

ADDENDUM NUMBER ONE

To the Drawings and Project Manual

Dated: 25 March 2026

Entitled: BL065 - Optometry School – First Floor Renovations
(IU20250150)

Owner:
Trustees of Indiana University
Bloomington, IN 47408

Project Address:
Indiana University Bloomington Campus

Prepared By:



Chris W. Lake, AIA

Indiana Registration No. AR10400187

Addendum Dated: 25 March 2026

Project Number: 25-065

CHANGES TO THE PROJECT MANUAL

Modifications described herein shall be incorporated in the Project Manual. All other Work shall re-main unchanged.

1. DIVISION 08 - OPENINGS
 - a. Section 087100 “DOOR HARDWARE”
 - (1) DELETE Section 087100 in its entirety and replace with the attached Section 087100.
2. DIVISION 10 - SPECIALTIES
 - a. Section 102600 “WALL AND DOOR PROTECTION”
 - (1) DELETE Section 102600 in its entirety and replace with the attached Section 102600.
 - b. Section 104000.1 “IU INTERIOR SIGNAGE SPEC”
 - (1) ADD Section 104000.1 in its entirety.
3. DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
 - a. Section 230952 “HVAC INSTRUMENTATION AND CONTROLS”
 - (1) DELETE Section 230952 in its entirety and replace with the attached Section 230952.

CHANGES TO THE DRAWINGS

Modifications described herein shall be incorporated in the Drawings. All other Work shall remain un-changed.

4. A102 DEMOLITION PLAN – FIRST FLOOR BL065
 - a. Added existing marker board and note #14.
 - b. Added note #23 to Demolition Keynotes.
 - c. Added note #23 to room 112.
 - d. Added demolition of door to room 113.
5. A121 DIMENSION AND ARCHITECTURAL PLAN – FIRST FLOOR BL065
 - a. New markerboard location in room 106.
 - b. Added note #16, #17, and #18 to Arch Plan Keynotes.
 - c. Changed note #4 to note #16 in 106 and 108.
 - d. Monitors added to partial height walls in room 112 with note #17.
 - e. Added note #18 to rooms 106, 108, 112, and 113.

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6. A131 REFLECTED CEILING PLAN – FIRST FLOOR BL065
 - a. L1 added to Light Fixture Legend.
 - b. L1 Typ. tagged on Area B enlarged ceiling plan.
 7. A420 INTERIOR ELEVATIONS
 - a. Elevation #3 added with new markerboard location.
 - b. Monitor locations moved in Elevation 5 and 6.
 - c. E12 added to Equipment Schedule
 8. A600 OPENING SCHEDULE AND DETAILS
 - a. Added Door 113 to the door schedule
 9. A711 INTERIOR FINISH PLAN – FIRST FLOOR BL065
 - a. Note #13 updated with trim information in Finish Plan Keynotes.
 10. MD101 – MECHANICAL DEMOLITION FIRST FLOOR HVAC PLAN – UNIT B
 - a. Delete and replace sheet MD101 in its entirety.
 11. MD102 – MECHANICAL DEMOLITION FIRST FLOOR PIPING PLAN – UNIT B
 - a. Delete and replace sheet MD01 in its entirety.
 12. MH101 – MECHANICAL HVAC FIRST FLOOR PLAN – UNIT B
 - a. Delete and replace sheet MH101 in its entirety.
 13. MP101 – MECHANICAL PIPING FIRST FLOOR PLAN – UNIT B
 - a. Delete and replace sheet MP101 in its entirety.
 14. M-601 – MECHANICAL SCHEDULES AND DETAILS
 - a. Delete and replace sheet M-601 in its entirety.
 15. M-701 – TEMPERATURE CONTROLS AND SCHEMATICS
 - a. Delete and replace sheet M-701 in its entirety.
 16. PD101 – PLUMBING DEMOLITION FIRST FLOOR PLANS
 - a. Delete and replace sheet PD101 in its entirety.
 17. PP101 – PLUMBING CRAWL SPACE, FIRST FLOOR PLAN – AREA B AND SCHEDULES
 - a. Delete and replace sheet PP101 in its entirety.
 18. ED101 – ELECTRICAL DEMOLITION PLANS – FIRST FLOOR
 - a. Delete and replace sheet ED101 in its entirety.
 19. EP101 – ELECTRICAL POWER PLANS – FIRST FLOOR
 - a. Delete and replace sheet EP101 in its entirety.
 20. EF101 – ELECTRICAL FIRE ALARM PLANS – FIRST FLOOR
 - a. Delete and replace sheet EF101 in its entirety.
 21. E-601 – ELECTRICAL SCHEDULES
 - a. Delete and replace sheet E-601 in its entirety.

