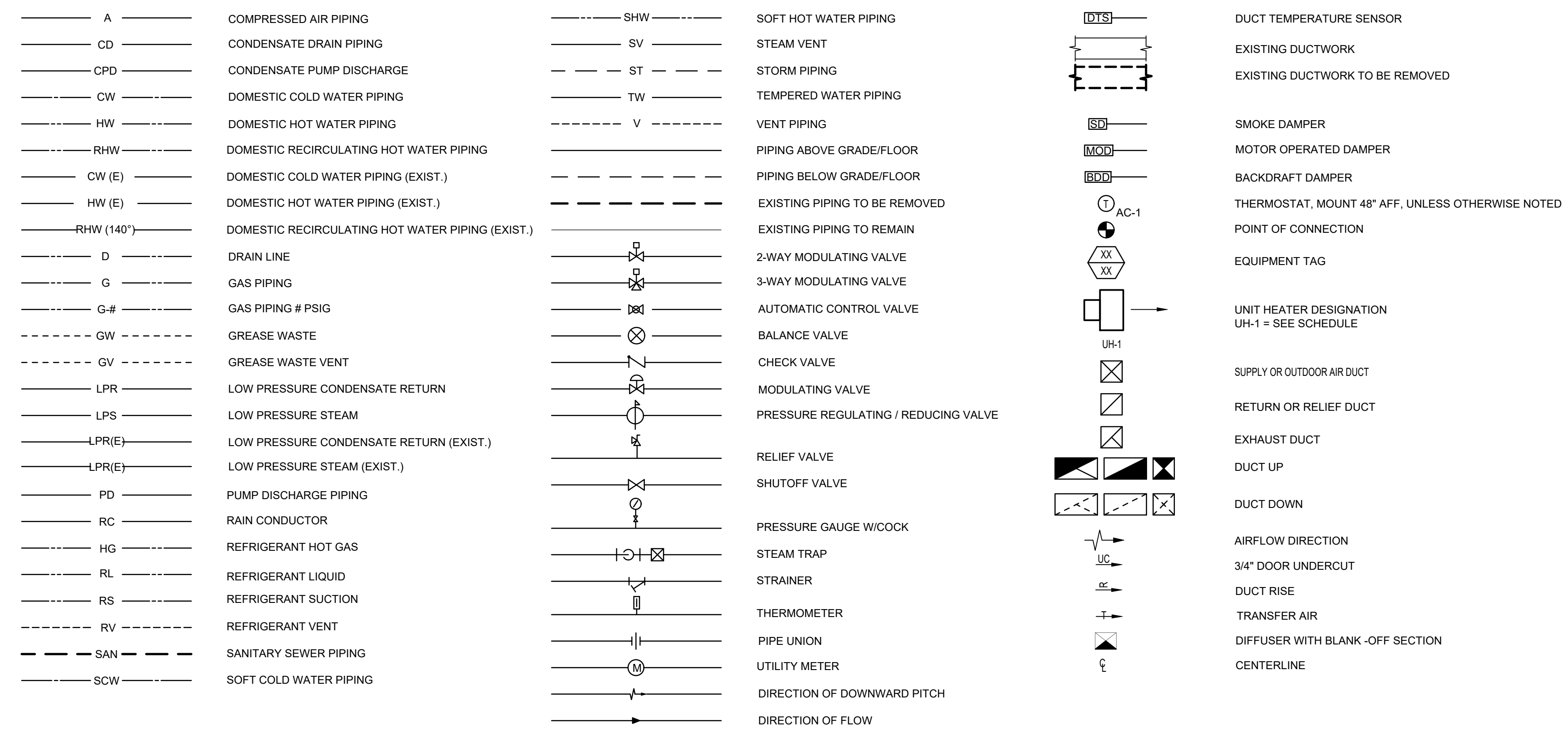
Cutting, Patching and Drilling

- A. All cutting and patching of the building construction required for this work shall be by this contractor unless shown on architectural drawings and confirmed as to size and location prior to new construction. Cutting shall be in a neat and workmanlike manner.
B. Neatly saw out all rectangular openings, set sleeve through opening, and finish patch or provide trim flange around opening.
C. Neatly saw out floors and patch floor to match existing, including floor covering.
D. Contractor shall field verify slab-on-grade or supported floor construction type prior to cutting. Under no circumstances shall this contractor cut a floor thicker than 4 inches, a structural floor slab, whether on grade or supported, without prior written approval from the architect. If floor slab indicated to be cut on mechanical plans is found to be structural in nature, do not cut. Contact architect immediately for further directions.
E. Core drill and sleeve all round openings.
F. Do not cut any structural components without architect's written approval, including, but not limited to roof joists, columns, floor joists, beams, girders, structural floor slabs, rebar, etc.
G. Patch, and finish to match adjacent areas that have been cut, damaged or modified as a result of the installation of the mechanical systems. Fire-stop all penetrations of fire-rated construction in a code approved manner.
H. All contractors shall confirm with owner, prior to bid, times available for noise producing work such as cutting and core drilling of floors, walls, etc. as well as times for work which requires access into adjoining tenant spaces. Include any premium time in bid.
I. All openings required for this branch of work shall be accomplished in time to be incorporated in, and be compatible with the construction program; otherwise this contractor shall be responsible and pay for all changes made necessary for his failure to do so. Pipe holes in floors and walls shall be core drilled if not sleeved during construction.
J. Existing slabs shall be core drilled at reentrant corners of new floor openings to prevent overcutting.
K. Refer to mechanical, plumbing, and electrical plans for location of mechanical, plumbing, and electrical equipment. Coordinate location of disconnect switch associated with each piece of mechanical and plumbing equipment with electrical contractor.
L. Installation requirements for plumbing systems shall be reviewed and coordinated with all other trades involved prior to rough-in. Give equipment shop drawings from installer/supplier/contractor equipment, as required, for review and coordination to all other trades involved. Contact architect/engineer with any discrepancies found between construction drawings and equipment being furnished prior to rough-in.
M. Firestopping
A. The contractor shall review all architectural drawings for type of walls, fire rating, & firestopping details and shall provide all fire dampers and firestopping required for these walls whether shown or not on the mechanical plans.
B. All penetrations through fire rated walls associated with the installation shall be sleeved and fire-stopped using a UL approved method. UL approved method shall meet or exceed fire rating of structure being penetrated. Reference architectural plans for fire rated structures. If shown, reference architectural, mechanical and electrical drawings for penetration details.
C. All openings through fire rated walls, floors, and/or roofs for ductwork, piping, conduit, etc. shall be fire sealed with a calcium silicate, silicone RTV foam, 3M fire rated sealants, Hill Firestop Systems, or approved equal to maintain the intended fire rating and associated UL ratings as recommended by the architect and/or sealant manufacturer.
D. All fire stopping sealants shall be firestopic so as not to slump or sag and shall be trowelable. Fire stopping sealants shall be intumescent and shall be free of asbestos, halogens, and volatile solvents.
E. Fire stopping materials shall be classified in the Underwriters Laboratories (UL) fire resistance directory or listed in the Warnock Hersey International Directory.
26. All equipment and devices for this project must be UL listed. Devices, equipment, systems shall be installed per National Electrical Code requirements and manufacturer's instructions.
27. All conduit and cabling shall be properly supported as required by the National Electrical Code. For existing installations, the contractor shall be responsible to replace and/or rework existing conduit and/or cabling that is not in compliance with this requirement.
28. Shop Areas and Material Storage
A. The contractor shall make provisions for the delivery and safe storage of his materials and equipment in coordination with the work of others. Materials and equipment shall be delivered at such stages of the work as will expedite the work as a whole and shall be marked and stored in such a way as to be easily checked and inspected. The arrival and placing of large equipment items shall be scheduled early enough to permit entry and setting when there is no restriction or problem due to size and weight.

Demolition

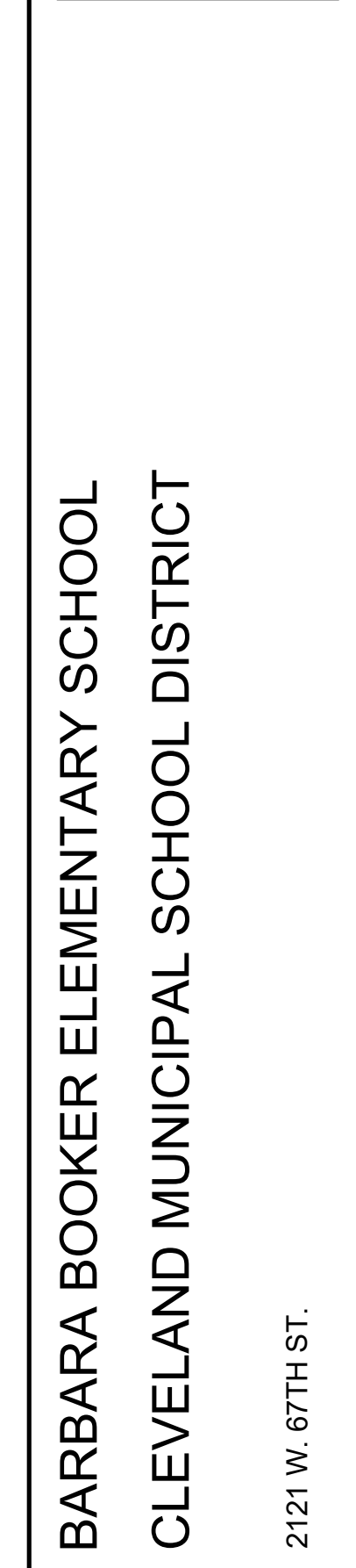
- 1. The architectural drawings are to be used only as a guideline for demolition. The contractor must visit the site prior to bidding to verify all work required for a complete job and include the cost of such work in his bid.
2. The mechanical drawings are intended to show only the general existing building construction within the area of demolition. The drawings do not show all systems, quantities, sizes, obstructions, etc., and are not intended to be used by the contractor to define the complete scope of demolition. The contractor must field verify the actual building and systems conditions to define all elements within the scope of demolition.
3. Examine areas and conditions under which demolition work must be performed. This contractor shall coordinate his work with other trades performing demolition work and/or demolition work performed by the owner. In every instance of demolition and/or remodeling, the contractor shall figure a complete job as none other shall be accepted.
4. The extent of work shown or not shown shall include removal and legally dispose off site, all the items and systems being removed.
5. This contractor shall retain on the premises in neatly stacked piles where instructed for selection by the owner, all material, wire, fixtures and/or equipment which are specified to be removed or replaced. All such items, not selected for salvage by the owner, shall become the property of this contractor and shall be removed from the premises and legally disposed.
6. Conform to all applicable codes for demolition of items and systems, safety of adjacent systems, dust control, legal run-off control, disposal and all items necessary to complete the work completely.
7. Demolition shall be done in a manner so as not to damage adjacent work and not affect the operation of systems to remain in use. Any item to remain that is damaged by the contractor shall be replaced and/or repaired at the contractor's expense.
8. Demolition and cutting shall be done in a manner which does not deform or apply loads to the existing framing and equipment of the building to remain.
9. All walls, ceilings, floors, etc., being disturbed by the work shall be returned to finished conditions to match existing by the contractor and contractor shall do his own cutting and patching as necessary under his contract.
10. The contractor shall maintain existing services to and in the existing area as required.
11. The existing systems to remain are to be supported as required until the modified elements are installed and supported.
12. If necessary, the contractor shall provide temporary services in the existing areas.
13. Existing slabs shall be saw-cut in a manner that does not cause the steel framing or the rebar supporting the slab to be cut. Contractor shall field verify slab thickness and rebar spacing.
14. Existing slabs shall be core drilled at reentrant corners of new floor openings to prevent over cutting.
15. The demolished systems shall be reduced to pieces of a weight, and transported across the remaining structure in a manner, such that the remaining structure is not overstressed.
16. Equipment and devices shall be removed complete including hangers, supports, conduit, wire, pipes, etc. Wiring shall be disconnected at circuit breakers, removed and breakers marked "spare".
17. All open ended piping that is to remain shall be capped and properly secured.
18. Any existing pipes, conduit, low voltage control, wiring and/or electrical and mechanical devices being disturbed by the work shall be reworked by this contractor as required to return to its former existing operating condition.
19. Any pipes or tubing feeding through devices or equipment being relocated, reworked, or abandoned and serving other devices, and/or equipment shall be maintained in working condition.
20. All asbestos removal will be handled by the owner and is not a part of this work.
21. Use of explosives will not be permitted.
22. Existing architectural, mechanical and electrical equipment and systems shall be protected from damage resulting from demolition.
23. Contractor shall submit a proposed deconstruction sequence to the owner and architect for review prior to commencement of work.

MECHANICAL LEGEND



ABBREVIATIONS

Table of abbreviations with columns for symbol, name, and description. Includes terms like AMPS, ADDL, AFC, AFF, AFG, AP, ARCH, BLDG, BOT, C, CB, CC, CFH, CFM, CI, CJ, CL(C), CLG, CO, COL, CONST, CONT, CONTR, CTX, CU, CUH, D, DCBP, DDCA, ASSEMBLY, DET, DF, DIA (Ø), DN, DS, DSW, DWG, DWH, EA, EC, EF, EJ, ELEC, ELEV, EM, EQ, ETR, EWC, EXIST (E), EXP, FA, FCO, FD, FFE, FPC, FS, G, GA, GALV, GC, GCO, GE, GND, GRE, GWH, HB, HE, HOA, HORIZ, HP, HVAC, HX, JB, JEC, K, KVA, KW, L, LTG, MAU, MAX, MB, MBH, MC, MECH, MFR, MIN, MTD, N, NEW, NEC, NF, NFPA, NIBH, NIC, NTS, OAI, OAC, OD, P, PC, PH (φ), PNL, PRE, PRV, PSF, PSI, PVC, RAD, RD, REOD, RHC, RHG, RPB, RPZ, SA, SECT, SG, SF, SK, SQ, STL, STRUCT, SW, SYM, TA, TC, TCC, TD, TG, TPV, TS, TYP OR T, UH, UL, UNO, UV, V, VD, VERT, VTR, W, WATS, WP, XFMR.



Project information including school name (Barbara Booker Elementary School), district (Cleveland Municipal School District), address (2121 W. 67th St.), sheet number (P-1), and date (2022-02-21). Includes a table for revisions and a section for project issues.