GENERAL CLARIFICATIONS/ QUESTIONS

1. The plan room is listing ALT #2 for the flooring and base for the corridor, but I do not see what the alternate is. Are you able to clarify this for me?

ANSWER: Per spec section 012300 'ALTERNATES', base bid for ALT #2 is existing finishes in corridor to remain.

2. What will be the best approach for loud tasks, i.e. core drilling? Other disruptions?

ANSWER: These types of loud tasks should be prioritized to occur outside of the building's hours of operation (8:00-5:00, Monday thru Friday). The building opens at 6:00 am. 3-day notice is required for power outages and typically these should be prioritized as early as possible to avoid impact to building occupants. There may be some weeks during the summer when there are few people in the building.

3. Will the communications be "Rough-in" only with UITS providing/installing the communications cabling?

ANSWER: Provide rough-ins only for communications cabling as detailed in the documents. All communications cabling and terminations will be provided by UITS.

4. Can the dumpster location be provided?

ANSWER: Image below of desired location from University.



5. Will room 112 need to be completed before the equipment is relocated from room 106?

ANSWER: Yes, there is not space to temporarily store the exam chairs in room 106.

6. If Alternate No. 2 is accepted, is there a location for the lockers to be temporarily stored?

ANSWER: There is space for some lockers, but not all.

END OF ADDENDUM NUMBER ONE

Attachments:

1. Pre-Bid Meeting Minutes + Sign-in Sheet (2026-03-20)
2. Specification Sections: 087100, 102600, 104000.1, 230952

3. Sheets: A091, A121, A131, A420, A600, A711, MD101, MD102, MH101, MP101, M-601, M-701, PD101, PP101, ED101, EP101, EF101, ED101

Project: IU 20250150 - BL065 - Optometry School – First Floor Renovations

DELV Project No: 25-042

Meeting Minutes

Meeting Minutes – Pre-Bid Meeting (IU 20250150)

Date/Time: 03/20/26 @ 11:00 am
Location: Optometry Building – First Floor Lobby

Project Team Attendees:

Matt Smethurst IU Capital Projects
Jennifer Miller DELV Design

Contractors Present:

Sign-in to be distributed with Addendum #1

Meeting Agenda (w/ Summary Comments)

1. Introductions
2. Design Intent (Led by DELV)–
 - a. General Project Description
 - b. Architectural/MEP Overview
3. Schedule –
 - a. Bids Due – 04/01/26 @ 2:00pm
 - b. Questions to be submitted by 2:00pm on Thursday, March 26, 2025.
 - c. Construction Complete – 08/07/2026 for all work
4. Construction (led by IU) –
 - a. Use of Site
 - i. Access
 1. All contractor personnel must have a Crimson Card.
 2. IU Indy will provide construction cores where needed
 3. Parking with tags in marked lots.
 4. Loading and unloading is where?
 5. Staging will need to be within the space.
 6. Dumpster location?
 7. Cleaning and noise requirements
 8. Bi-Weekly meetings during construction
 9. E-Builder will be used for most CA processes.
 - a. Submittals will be via email with the final approved copy uploaded to E-Builder.
5. Addendums will be issued as needed. Addendum #1, to include Pre-bid Meeting Minutes, will be issued on 03/25/26.
6. Q/A-

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical door hardware

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
 - a. "Metal Doors and Frames"
 - b. "Flush Wood Doors"

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
2. NFPA 101 – Life Safety Code
3. NFPA 105 – Smoke and Draft Control Door Assemblies
4. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
 - a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
 - 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.

B. Action Submittals:

1. Product Data: Submit 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.
2. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
3. Door Hardware Schedule:
 - a. Submit 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 critical in Project construction schedule.
 - b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
 - c. Indicate complete designations of each item required for each opening, include:
 - 1) Door Index: door number, heading number, and Architect's hardware set number.
 - 2) Quantity, type, style, function, size, and finish of each hardware item.
 - 3) Name and manufacturer of each item.
 - 4) Fastenings and other pertinent information.
 - 5) Location of each hardware set cross-referenced to indications on Drawings.
 - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for hardware.
 - 8) Door and frame sizes and materials.
 - 9) Degree of door swing and handing.
4. Key Schedule:
 - a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.

- b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
- c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
- d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
- e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
- f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
 - a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
 - b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Final approved hardware schedule edited to reflect conditions as installed.
 - d. Final keying schedule
 - e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
 - a. Fire door assemblies, in compliance with NFPA 80.
 - b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.