Thorsen + Baker + Associates CONSULTING ENGINEERS logo and contact information: 3030 West Streetsboro Road, Redfield, Ohio 44286. Phone: (330) 659-4688 Ph, (330) 659-6075 Fax.

no.	description	date
10		
09		
08		
07		
06		
05		
04		
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02		
01	Issue for Bidding	08.05.2022
no.	description	date

design and construction documents are instruments of service are prepared by Nathan Baker, Professional Engineer, No. 147263, State of Ohio, under the seal and signature of Nathan Baker, Professional Engineer, No. 147263, State of Ohio. No other person is authorized to execute any part of these documents without the express consent of thendesign architecture llc.

sheet name: FOOD SERVICE PLUMBING PLAN

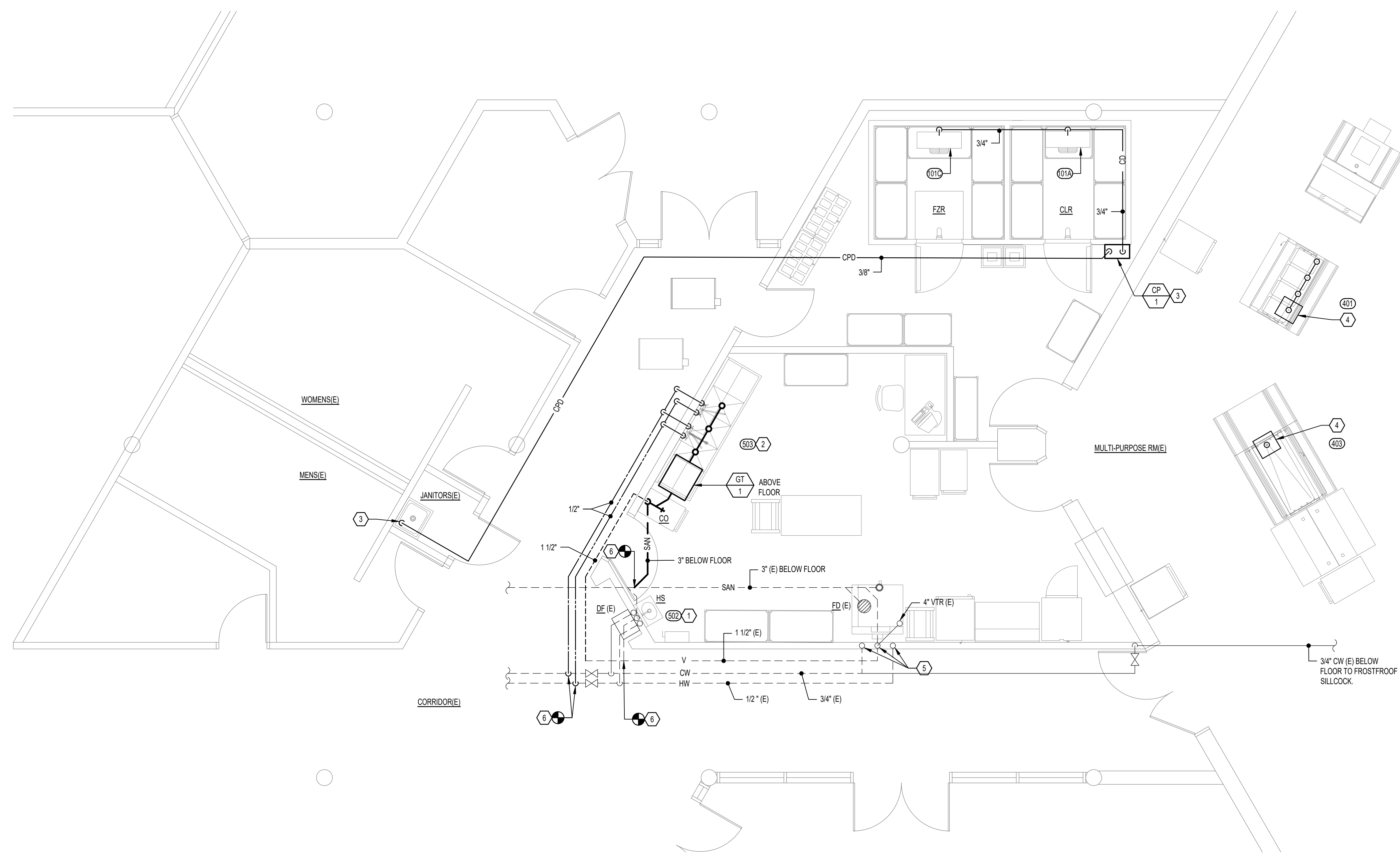
drawn by:	TBA
checked by:	TBA
sheet number:	P-2
job number:	2022-0221

**CODED NOTES:** ①

- REMOVE EXISTING HAND SINK TO MAKE ROOM FOR KEC ITEM 502. CONNECT EXISTING SAN, CW AND HW PIPING TO NEW HAND SINK.
- PROVIDE NEW SAN, CW AND HW PIPING FOR KEC ITEM 503. PROVIDE LOCAL GREASE TRAP GT-1 FOR 3 COMP SINK.
- PROVIDE CONDENSATE PUMP CP-1 FOR FREEZER FAN COIL UNIT ITEM 101C AND COOLER ITEM 101A. CONDENSATE PUMP DISCHARGE PIPING TO DRAIN INTO EXISTING JANITORS MOP SINK WITH REQUIRED AIR GAP.
- HOT FOOD TABLE ITEM 401 AND COLD FOOD TABLE ITEM 403 TO DRAIN INTO A SCHOOL PROVIDED WASTE CONTAINER.
- EXISTING SAN, CW AND HW PIPING TO BE CAPPED AND ABANDONED IN PLACE.
- CONNECT NEW PIPING TO EXISTING PIPING ABOVE THE CEILING OR BELOW THE FLOOR. VERIFY IN FIELD EXACT LOCATION AND SIZE OF PIPING TO BE EQUAL TO OR LARGER THAN THE NEW PIPING.

**GENERAL NOTES:**

- EXISTING BUILDING PLUMBING SYSTEMS SHOWN ON THESE DRAWINGS WHICH ARE TO BE REMOVED, MODIFIED OR TO REMAIN IN PLACE WERE TAKEN FROM INFO GATHERED ON A FIELD VISIT ON 5/28/22 AND ORIGINAL DRAWINGS DATED 5/5/1971 MAY NOT SHOW CURRENT INSTALLATIONS OR CONDITIONS AS THEY ARE. EACH CONTRACTOR SHALL VERIFY ALL EXISTING SYSTEMS AND THEIR CURRENT CAPACITY.
- THE COLD AND HOT WATER SYSTEMS IN THE KITCHEN ARE ASSUMED TO BE ABLE TO PROVIDE THE NECESSARY FLOW, TEMPERATURE AND PRESSURE FOR THE NEW KITCHEN EQUIPMENT. THE EXISTING KITCHEN WAS OPERATIONAL A FEW YEARS AGO AND THERE WERE NOT ANY DEFICIENCIES IN THE COLD AND HOT WATER SYSTEMS THEN.
- THE SANITARY DRAIN AND VENT SYSTEM SERVING THE KITCHEN IS ASSUMED TO BE WORKING AND ABLE TO PROVIDE THE NECESSARY DRAINAGE FOR THE NEW KITCHEN EQUIPMENT. THE NEW KITCHEN WAS OPERATIONAL A FEW YEARS AGO AND THERE WERE NOT ANY DEFICIENCIES IN THE SANITARY DRAINAGE THEN.



**FIRST FLOOR PLUMBING PLAN**  
1/4" = 1'-0"

Item	EQUIPMENT DESCRIPTION	CW (in)	HW (in)	AFF (in)	DIRECT DRAIN (in)	AFF (in)	INDIRECT AIR GAP	GAS (in)	AFF (in)	MBTUH	REMARKS
101A	COOLER COIL						CP				FSEC PIPE COIL TO CONDENSATE PUMP
101C	FREEZER COIL						CP				FSEC PIPE COIL TO CONDENSATE PUMP
502	HAND SINK W/ FOOT PEDALS	0.5	0.5	18	1.5	16					SOAP & TOWEL DISPENSER - BY OWNER
503	POT SINK	0.5	0.5	16	2						TO GREASE TRAP

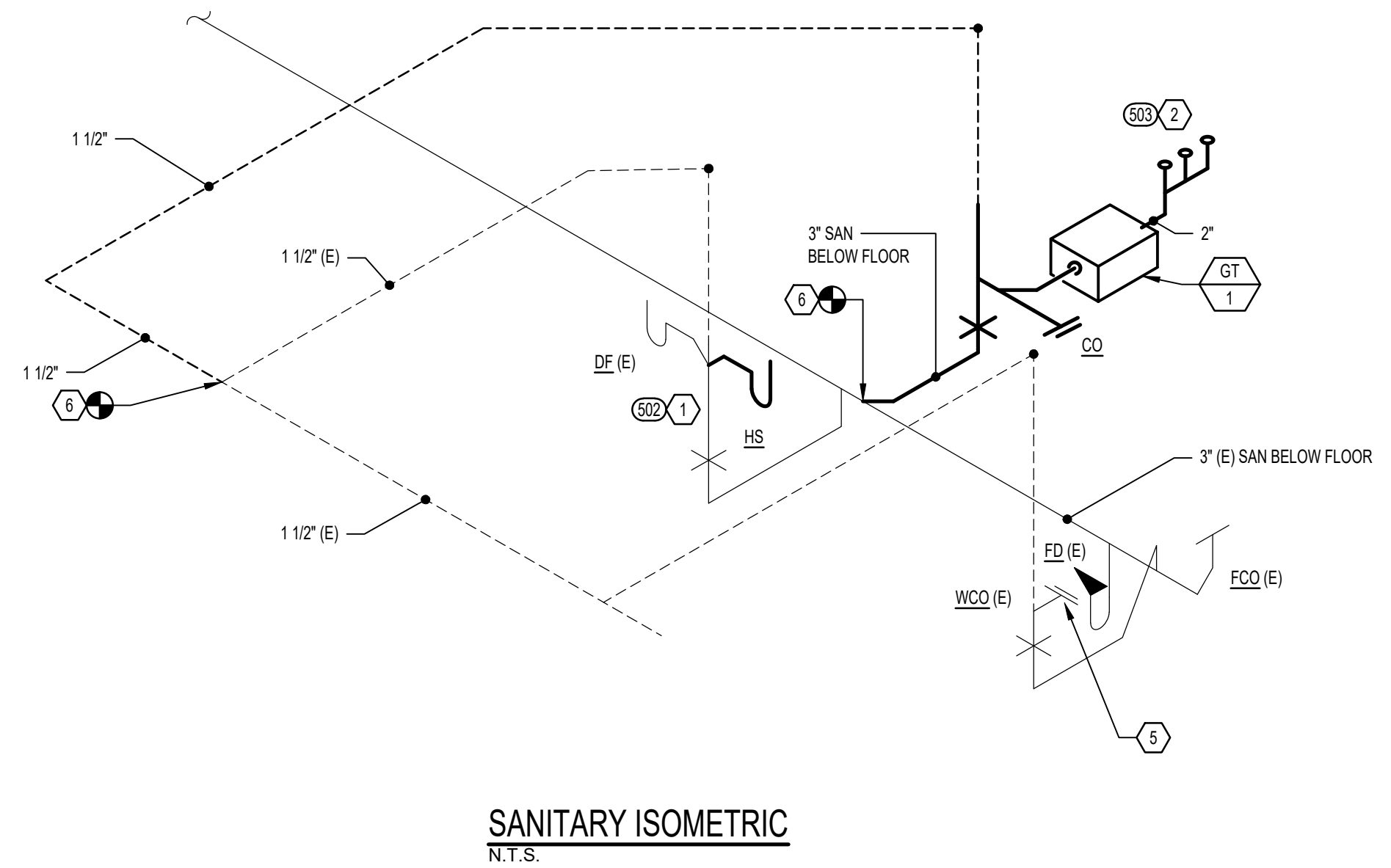
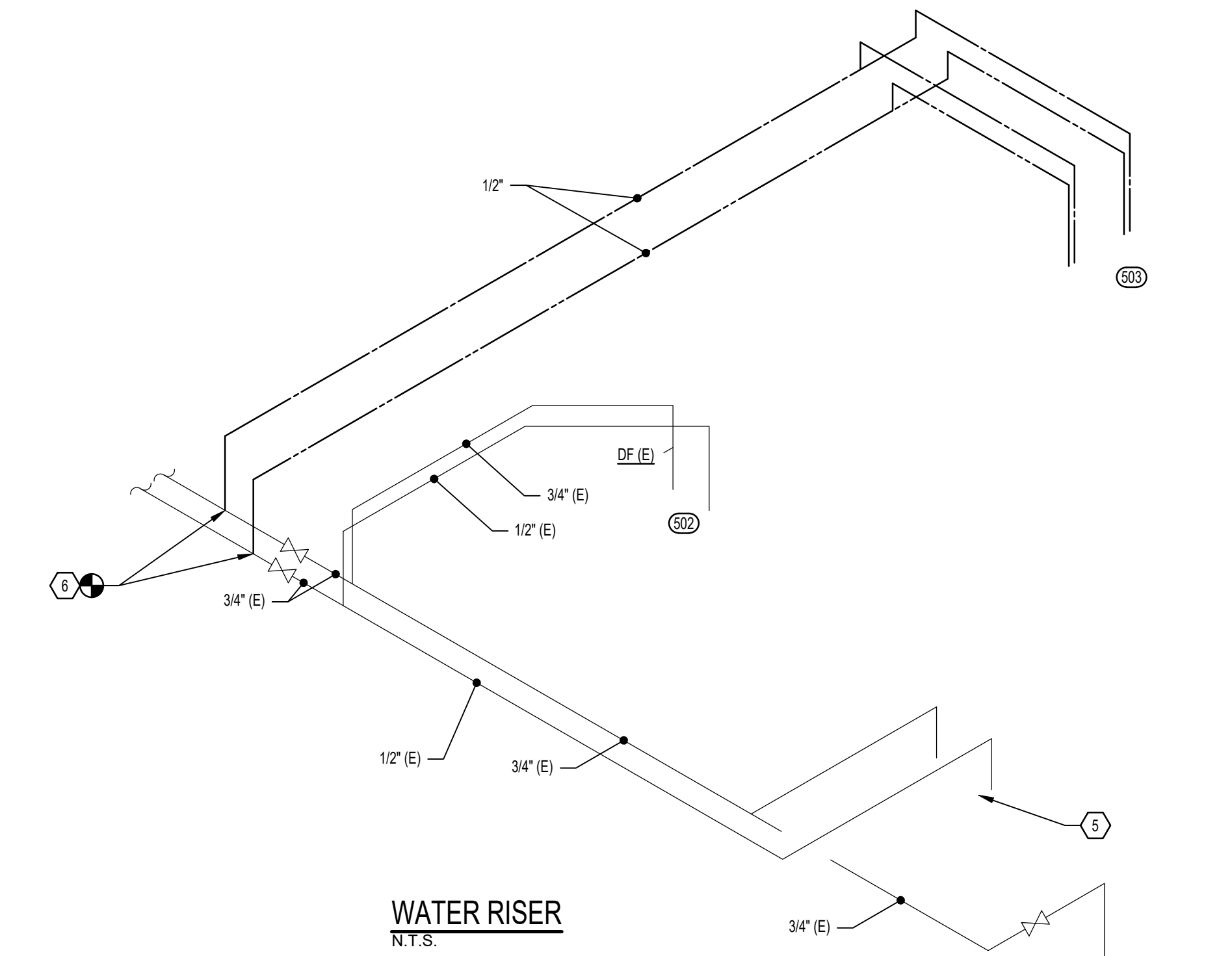
MARK	FIXTURE	MANUFACTURER	MODEL	C.W.	H.W.	SAN	VENT	DESCRIPTION
GT-1	GREASE TRAP	SCHIER	GB-2	-	-	3"	1 - 1/2"	INDOOR, ABOVE FLOOR. GREASE TRAP FOR 60 GPM FLOW / 127 LBS. GREASE CAPACITY, 30" X 22" X 13.75" WITH 3" PIPE CONNECTIONS, BOLTED GAS / WATER TIGHT PE COVER, BUILT-IN FLOW CONTROL AND INTEGRAL AIR RELIEF / ANTI-SIPHON CONSTRUCTION.

REMARKS:  
1. REFER TO SPECIFICATIONS FOR APPROVED EQUAL MANUFACTURERS.

MARK	MANUFACTURER	MODEL	TYPE	SERVICE	GPH	TOTAL HEAD (FT)	IMPELLER DIAMETER (")	HP	RPM	ELECTRICAL	OPERATING WEIGHT (LBS)	REMARKS
CP-1	LITTLE GIANT	VCL-45ULS	SUB	COND.	380	15	-	1/2	1550	VOLT. PH. FLA	13	1.2

REMARKS:  
1. ACCEPTABLE MANUFACTURERS: ARMSTRONG, AURORA, BELL AND GOSSETT, PACO, PATTERSON, PEERLESS, TACO, THRUISH, OR WEINMAN  
2. PROVIDED WITH ONE GALLON COLLECTION TANK, AUTOMATIC START AND STOP OPERATION, OVERFLOW DETECTION SWITCH, CHECK VALVE AND 6 FOOT, 3 CONDUCTOR CABLE WITH GROUNDED PLUG.

MARK	DESCRIPTION
GT-1	3-COMPARTMENT SULLERY SINK KEC #503 21 X 29 X 15.5 BOWL X 3 = 22,832 CU IN. 22,832 CU IN / 231 CU IN PER GALLON = 99 GALLONS. 99 GALLONS X 75% FULL = 74 GALLONS. 74 GAL / 2 MINUTES = 37 GPM FLOW. PROVIDED 50 GPM CAPACITY GREASE TRAP.



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MECHANICAL SPECIFICATIONS

Section 200500 - General Requirements

- A. General
1. Specifications are applicable to all contractors and/or subcontractors for all mechanical systems in Divisions 01, 20.
2. This contract is also referred to the architectural, food service and electrical and all other drawings and specifications pertinent to this project...

Section 200510 - Basic Material and Methods

- A. General
1. Provide all materials, labor, equipment, and accessories required to furnish and install the mechanical items identified in this section.
2. This section includes basic mechanical materials and methods to complement other division sections in this specification and requirements indicated on the mechanical drawings.

Section 200500 (cont.)

- F. Warranty
1. Fully warrant all materials, equipment and workmanship and the successful operation of all equipment and apparatus installed by this contractor for one (1) year from date of final acceptance.
2. Extend all manufacturers' warranties to owner, including five (5) year compressor and ten (10) year heat exchanger extended warranty on HVAC equipment to include material and labor.
3. Repair or replace without material and labor charge to the owner all items found defective during the warranty periods. In the case of replacement or repair due to failure within the warranty period, the warranty on that portion of the work shall be extended for a minimum period of one (1) year from the date of such replacement or repair.

Section 200523 - Piping and Valves

- A. General
1. Furnish all material, labor, equipment, and accessories required to install complete plumbing piping systems as indicated on drawings and in these specifications.
2. Install in full accordance with local code requirements, see other specification section for additional requirements and install in accordance to manufacturer's recommendations and requirements.

Section 200523 (cont.)

- 5. Install cleanouts at base of each vertical waste stack, each change in a direction of piping greater than 45 degrees as shown on drawings. Provide cleanouts not over 50'-0" on center along straight runs. Cleanouts shall be size of pipe to which it is installed up to 6" in diameter. Pipe over 6" in diameter shall have a 6" cleanout.
6. All fixtures and sanitary drains shall be vented as indicated on drawings and in accordance with Code. Vent pipes, where not vertical shall have continuous slope up to vent through roof.
7. Openings in pipes shall be properly plugged when work is not in progress.
8. Drain piping exposed to 140 degree temperature water shall be cast iron type piping and fittings for a minimum of 10'-0" to fixture.

Section 200593 - Testing, Adjusting, and Balancing

- A. General
1. After installation, check all equipment and perform start up in accordance with the manufacturer's instructions.
2. All piping shall be tested and free of leaks as required by the local authority having jurisdiction.
3. Work that is scheduled to be concealed or insulated shall remain uncovered until required tests have been completed. If the construction schedule requires, arrange for tests on sections of the system at a time.

Table with 4 columns: SERVICE, TEST MEDIUM, MIN. PRESSURE, TIME (HOURS). Rows include Cold Water, Hot Water, Re-circulated Hot Water, Sanitary Sewer.

- \*A minimum notice of 48 hours shall be given the architect prior to purging of any gas lines. Purging shall be to the outside of building at a safe location.
2. During the testing period, this contractor shall maintain on the job a competent individual thoroughly familiar with all phases of plumbing for as long as necessary to ensure that the contractor is able to respond to and demonstrate to the architect that they are functioning properly.
3. All hydrostatic and/or air tests shall be drained by the piping after concealed or covered. This contractor shall be responsible for completely draining the systems after hydrostatic tests are performed. Any damage from freezing prior to acceptance of the completed installation shall be repaired at the sole expense of this contractor.

Section 200523 (cont.)

- 8. All piping of plumbing system shall be tested with water or air per testing schedule.
a. Drainage system water test: provide fitting at property line or termination point for purpose of test plug. Water test shall be applied to entire system or by section. When tested in sections, at least the lower 20 feet of the next section above shall be released so that every section tested shall have at least a 20-foot head test. Hold without pressure loss for 15 minutes.
b. Drainage system air test: attach air apparatus to suitable opening, close all other inlets and outlets, and then force air into the system until there is uniform pressure, sufficient to balance a column of mercury 10" in height or 5 pounds gauge pressure on the entire system. Hold without pressure loss for 15 minutes.

Section 200700 - Insulation

- A. General
1. Furnish all material, labor and equipment as required to install complete plumbing insulation as indicated on plumbing drawings and in these specifications.
2. Install in full accordance with manufacturer's recommendations.
B. Scope: This contractor shall furnish and install all insulation necessary to the project and in accordance with the following requirements. All insulation and accessories used in an air plenum space, regardless of physical location, shall have a composite (insulation, jacket, and adhesive) fire and smoke hazard rating as tested under procedure ASTM E-84, NFPA 255 and UL 723, not exceeding a flame spread 25 and smoke developed 50. All other areas shall have insulating materials and accessories on pipes and vessels rated at a flame spread 25 and smoke developed 150 as tested by the same procedure.

Section 200510 - Basic Material and Methods

- A. General
1. Provide all materials, labor, equipment, and accessories required to furnish and install the mechanical items identified in this section.
2. This section includes basic mechanical materials and methods to complement other division sections in this specification and requirements indicated on the mechanical drawings.

Section 200523 - Piping and Valves

- A. General
1. Furnish all material, labor, equipment, and accessories required to install complete plumbing piping systems as indicated on drawings and in these specifications.
2. Install in full accordance with local code requirements, see other specification section for additional requirements and install in accordance to manufacturer's recommendations and requirements.

Section 200593 - Testing, Adjusting, and Balancing

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- 1. Start up and place all systems in operation and tag all switches and controls with permanent labels.
2. Train and instruct owner on proper operation and preventative maintenance of system.
C. Piping: Testing to be done by the contractor.
1. All piping shall be given the following pressure test without appreciable pressure drop. Contractor shall use recording line charts to record all pressure testing outcomes.

Section 200510 - Basic Material and Methods

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Section 200523 - Piping and Valves

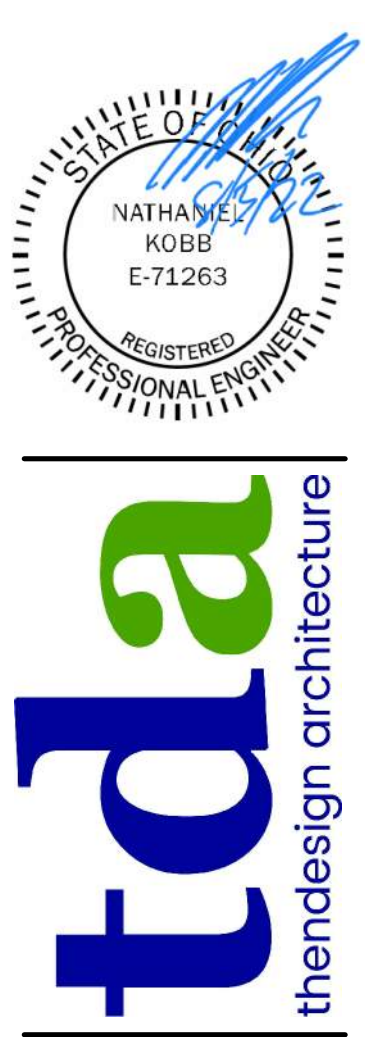
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Barbara Booker Elementary School, Cleveland Municipal School District, 12121 W. 67th St.

Table with 3 columns: no., description, date. Row 10: Issue for Bidding, 08.05.2022.

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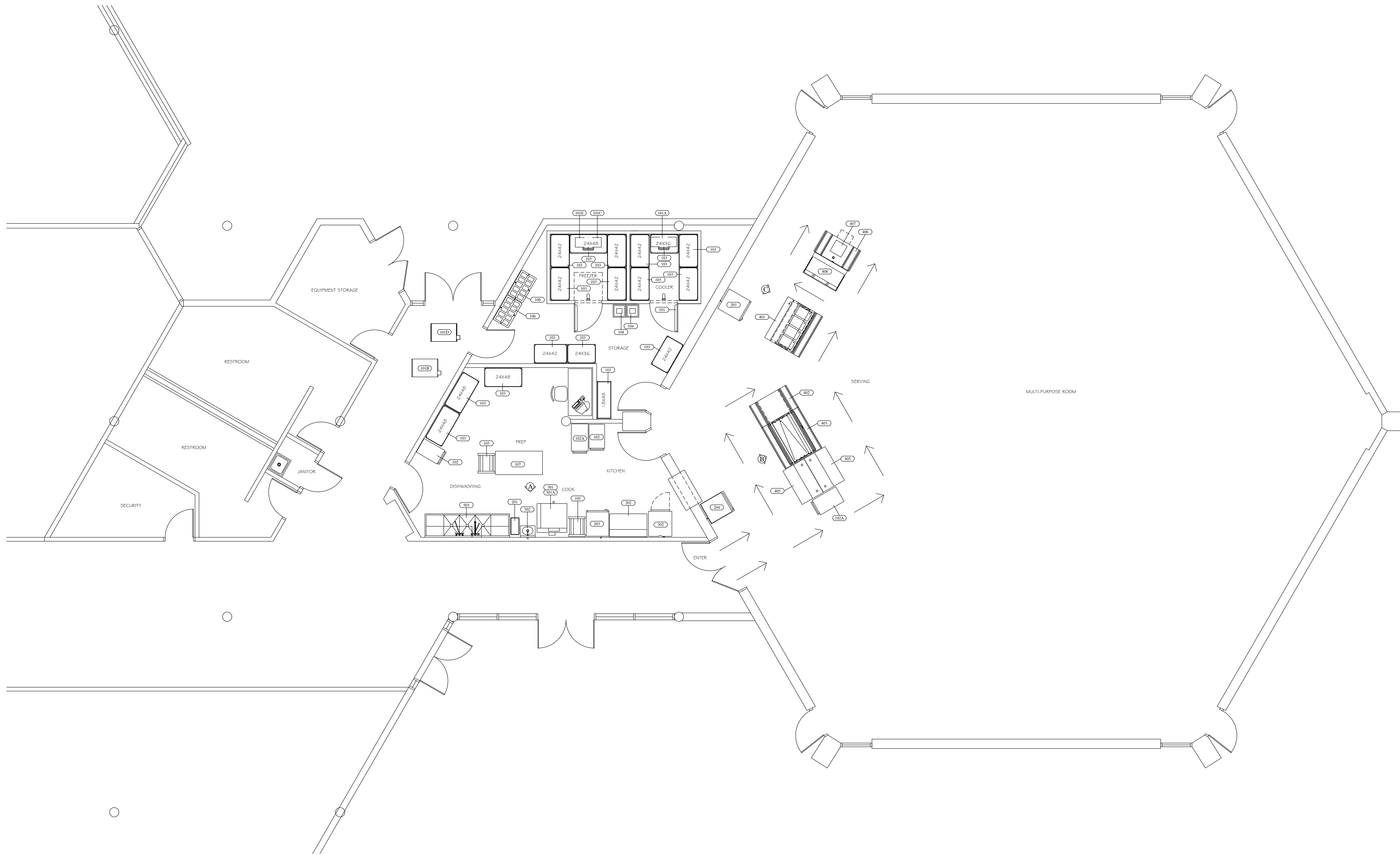
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Project Issues table with columns: no., description, date. Includes drawing by TBA, checked by TBA, sheet name, and project number 2022-0221.

Thorsen + Baker + Associates CONSULTING ENGINEERS logo and address: 3030 West Streaboro Road, Richfield, Ohio 44126. Phone: (330) 659-4668 Fax: (330) 659-6075

MECHANICAL SPECIFICATIONS



ARCHITECT:

PROJECT:  
CMSD BARBARA BOOKER ELEMENTARY  
2121 W. 67TH ST.  
CLEVELAND, OHIO 44102

SHEET TITLE:  
FOOD SERVICE  
EQUIPMENT  
FLOOR PLAN  
SCALE 1/4" = 1'-0"

DATE CODE	PROJECT PHASE	BY
12/13/21 BB1FP	SCHEMATIC DESIGN	CM
01/03/22 BB2FP	CONSTRUCTION DOCUMENTS	CM
01/06/22 BB3FP	BIDS	CM

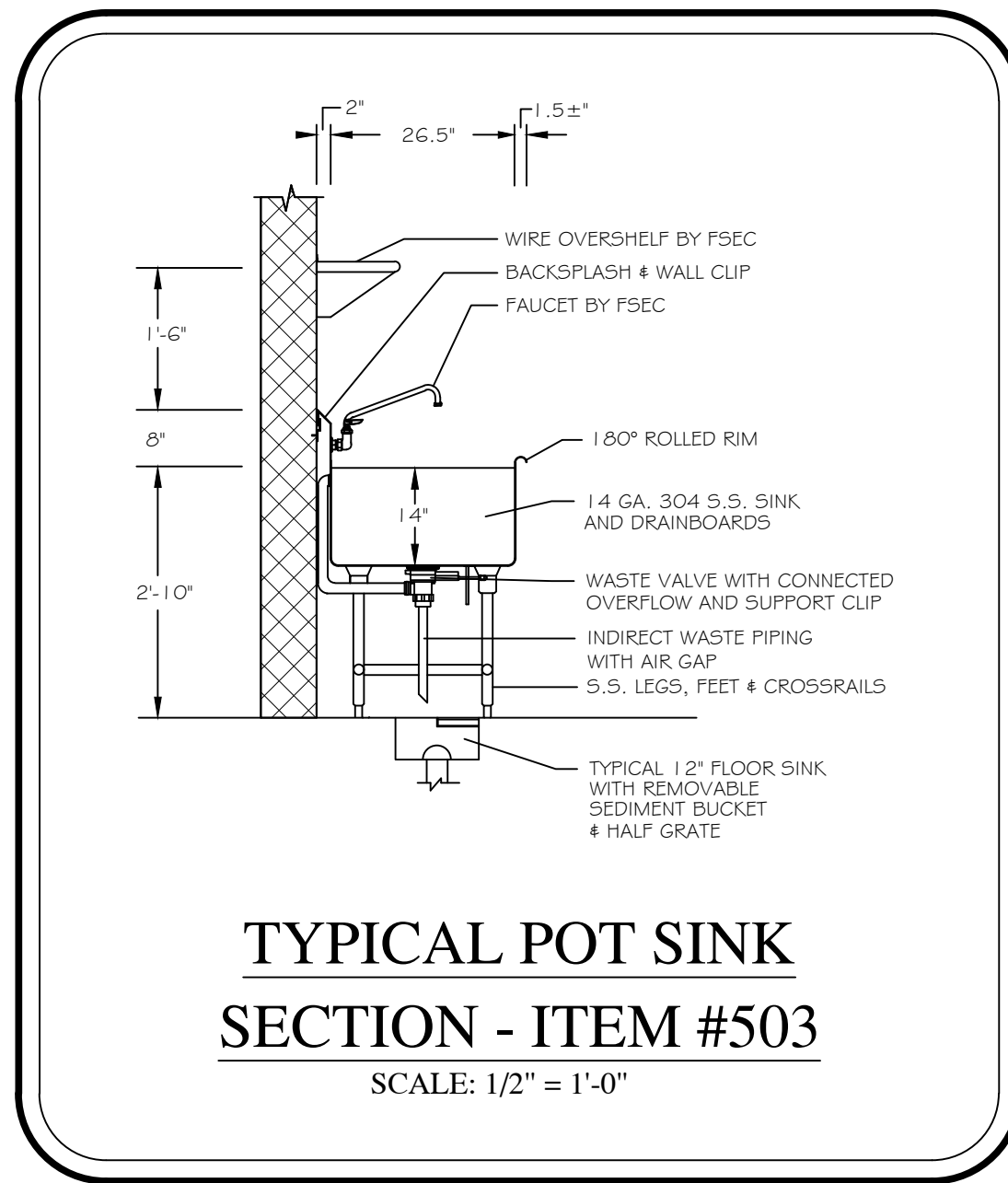
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SHEET NUMBER:

**FSE-1**

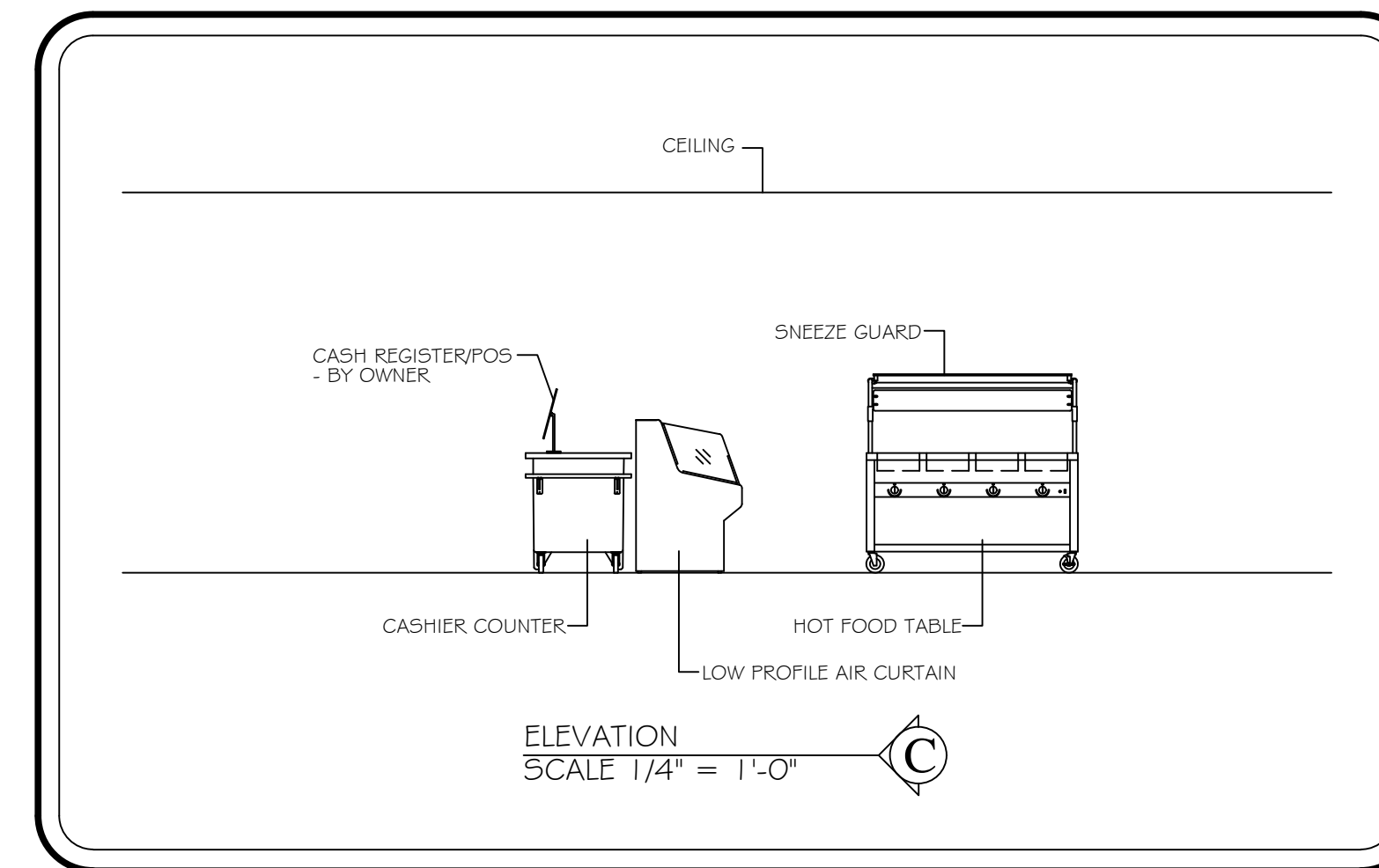
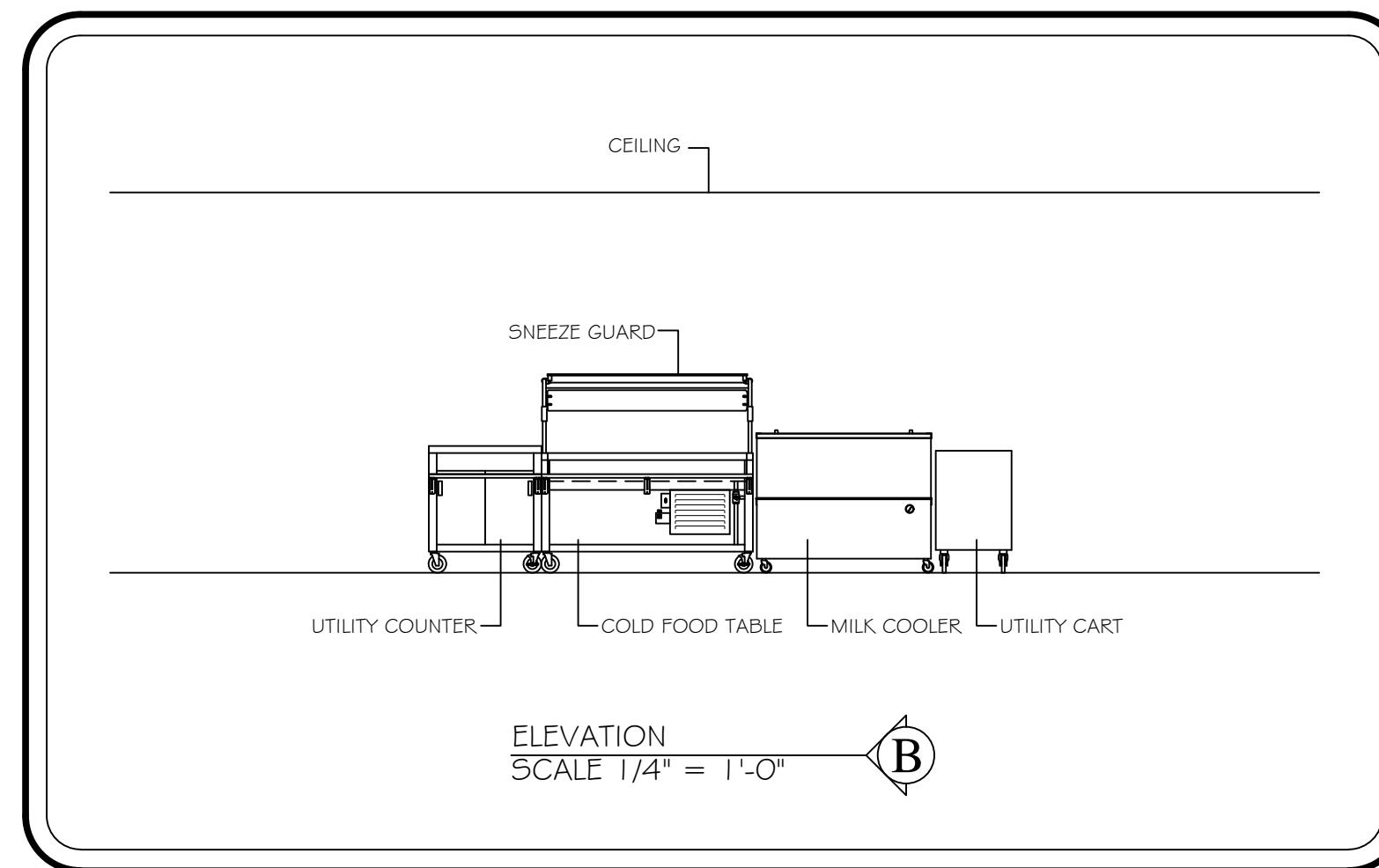
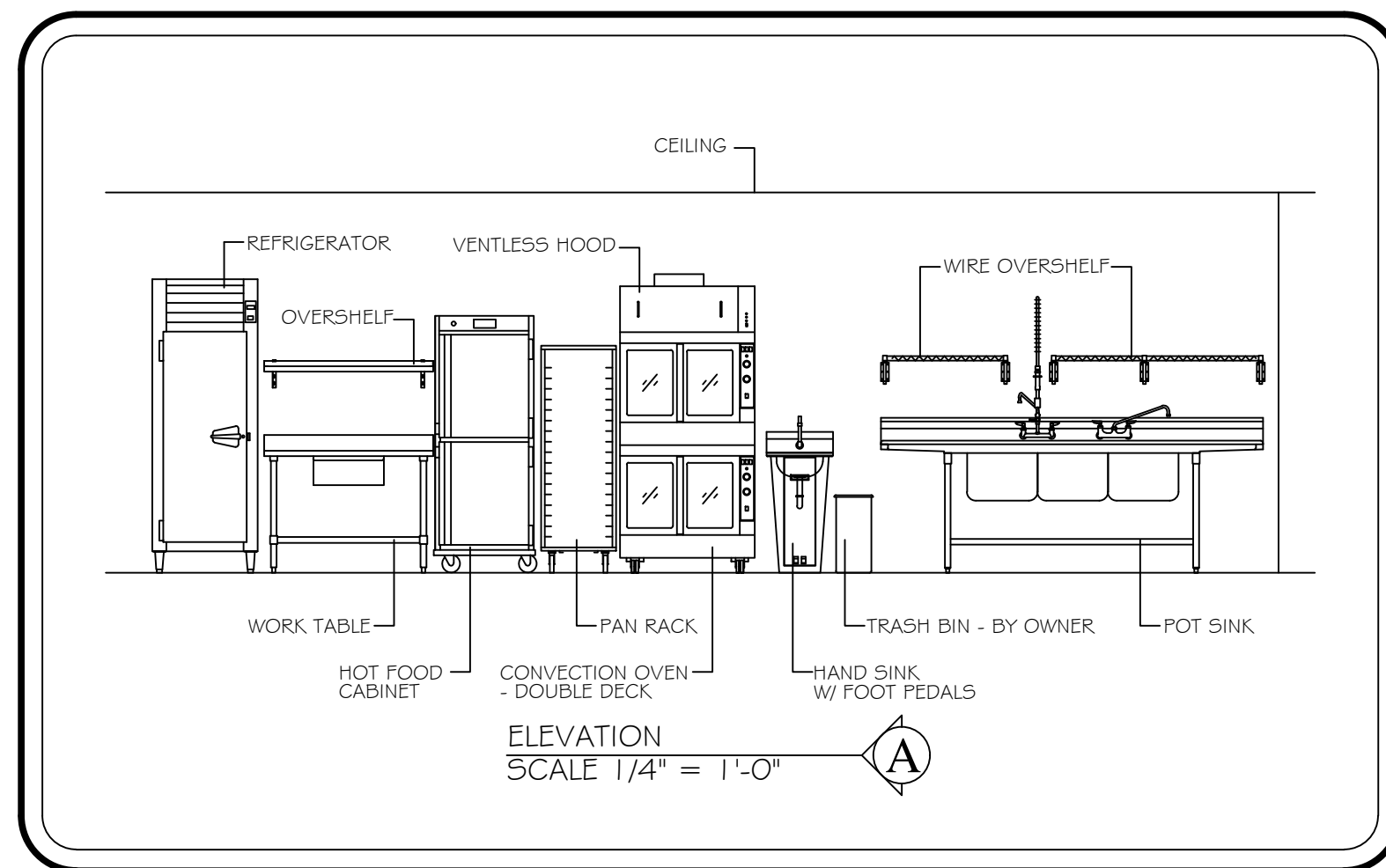
**NOTE:**

1. FSEC SHALL VERIFY ROUGHIN REQUIREMENTS FOR FUTURE. PURVEYOR SUPPLIED, OWNERS RELOCATED EQUIPMENT, OWNER SUPPLIED EQUIPMENT, ETC.
2. TRADES TO REUSE EXISTING ROUGHINS WHERE APPLICABLE.
3. TRADES SHALL DISCONNECT, REMOVE, STORE & RECONNECT ANY EXISTING EQUIPMENT AS REQUIRED FOR CONSTRUCTION PURPOSES.
4. EQUIPMENT NOT BEING REUSED TO BE DISCONNECTED BY TRADES AND STORED OR DISCARDED BY THE FSEC AS DIRECTED BY OWNER.
5. EQUIPMENT DESIGNATED AS RELOCATED SHALL BE DISCONNECTED BY THE TRADES AND RELOCATED BY THE FSEC AS PER PLANS AND SPECIFICATIONS.



EQUIPMENT SCHEDULE																
Item	Qty	DESCRIPTION	CW (in)	HW (in)	INDIRECT DRAIN	DIRECT DRAIN (IN)	GAS (in)	MBTUH	EXH DUCT	EXH CFM	MUA DUCT	MUA CFM	Volts	Ph	Amps load	Equipment Remarks
101	1	WALK-IN COOLER/FREEZER											120	1	(2) 8.0	INSULATED FLOOR: SEE REFRIGERATION PLAN
101A	1	COOLER COIL				FFD							120	1	5.0	
101B	1	COOLER COMPRESSOR											208	3	10.0	ROOF CURBS BY FSEC
101C	1	FREEZER COIL				FFD							208	1	15.0	
101D	1	FREEZER COMPRESSOR											208	3	15.0	ROOF CURBS BY FSEC
101E	1	FREEZER COIL HEAT TAPE											120	1	5.0	
102	2	UTILITY CART														
102A	2	UTILITY CART														
103	17	SHELVING														
104	2	MILK CRATE DOLLY														
105	2	PAN RACK														
106	2	DUNNAGE RACK														
107	1	PORTABLE TABLE														S.S. UNDERSHELF & CASTERS
201	1	TRASH BIN - BY OWNER														
202	1	WORK TABLE														
203	2	HOT FOOD CABINET											120	1	12.0	
204	1	COLD FOOD CABINET											120	1	15.0	
301	1	CONVECTION OVEN - DOUBLE DECK											208	3	(2) 31.0	
301A	1	VENTLESS HOOD														
302	1	REFRIGERATOR											120	1	4.9	
401	1	HOT FOOD TABLE											120	1	35.8	
402	1	UTILITY COUNTER														
403	1	COLD FOOD TABLE											120	1	7.8	
404	1	SPARE NUMBER														
405	2	MILK COOLER											120	1	7.5	
406	1	CASHER COUNTER														
407	1	CASH REGISTER/POS - BY OWNER											120	1	10.0	DEDICATED CIRCUIT & DATA
408	1	LOW PROFILE AIR CURTAIN											115	1	10.4	
501	1	SPARE NUMBER														
502	1	HAND SINK W/ FOOT PEDALS	0.5	0.5			1.5									SOAP & TOWEL DISPENSER - BY OWNER
503	1	POT SINK	(2) 0.5	(2) 0.5	FL SK											

ARCHITECT:



PROJECT:  
CMSD BARBARA BOOKER ELEMENTARY  
2121 W. 67TH ST.  
CLEVELAND, OHIO 44102

SHEET TITLE:  
FOOD SERVICE  
EQUIPMENT  
SCHEDULE  
SCALE 1/4" = 1'-0"

DATE CODE	PROJECT PHASE	BY
01/03/22 BB2S	CONSTRUCTION DOCUMENTS	CM
01/06/22 BB3S	BIDS	CM

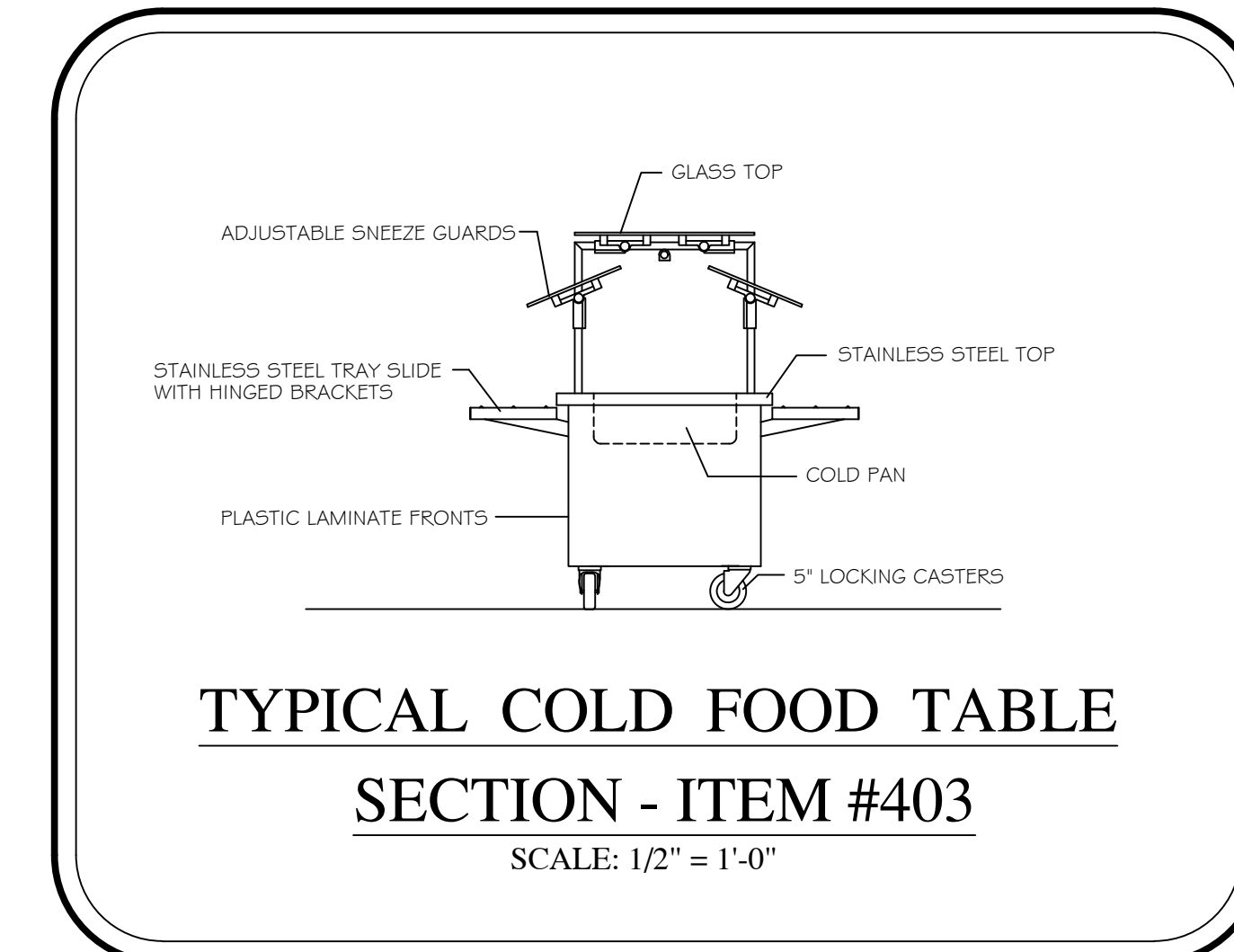
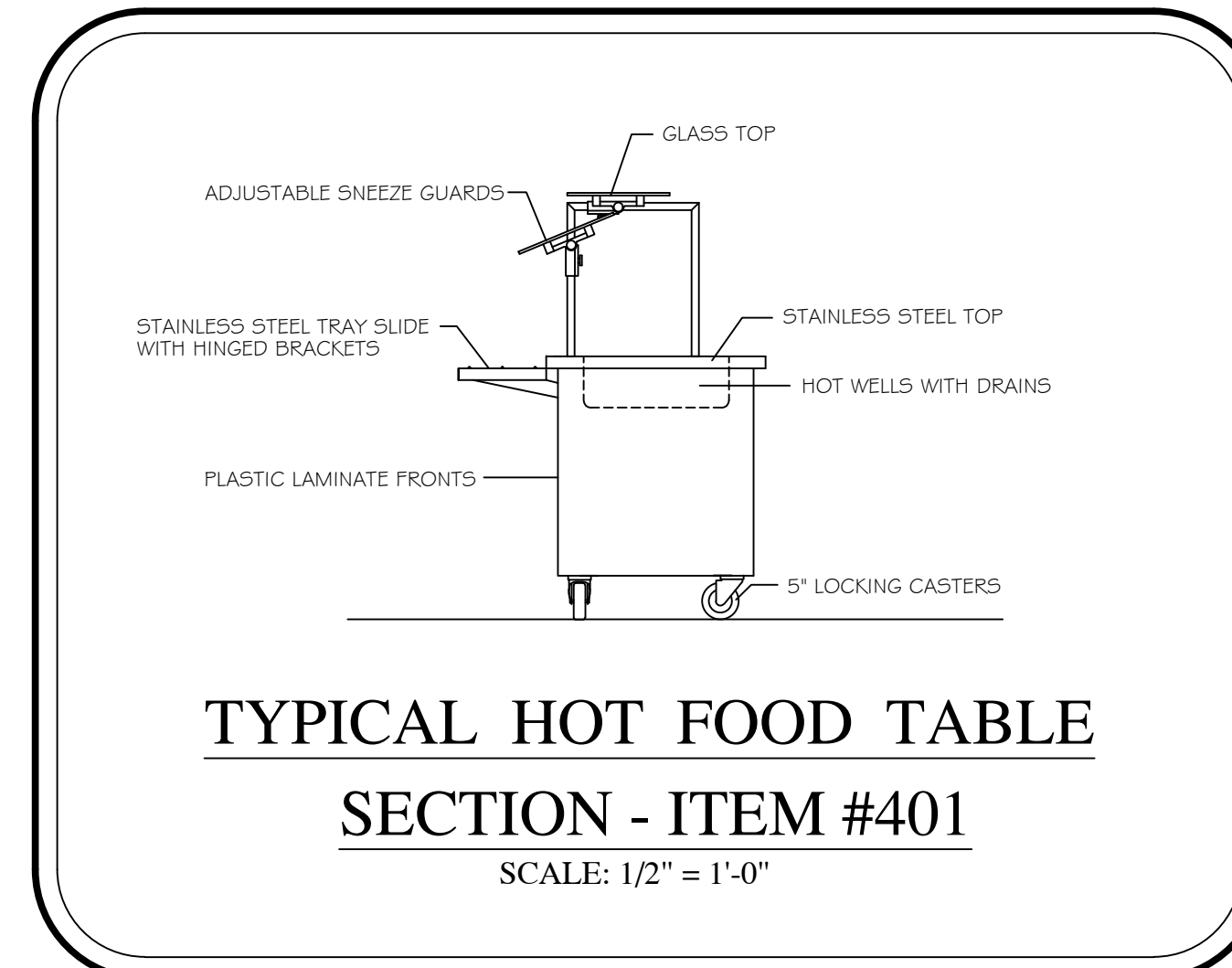
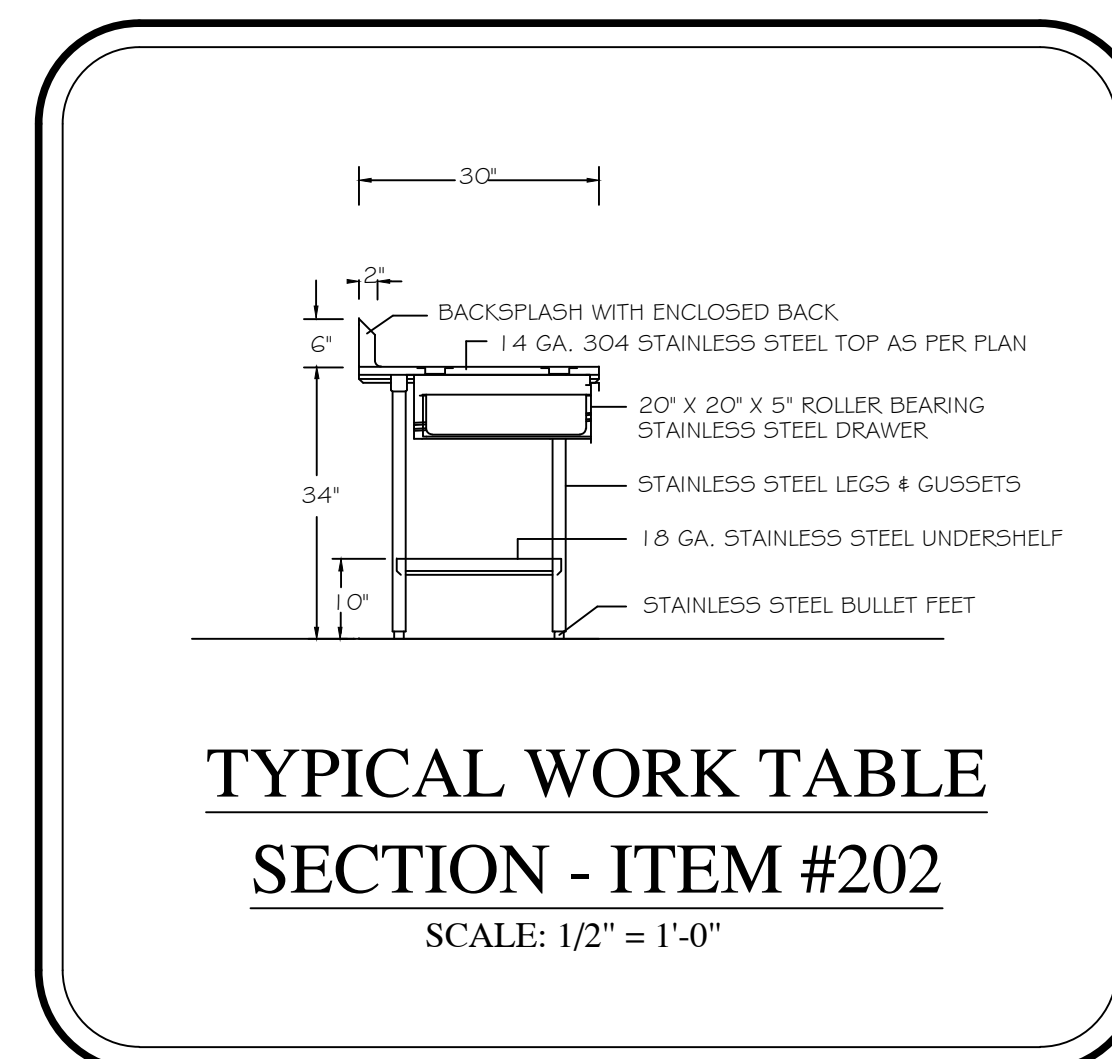
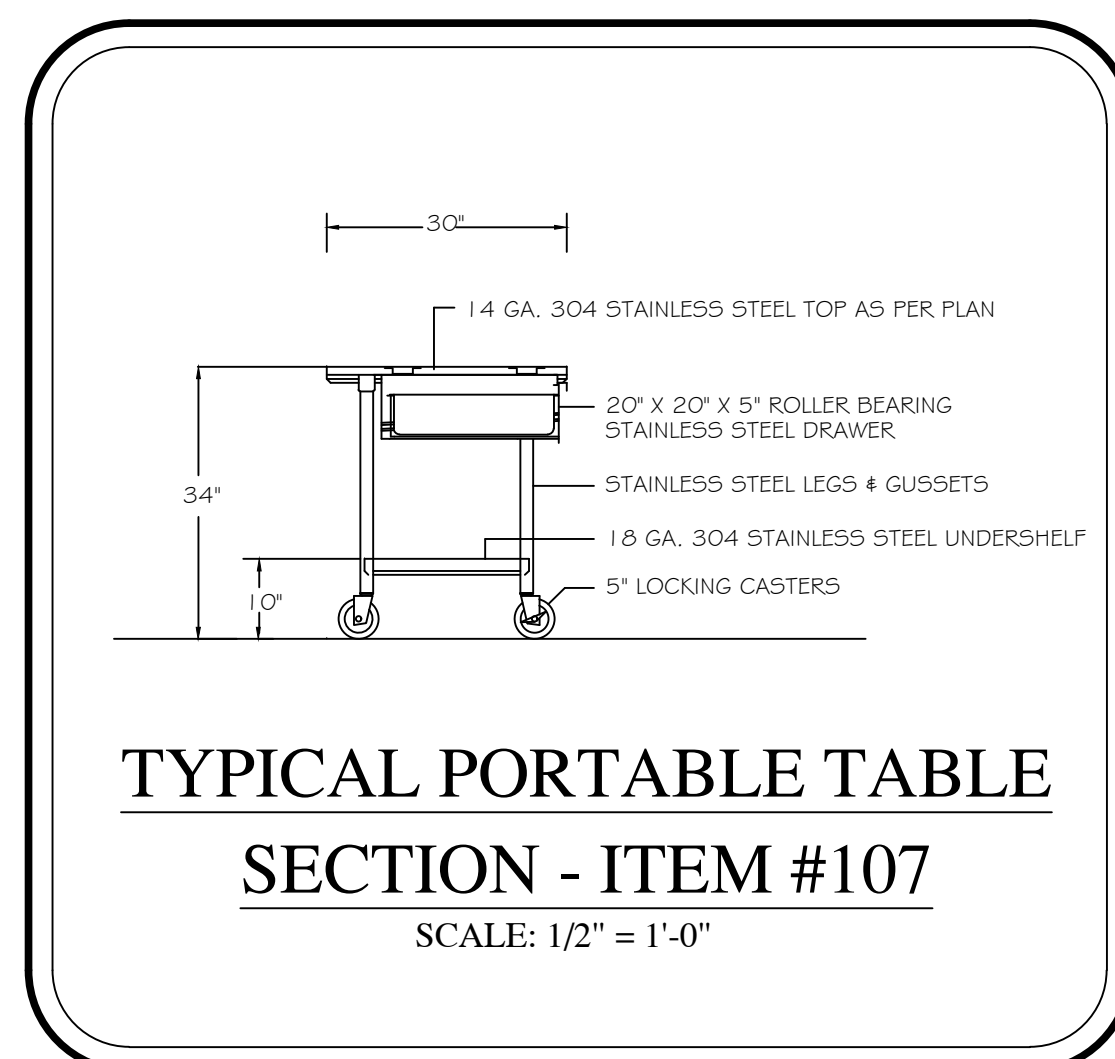
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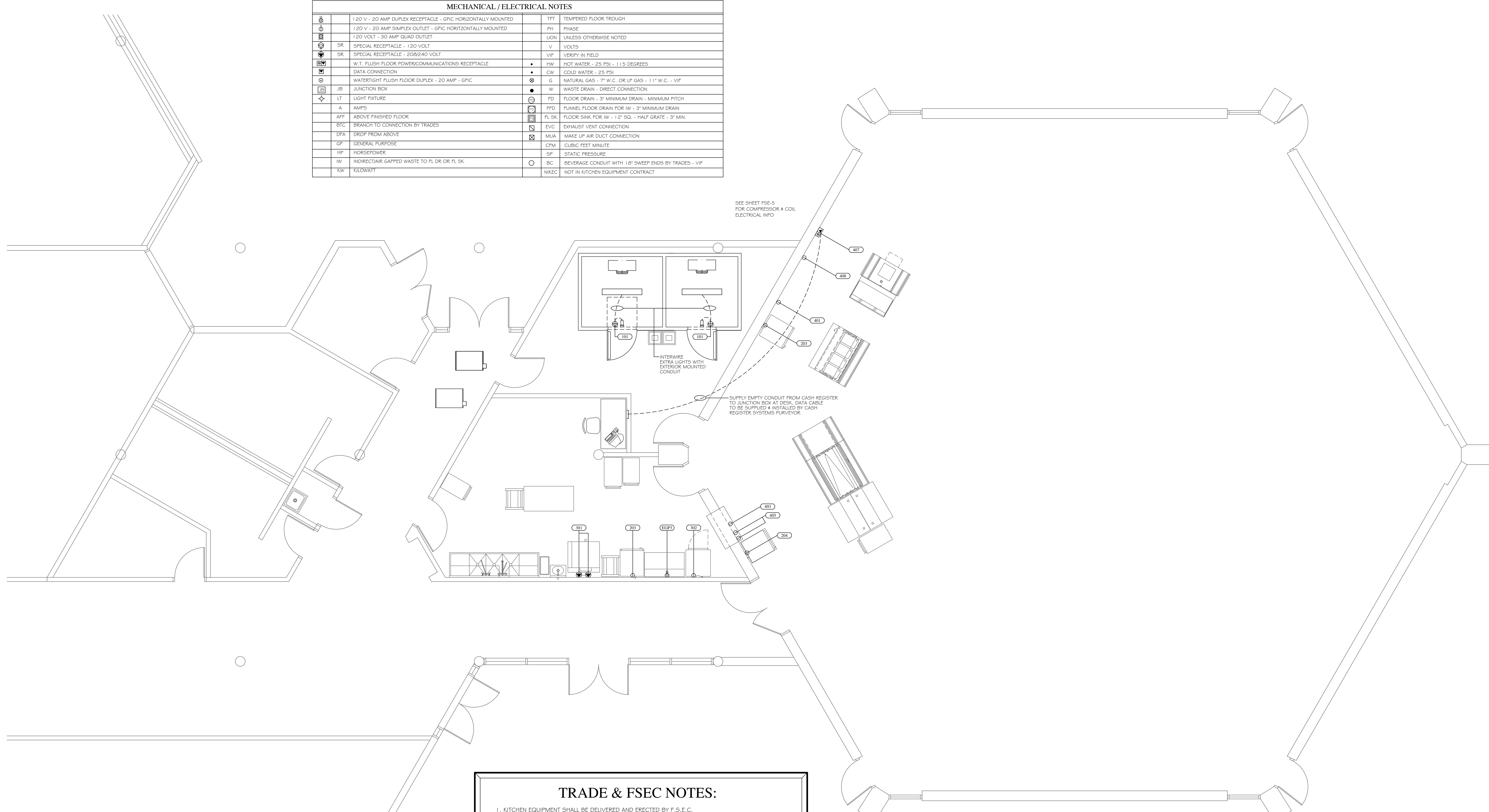
FSE-2

NOTE:

- FSEC SHALL VERIFY ROUGHIN REQUIREMENTS FOR FUTURE. PURVEYOR SUPPLIED, OWNERS RELOCATED EQUIPMENT, OWNER SUPPLIED EQUIPMENT, ETC.
- TRADES TO REUSE EXISTING ROUGHINS WHERE APPLICABLE.
- TRADES SHALL DISCONNECT, REMOVE, STORE & RECONNECT ANY EXISTING EQUIPMENT AS REQUIRED FOR CONSTRUCTION PURPOSES.
- EQUIPMENT NOT BEING REUSED TO BE DISCONNECTED BY TRADES AND STORED OR DISCARDED BY THE FSEC AS DIRECTED BY OWNER.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE DISCONNECTED BY THE TRADES AND RELOCATED BY THE FSEC AS PER PLANS AND SPECIFICATIONS.



MECHANICAL / ELECTRICAL NOTES			
⊕	120 V - 20 AMP DUPLEX RECEPTACLE - GFIC HORIZONTALLY MOUNTED	TFT	TEMPERED FLOOR TROUGH
⊕	120 V - 20 AMP SIMPLEX OUTLET - GFIC HORIZONTALLY MOUNTED	PH	PHASE
⊕	120 VOLT - 30 AMP QUAD OUTLET	UN	UNLESS OTHERWISE NOTED
SR	SPECIAL RECEPTACLE - 120 VOLT	V	VOLTS
SR	SPECIAL RECEPTACLE - 208/240 VOLT	VIF	VERIFY IN FIELD
W.T.	W.T. FLUSH FLOOR POWER/COMMUNICATIONS RECEPTACLE	HW	HOT WATER - 25 PSI - 115 DEGREES
DATA CONNECTION		CW	COLD WATER - 25 PSI
WATER TIGHT FLUSH FLOOR DUPLEX - 20 AMP - GFIC		G	NATURAL GAS - 7" W.C. OR LP GAS - 1 1/2" W.C. - VIF
JB	JUNCTION BOX	W	WASTE DRAIN - DIRECT CONNECTION
LT	LIGHT FIXTURE	FD	FLOOR DRAIN - 3" MINIMUM DRAIN - MINIMUM PITCH
A	AMPS	FFD	FUNNEL FLOOR DRAIN FOR IV - 3" MINIMUM DRAIN
AFF	ABOVE FINISHED FLOOR	FL SK	FLOOR SINK FOR IV - 12" SQ. - HALF GRATE - 3" MIN.
BTC	BRANCH TO CONNECTION BY TRADES	EVC	EXHAUST VENT CONNECTION
DFA	DROP FROM ABOVE	MUA	MAKE UP AIR DUCT CONNECTION
GP	GENERAL PURPOSE	CFM	CUBIC FEET MINUTE
HP	HORSEPOWER	SP	STATIC PRESSURE
IV	INDIRECT/AIR GAPPED WASTE TO FL OR FL SK	BC	BEVERAGE CONDUIT WITH 18" SWEEP ENDS BY TRADES - VIF
KW	KILOWATT	NIKEC	NOT IN KITCHEN EQUIPMENT CONTRACT



ARCHITECT:

PROJECT:  
CMSD BARBARA BOOKER ELEMENTARY  
2121 W. 67TH ST.  
CLEVELAND, OHIO 44102

**TRADE & FSEC NOTES:**

- KITCHEN EQUIPMENT SHALL BE DELIVERED AND ERECTED BY F.S.E.C.
- DO NOT ROUGH-IN FROM THIS DRAWING. REFER TO F.S.E.C. DIMENSIONED ROUGH-IN DRAWINGS AND SHOP DRAWINGS FOR ACTUAL REQUIREMENTS.
- TRADES SHALL MAKE ALL FINAL CONNECTIONS BETWEEN EQUIPMENT AND ROUGH-IN POINT, AND FURNISH ALL WIRING, SWITCHES, CONTROLS, SERVICE VALVES, PIPING, ETC AS REQUIRED. FSEC SHALL FURNISH DRAIN WATER TEMPERING KIT(S). TRADES SHALL INSTALL.
- FSEC SHALL FURNISH AND TRADES SHALL INSTALL ALL ACCESSORIES (FAUCETS, SWITCHES, CORDS, VALVES, GAS HOSES, ETC.).
- SLOPES TO FDS SHOULD BE HELD TO A MINIMUM DIMENSION.
- ALL 'ROUGH-INS' SHOULD BE 'UP-WITHIN' AND THEN 'OUT-OF' WALLS WHERE POSSIBLE TO KEEP FLOORS AS CLEAN AS POSSIBLE. ROUGH-INS ARE SHOWN AT TERMINATION POINT TO ALLOW WIRING/PIPING TO FIXTURE BY TRADES.
- TRADES TO PROVIDE CHASES/REWORK OF WALLS, FLOORS, CEILINGS FOR UTILITIES, FLOOR GRATES, WALKINS, DUCTS, ETC.
- F.S.E.C. SHALL PROVIDE ACCESS HOLES IN EQUIPMENT FOR UTILITIES, PIPING, POS, BEVERAGE LINES, ETC.
- TRADES SHALL PROVIDE VENTILATION STRUCTURAL SUPPORT, CEILING WORK, ROOF PENETRATIONS AND FIRE PROOFING AS REQUIRED.
- EXHAUST HOOD SHALL BE USED FOR VENTILATION OF COOKING EQUIPMENT ONLY. TRADES SHALL PROVIDE ROOM VENTILATION (AG RECOMMENDED) AS REQUIRED.
- TRADES SHALL PROVIDE ADEQUATE VENTILATION FOR REFRIGERATION COMPRESSORS, WHETHER AIR OR WATER COOLED.
- TRADES SHALL REVIEW ALL ROUGHINS AND SHOP DRAWINGS FROM F.S.E.C. AND ADVISE PRIOR TO ROUGHING IN IF ANY CHANGES ARE REQUIRED.
- FSEC SHALL COORDINATE ROUGHIN REQUIREMENTS FOR OWNER SUPPLIED, RELOCATED, OR EXISTING EQUIPMENT WITH ALL TRADES.
- TRADES TO REUSE EXISTING ROUGHINS IF APPLICABLE.
- EQUIPMENT NOT BEING REUSED TO BE DISCONNECTED FROM UTILITIES BY THE TRADES.
- EQUIPMENT NOT BEING RE-USED SHALL BE DISCARDED BY THE FSEC.
- IF OWNER REQUESTS EXISTING EQUIPMENT BE SALVAGED THE FSEC SHALL TURN OVER TO OWNER.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE DISCONNECTED FROM UTILITIES BY THE TRADES.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE REMOVED FROM SITE, CLEANED, MADE READY FOR HEALTH DEPARTMENT AND RETURNED TO THE SITE BY THE FSEC.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE RE-CONNECTED BY THE TRADES.
- TRADES & FSEC TO VERIFY VENTILATION DATA WITH HOOD MFG. SHOP DRAWINGS.

**NOTE:**

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**EQUIPMENT SCHEDULE**

Item	EQUIPMENT DESCRIPTION	VOLTS	PH	AMPS LOAD	DIRECT BY EC	CORDSET BY FSEC	AFF (in)	REMARKS
101	WALK-IN COOLER/FREEZER	120	1	8.0	X		DFA	TRADES WIRE TO JB FOR LIGHTS, DOOR HEATER
203	HOT FOOD CABINET	120	1	12.0		X	72	
204	COLD FOOD CABINET	120	1	15.0		X	72	
301	CONVECTION OVEN - DOUBLE DECK	208	3	31.0	X		24	
302	REFRIGERATOR	120	1	4.9		X	90	
401	HOT FOOD TABLE	120	1	35.8		X	16	
403	COLD FOOD TABLE	120	1	7.8		X	16	
405	MILK COOLER	120	1	7.5		X	16	
407	CASH REGISTER/POS - BY OWNER	120	1	10.0		X	16	INTERWIRE TO OFFICE/CPU - VIF
408	LOW PROFILE AIR CURTAIN	120	1	10.4		X	16	
EGP3	GENERAL PURPOSE DUPLEX	120	1	10.0		X	48	

SHEET TITLE:  
FOOD SERVICE  
ELECTRICAL  
FLOOR PLAN  
SCALE 1/4" = 1'-0"

DATE CODE	PROJECT PHASE	BY
01/03/22 BB2E	CONSTRUCTION DOCUMENTS	CM
01/06/22 BB3E	BIDS	CM

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SHEET NUMBER:

**FSE-3**

MECHANICAL / ELECTRICAL NOTES			
⊕	120 V - 20 AMP DUPLEX RECEPTACLE - GFCI HORIZONTALLY MOUNTED	TFT	TEMPERED FLOOR TROUGH
⊖	120 V - 20 AMP SIMPLEX OUTLET - GFCI HORIZONTALLY MOUNTED	PH	PHASE
⊕	120 VGLT - 30 AMP QUAD OUTLET	UN	UNLESS OTHERWISE NOTED
⊕	SR SPECIAL RECEPTACLE - 120 VOLT	V	VOLTS
⊕	SR SPECIAL RECEPTACLE - 208/240 VOLT	VIF	VERIFY IN FIELD
⊕	W.T. FLUSH FLOOR POWER/COMMUNICATIONS RECEPTACLE	HW	HOT WATER - 25 PSI - 115 DEGREES
⊕	DATA CONNECTION	CW	COLD WATER - 25 PSI
⊕	WATERTIGHT FLUSH FLOOR DUPLEX - 20 AMP - GFCI	G	NATURAL GAS - 7" W.C. OR LP GAS - 1 1/2" W.C. - VIF
⊕	JB JUNCTION BOX	W	WASTE DRAIN - DIRECT CONNECTION
⊕	LT LIGHT FIXTURE	FD	FLOOR DRAIN - 3" MINIMUM DRAIN - MINIMUM PITCH
A	AMPS	FFD	FUNNEL FLOOR DRAIN FOR IV - 3" MINIMUM DRAIN
AFP	ABOVE FINISHED FLOOR	FL SK	FLOOR SINK FOR IV - 12" SQ. - HALF GRATE - 3" MIN.
BTC	BRANCH TO CONNECTION BY TRADES	EVC	EXHAUST VENT CONNECTION
DFA	DROP FROM ABOVE	MUA	MAKE UP AIR DUCT CONNECTION
GF	GENERAL PURPOSE	CFM	CUBIC FEET MINUTE
HP	HORSEPOWER	SP	STATIC PRESSURE
IW	INDIRECT/AIR GAPPED WASTE TO FL DR OR FL SK	BC	BEVERAGE CONDUIT WITH 1/8" SWEEP ENDS BY TRADES - VIF
KW	KILOWATT	NIKEC	NOT IN KITCHEN EQUIPMENT CONTRACT



ARCHITECT:

PROJECT:  
CMSD BARBARA BOOKER ELEMENTARY  
2121 W. 67TH ST.  
CLEVELAND, OHIO 44102

SHEET TITLE:  
FOOD SERVICE  
PLUMBING  
FLOOR PLAN  
SCALE 1/4" = 1'-0"

DATE CODE	PROJECT PHASE	BY
01/03/22 BB2P	CONSTRUCTION DOCUMENTS	CM
01/06/22 BB3P	BIDS	CM

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SHEET NUMBER:

FSE-4

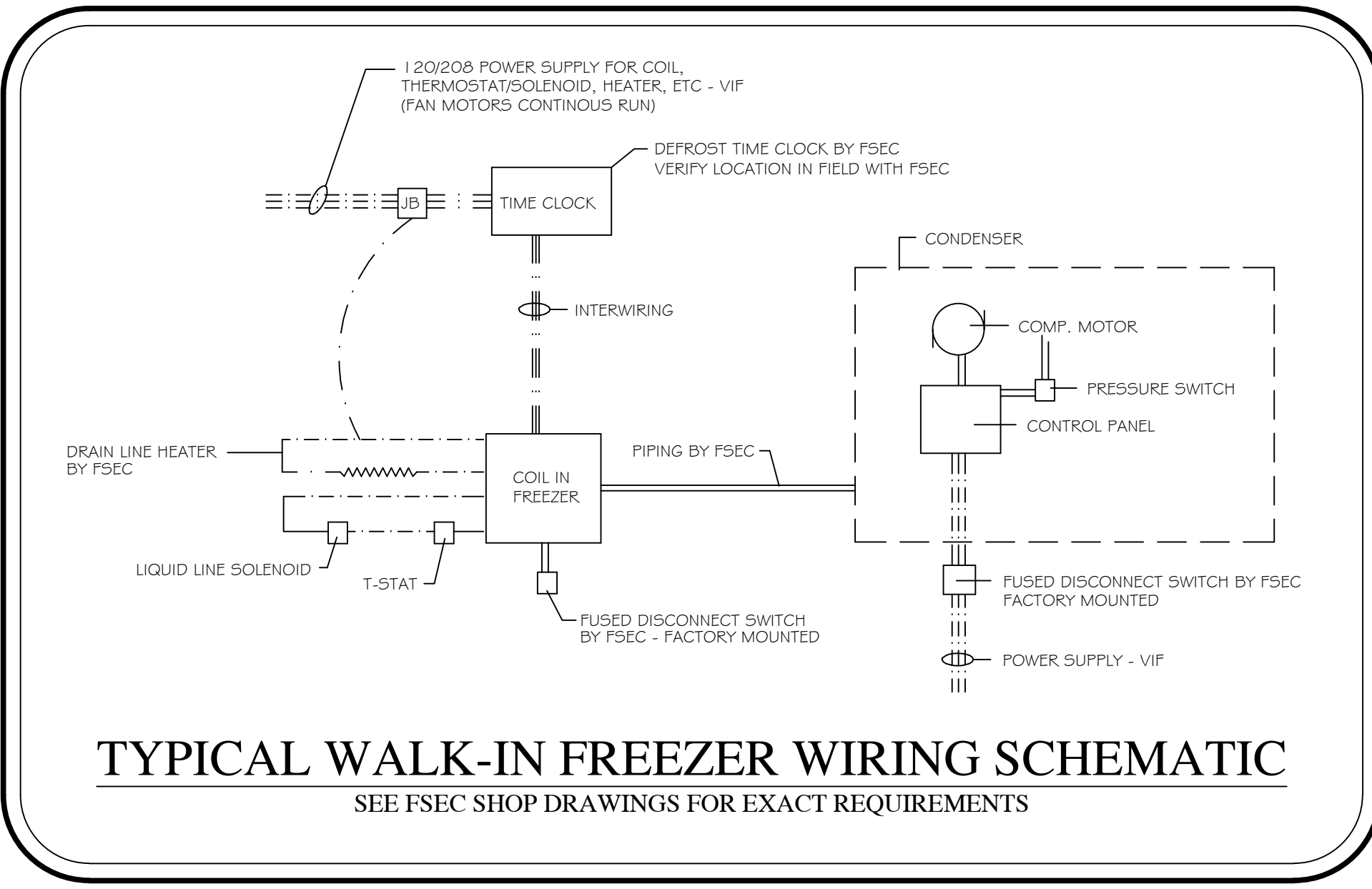
**TRADE & FSEC NOTES:**

- KITCHEN EQUIPMENT SHALL BE DELIVERED AND ERECTED BY F.S.E.C.
- DO NOT ROUGH-IN FROM THIS DRAWING. REFER TO F.S.E.C. DIMENSIONED ROUGH-IN DRAWINGS AND SHOP DRAWINGS FOR ACTUAL REQUIREMENTS.
- TRADES SHALL MAKE ALL FINAL CONNECTIONS BETWEEN EQUIPMENT AND ROUGH-IN POINT, AND FURNISH ALL WIRING, SWITCHES, CONTROLS, SERVICE VALVES, PIPING, ETC AS REQUIRED. FSEC SHALL FURNISH DRAIN WATER TEMPERING KIT(S). TRADES SHALL INSTALL.
- FSEC SHALL FURNISH AND TRADES SHALL INSTALL ALL ACCESSORIES (FAUCETS, SWITCHES, CORDS, VALVES, GAS HOSES, ETC.).
- SLOPES TO FDS SHOULD BE HELD TO A MINIMUM DIMENSION.
- ALL "ROUGH-INS" SHOULD BE "UP-WITHIN" AND THEN "OUT-OF" WALLS WHERE POSSIBLE TO KEEP FLOORS AS CLEAN AS POSSIBLE. ROUGH-INS ARE SHOWN AT TERMINATION POINT TO ALLOW WIRING/PIPING TO FIXTURE BY TRADES.
- TRADES TO PROVIDE CHASES/REWORK OF WALLS, FLOORS, CEILINGS FOR UTILITIES, FLOOR GRATES, WALKINS, DUCTS, ETC.
- F.S.E.C. SHALL PROVIDE ACCESS HOLES IN EQUIPMENT FOR UTILITIES, PIPING, POS, BEVERAGE LINES, ETC.
- TRADES SHALL PROVIDE VENTILATION STRUCTURAL SUPPORT, CEILING WORK, ROOF PENETRATIONS AND FIRE PROOFING AS REQUIRED.
- EXHAUST HOOD SHALL BE USED FOR VENTILATION OF COOKING EQUIPMENT ONLY. TRADES SHALL PROVIDE ROOM VENTILATION (AC RECOMMENDED) AS REQUIRED.
- TRADES SHALL PROVIDE ADEQUATE VENTILATION FOR REFRIGERATION COMPRESSORS, WHETHER AIR OR WATER COOLED.
- TRADES SHALL REVIEW ALL ROUGHINS AND SHOP DRAWINGS FROM F.S.E.C. AND ADVISE PRIOR TO ROUGHING IN IF ANY CHANGES ARE REQUIRED.
- FSEC SHALL COORDINATE ROUGHIN REQUIREMENTS FOR OWNER SUPPLIED, RELOCATED, OR EXISTING EQUIPMENT WITH ALL TRADES.
- TRADES TO REUSE EXISTING ROUGHINS IF APPLICABLE.
- EQUIPMENT NOT BEING REUSED TO BE DISCONNECTED FROM UTILITIES BY THE TRADES.
- EQUIPMENT NOT BEING RE-USED SHALL BE DISCARDED BY THE FSEC.
- IF OWNER REQUESTS EXISTING EQUIPMENT BE SALVAGED THE FSEC SHALL TURN OVER TO OWNER.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE DISCONNECTED FROM UTILITIES BY THE TRADES.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE REMOVED FROM SITE, CLEANED, MADE READY FOR HEALTH DEPARTMENT AND RETURNED TO THE SITE BY THE FSEC.
- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE RE-CONNECTED BY THE TRADES.
- TRADES & FSEC TO VERIFY VENTILATION DATA WITH HOOD MFG. SHOP DRAWINGS.

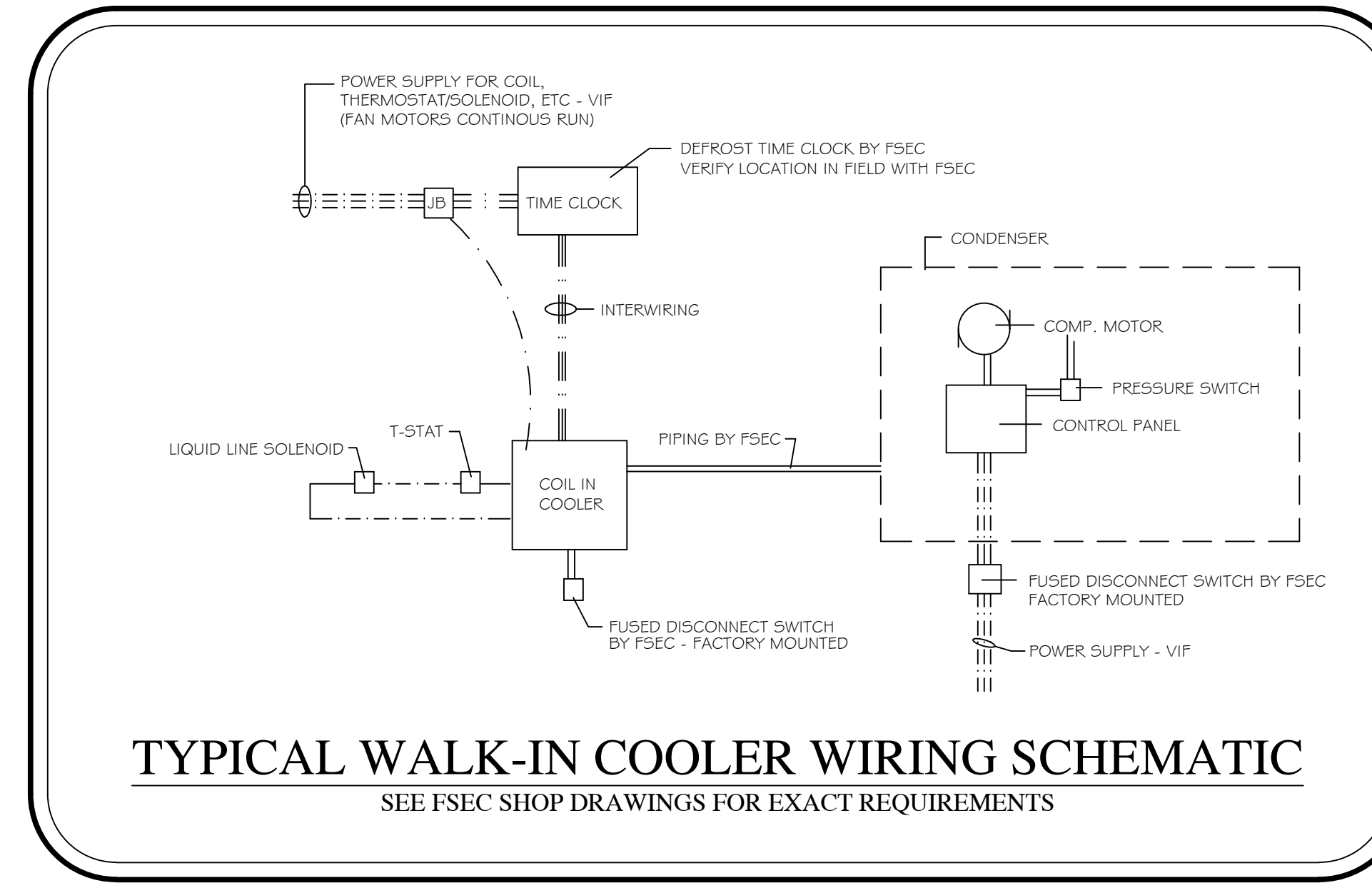
- NOTE:
- FSEC SHALL VERIFY ROUGHIN REQUIREMENTS FOR FUTURE. PURVEYOR SUPPLIED, OWNERS RELOCATED EQUIPMENT, OWNER SUPPLIED EQUIPMENT, ETC.
  - TRADES TO REUSE EXISTING ROUGHINS WHERE APPLICABLE.
  - TRADES SHALL DISCONNECT, REMOVE, STORE & RECONNECT ANY EXISTING EQUIPMENT AS REQUIRED FOR CONSTRUCTION PURPOSES.
  - EQUIPMENT NOT BEING REUSED TO BE DISCONNECTED BY TRADES AND STORED OR DISCARDED BY THE FSEC AS DIRECTED BY OWNER.
  - EQUIPMENT DESIGNATED AS RELOCATED SHALL BE DISCONNECTED BY THE TRADES AND RELOCATED BY THE FSEC AS PER PLANS AND SPECIFICATIONS.

EQUIPMENT SCHEDULE											
Item	EQUIPMENT DESCRIPTION	CW (in)	HW (in)	AFF (in)	DIRECT DRAIN (in)	AFF (in)	INDIRECT AIR GAP	GAS (in)	AFF (in)	MBTUH	REMARKS
101A	COOLER COIL						FFD				FSEC PIPE COIL TO FFD
101C	FREEZER COIL						FFD				FSEC PIPE COIL TO FFD
502	HAND SINK W/ FOOT PEDALS	0.5	0.5	18	1.5	16					SOAP & TOWEL DISPENSER - BY OWNER
503	POT SINK	(2) 0.5	(2) 0.5	16			FL SK				
DGP1	GENERAL PURPOSE FLOOR DRAIN				3						

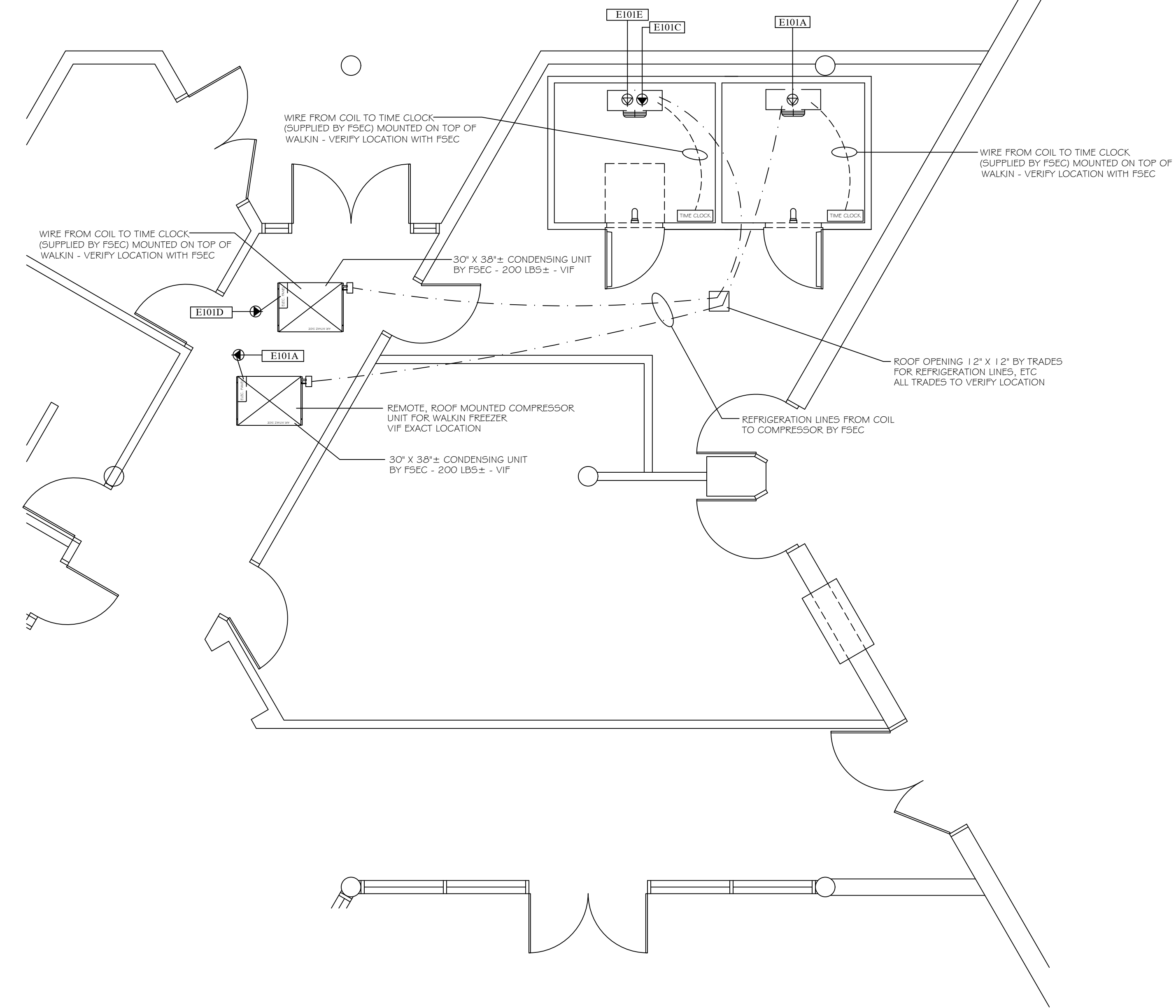




**TYPICAL WALK-IN FREEZER WIRING SCHEMATIC**  
SEE FSEC SHOP DRAWINGS FOR EXACT REQUIREMENTS



**TYPICAL WALK-IN COOLER WIRING SCHEMATIC**  
SEE FSEC SHOP DRAWINGS FOR EXACT REQUIREMENTS



ARCHITECT:

ELECTRICAL CONNECTIONS SCHEDULE								
CONN.	VOLTS	PH	KW	HP	AMPS	CONNECTION	HEIGHT	REMARKS
E101A	120	1			5.0	DIRECT	DFA	WIRING FROM COIL TO TIME CLOCK
E101B	208	3			10.0	DIRECT	ROOF	
E101C	208	1			15.0	DIRECT	DFA	WIRING FROM COIL TO TIME CLOCK
E101D	208	3			15.0	DIRECT	ROOF	
E101E	120	1			5.0	DIRECT	DFA	FREEZER COIL HEAT TAPE

PROJECT:  
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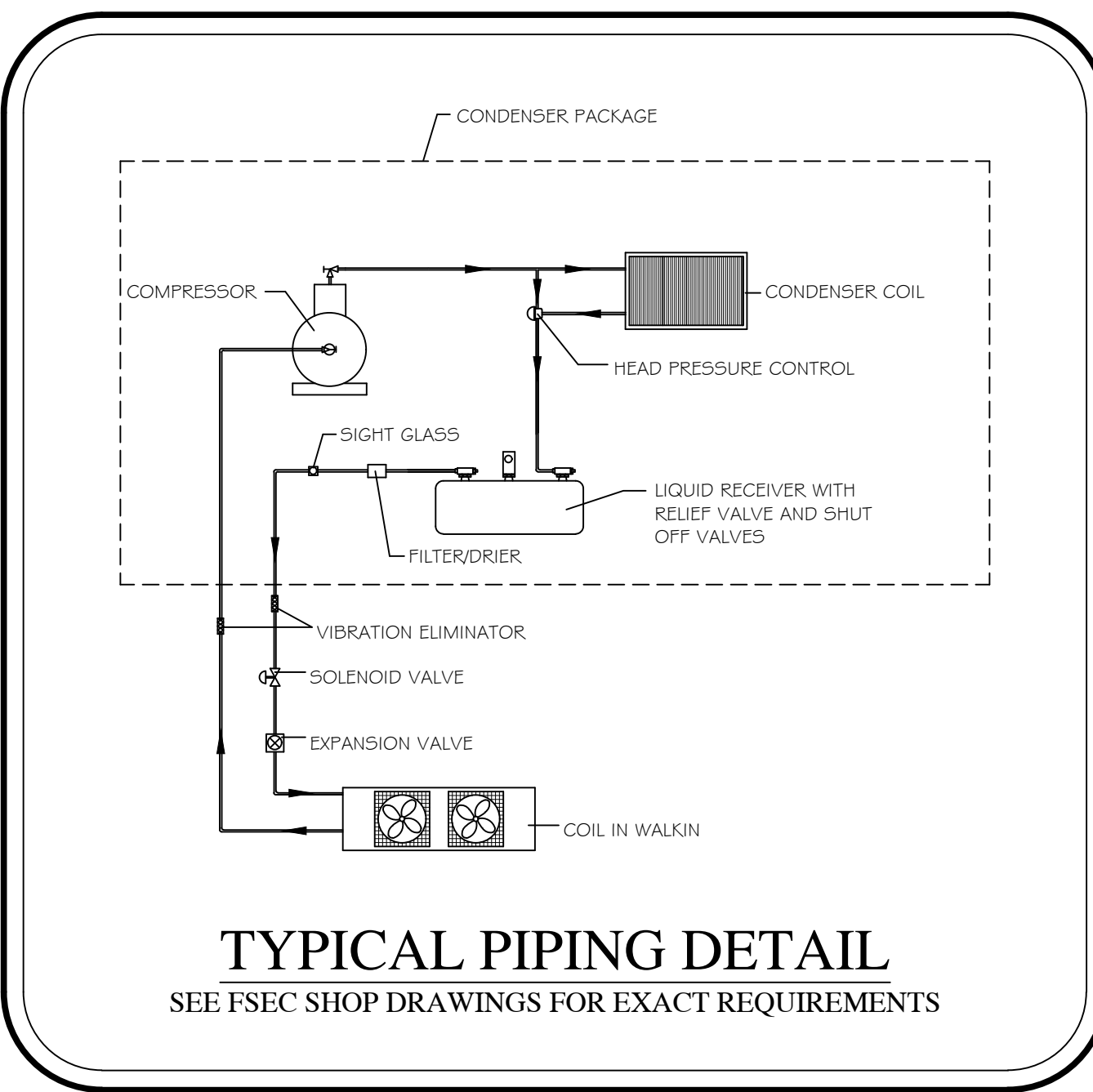
SHEET TITLE:  
FOOD SERVICE  
REFRIGERATION  
FLOOR PLAN  
SCALE 1/4" = 1'-0"

DATE CODE	PROJECT PHASE	BY
01/06/22 BB3R	BIDS	CM

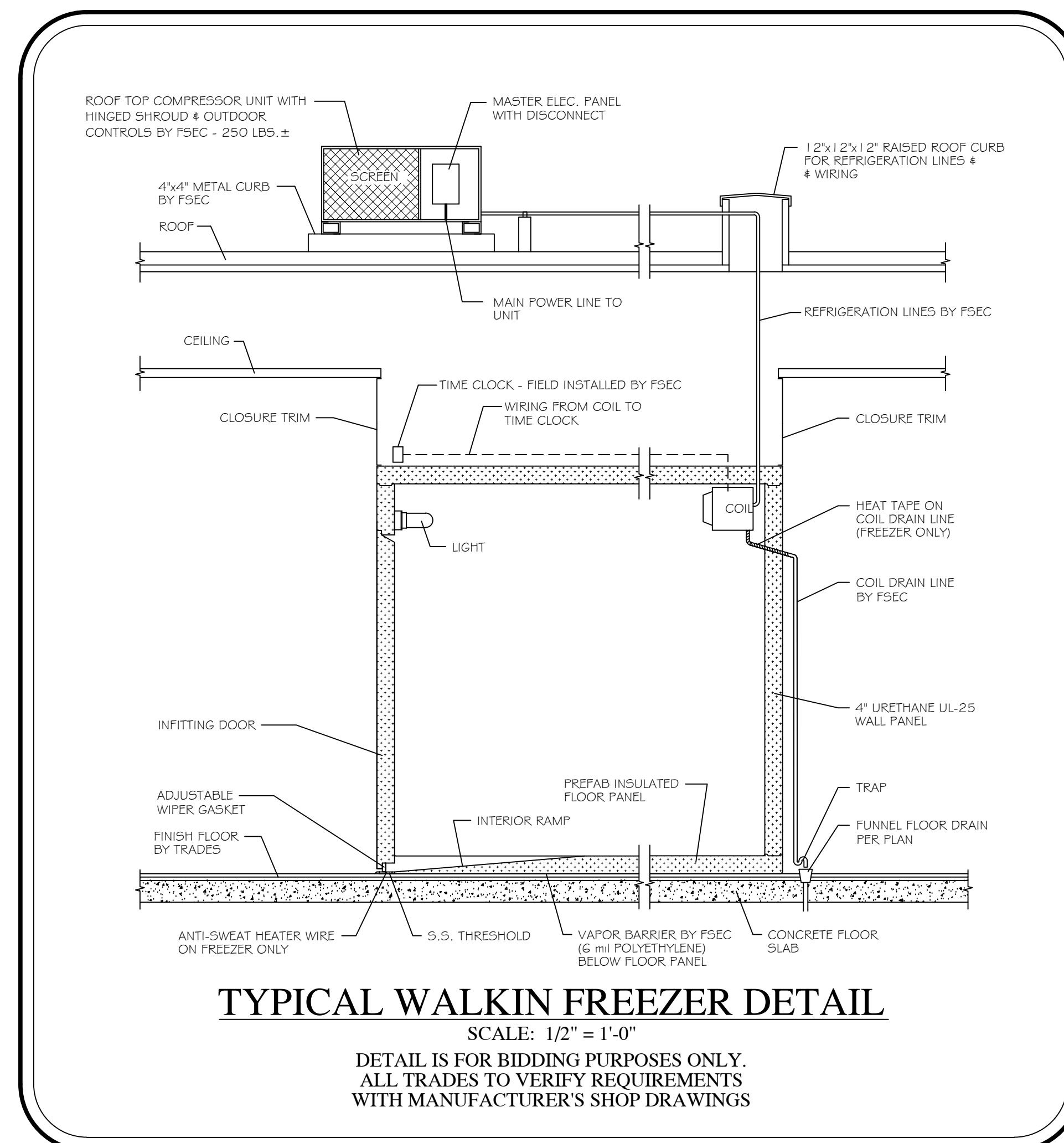
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SHEET NUMBER:

**FSE-5**

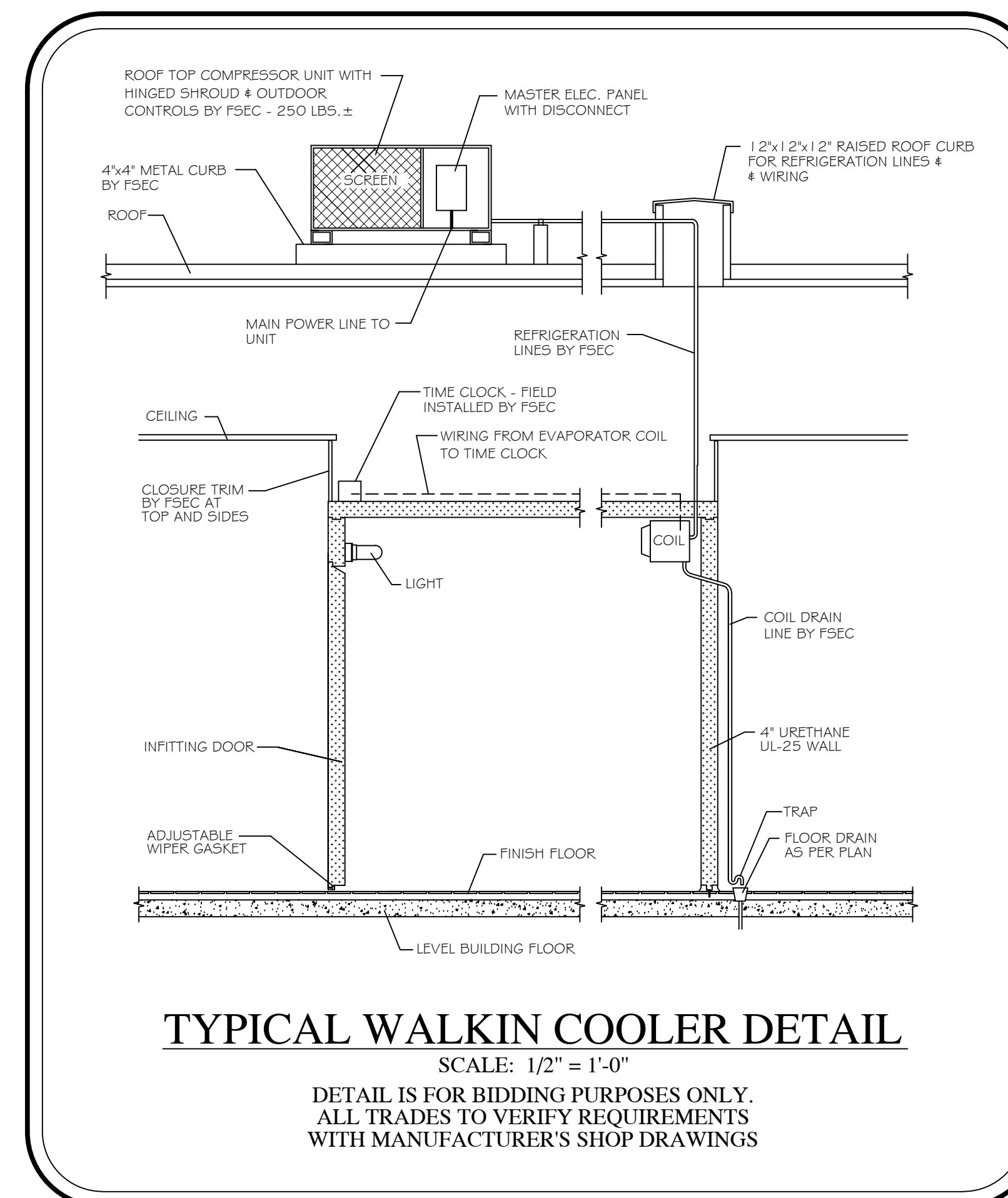


**TYPICAL PIPING DETAIL**  
SEE FSEC SHOP DRAWINGS FOR EXACT REQUIREMENTS



**TYPICAL WALKIN FREEZER DETAIL**  
SCALE: 1/2" = 1'-0"

DETAIL IS FOR BIDDING PURPOSES ONLY.  
ALL TRADES TO VERIFY REQUIREMENTS  
WITH MANUFACTURER'S SHOP DRAWINGS



**TYPICAL WALKIN COOLER DETAIL**  
SCALE: 1/2" = 1'-0"

DETAIL IS FOR BIDDING PURPOSES ONLY.  
ALL TRADES TO VERIFY REQUIREMENTS  
WITH MANUFACTURER'S SHOP DRAWINGS

**REFRIGERATION NOTES**

- FOODSERVICE EQUIPMENT TRADES
  - FSEC SHALL PROVIDE AND INSTALL WALKIN AND REFRIGERATION SYSTEM WITH COIL, CONDENSER, INSULATED LINES, OUTDOOR CONTROL PACKAGE, HINGED SHROUD, CONTROLS, CURBS, ETC. EVALUATE, CHARGE, TEST, ADJUST, ETC. PER G.5.
  - PROVIDE DIRECT EXPANSION TYPE COILS WITH ELECTRIC DEFROST SIMILAR TO BOHN CO. "LET" SERIES WITH LIQUID LINE SOLENOID VALVE, SUCTION LINE "TRAP" AND THERMOSTAT PIPED AND WIRED TO THE JUNCTION BOX FOR POSITIVE PUMP DOWN, PROVIDE TRAPPED COIL DRAIN LINES.
  - PROVIDE AIR COOLED CONDENSER PACKAGE SIMILAR TO COPELAND CO. "C" SERIES WITH OUTDOOR CONTROLS, HINGED SHROUD, AND FLOODED HEAD PRESSURE CONTROL SYSTEM. ALL INTERNAL PIPING SHALL BE PHE PIPES TO CURBSIDE OF ENCLOSURE WITH DRAIN, SIGHT GLASS AND VIBRATION ELIMINATORS FOR SUCTION AND LIQUID LINES.
  - PROVIDE INSULATED, REFRIGERANT GRADE OR TYPE "L" COPPER LINE SETS WITH SILVER SOLDER.
  - ALL LINES SHALL BE SECURELY SUPPORTED AND ANCHORED WITH CLAMPS SEC TO VERIFY ALL DIMENSIONS AND DATA IN FIELD.
- GENERAL TRADES
  - PROVIDE 12' x 12' ROOF OPENING AND RAISED CURB - VIF.
  - PROVIDE STRUCTURAL SUPPORT FOR CONDENSER UNIT - VIF.
  - PROVIDE FLOOR CONSTRUCTION AND INSULATION AS PER PLAN.
  - PROVIDE PRESSURE TREATED WOOD THERMAL BREAKS UNDER ALL WALKIN WALLS UP THRU AND 1/8" ABOVE QUARRY TILE FLOOR TO TOUCH SCREEDS.
  - PROVIDE A MINIMUM OF 4" FROM CENTERLINE OF THERMAL BREAK TO ADJACENT BUILDING WALLS TO CREATE AIR SPACE TO WALKIN WALL.
  - PROVIDE THREE LAYERS OF 2" OWENS-CORNING FOAMULAR 150 SERIES EXTRUDED POLYSTYRENE WITH K-VALUE OF 1.0 EACH AND DENSITY TO SUPPORT CONCRETE.
  - INSULATION MUST BE TIGHT AGAINST ALL THERMAL BREAKS AFTER CONCRETE IS POURED.
  - PROVIDE A 6 MIL POLYETHYLENE SHEET WATERTIGHT SEAL UNDER THE ENTIRE INSULATED SUBFLOOR AND UP ALL VERTICAL EXTERIOR SIDES IN CONTACT WITH THERMAL BREAKS.
  - PROVIDE POWER AND WIRING PER CODE FOR REFRIGERATION SYSTEM AND CONNECT TO CONTROL PANEL AND DISCONNECT (BY FSEC) ON ROOF TOP CONDENSING UNIT.
  - INSTALL ALL WIRING PER CODE TO SUPPLY POWER FOR COILS, TIME CLOCKS, SOLENOID/THERMOSTAT, DRAIN LINE HEATER, ETC. - VIF.
  - PROVIDE POWER AND INTERWIRE INTERIOR LIGHTS WITH EXTERIOR CONDUIT.
  - CONNECT DRAIN LINE HEATER (PROVIDED BY FSEC) IN FREEZER THROUGH J.B.
  - PROVIDE FUNNEL FLOOR DRAINS PER PLAN WITH MINIMUM PITCH 1/4" FROM WALKIN WALLS. PIPING SHALL NOT INTERFERE WITH INSULATED SUBFLOOR.

**NOTE:**

- FSEC SHALL VERIFY ROUGHIN REQUIREMENTS FOR FUTURE, PURVEYOR SUPPLIED, OWNERS RELOCATED EQUIPMENT, OWNER SUPPLIED EQUIPMENT, ETC.
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- EQUIPMENT DESIGNATED AS RELOCATED SHALL BE DISCONNECTED BY THE TRADES AND RELOCATED BY THE FSEC AS PER PLANS AND SPECIFICATIONS.