3. Architectural Hardware Consultant: 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 AHC or DHC.
 - 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.
 4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
- B. Certifications:
1. Fire-Rated Door Openings:
 - a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
 - b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
 2. Smoke and Draft Control Door Assemblies:
 - a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
 - b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
 3. Accessibility Requirements:
 - a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.
- C. Pre-Installation Meetings
1. Keying Conference
 - a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2) Preliminary key system schematic diagram.
 - 3) Requirements for key control system.
 - 4) Address for delivery of keys.
 2. Pre-installation Conference
 - a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Inspect and discuss preparatory work performed by other trades.
 - c. Review required testing, inspecting, and certifying procedures.
 - d. Review questions or concerns related to proper installation and adjustment of door hardware.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. 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. Deliver each article of hardware in manufacturer's original packaging.
- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop 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.

1.07 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
 - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
 - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
 - a. Mechanical Warranty
 - 1) Locks: 10 Years
 - 2) Closers: 30 Years

1.08 MAINTENANCE

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."
 - 1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.
- B. 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.
- C. 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.
- D. 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.

2.02 MATERIALS

- A. Fabrication
 - 1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer's recognized installation standards for application intended.
 - 2. Finish exposed 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.
 - 3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with "Metal Doors and Frames", "Flush Wood Doors", "Stile and Rail Wood Doors" to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
 - 1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.
 - 2. For closers and panic devices: Verify with Architect and/or Owner if thru-bolts are required at specific door materials.

2.03 HINGES

- A. Manufacturers and Products:
 - 1. Scheduled Manufacturer and Product:
 - a. Ives 5BB series

2. Acceptable Manufacturers and Products:
 - a. Hager BB series
 - b. McKinney TB series
 - c. Stanley (Best/Dormakaba) FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. Hinge Height:
 - a. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide: 4-1/2 inches (114 mm) high
 - b. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide: 5 inches (127 mm) high
 - c. 2 inches or thicker doors: 5 inches (127 mm) high, regardless of door width
4. Hinge Width: 4-1/2 inches (114 mm) wide typical. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
5. Hinge quantity: 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.
6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins

2.04 SPRING HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Ives 3SP series
2. Acceptable Manufacturers and Products:
 - a. Hager 1250 series
 - b. McKinney 1502 series
 - c. Stanley (Best/Dormakaba) 2060 series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide 3 knuckle, spring full mortise hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
 - a. Exterior: Bronze or stainless steel, 4-1/2 inches (114 mm) high
 - b. Interior: Steel, 4-1/2 inches (114 mm) high
4. Doors over 1-3/4 inch (44 mm) thick or over 36 inches (914 mm) wide:
 - a. Exterior: Bronze/stainless steel, 5 inches (127 mm) high
 - b. Interior: Steel, 5 inches (127 mm) high
5. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
6. 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.

2.05 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Rockwood
 - b. Trimco

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 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.

2.06 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Rockwood
 - b. Trimco

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.07 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Best 40H series
2. Acceptable Manufacturers and Products:
 - a. No Substitute

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.

2. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
3. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
4. 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.
5. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
6. 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.
7. 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.
 - a. Lever Design: Best 14H.
 - b. Verify/Match Existing.

2.08 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
 - a. Best
2. Acceptable Manufacturers and Products:
 - a. No Substitute

B. Requirements:

1. Provide cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
 - a. Match owner's existing system.
 - b. Cylinder/Core Type:
 - 1) Small Format Interchangeable Core (SFIC)
3. Replaceable Construction Cores.
 - a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
 - 1) 3 construction control keys
 - 2) 12 construction change (day) keys.
4. Verify with Owner where permanent cores are to be shipped to.

2.09 KEYING

- A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- B. Requirements:
 1. Provide keying system capable of multiplex masterkeying.

2. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - a. Master Keying system as directed by the Owner.
 - b. Match Owner's existing system.
 - c. (Great)Grand Master Key System: Cylinders/cores operated by change(day) keys and subsequent masters (including grand/great grand) keys.
3. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
4. Provide keys with the following features:
 - a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
5. Identification:
 - a. Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
 - b. Identification stamping provisions must be approved by the Architect and Owner.
 - c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE".
 - d. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
6. Quantity: Furnish in the following quantities.
 - a. Change (Day) Keys: 3 per cylinder/core.
 - b. Permanent Control Keys: 3 (only applicable to interchangeable core).
 - c. Master Keys: 6/ea (per master).
 - d. Unused balance of key blanks shall be provided to Owner with cut keys.
7. Verify with Owner where permanent keys are to be shipped to.

2.10 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. LCN 4040XP series
2. Acceptable Manufacturers and Products:
 - a. No Substitute

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.

6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.11 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Trimco
 - b. Rockwood
 - c. Hager

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes kick and armor plates 1 1/2 inches (51 mm) less width of door on single doors, and 1 inch (25 mm) less width of door on pairs. Adjust width at doors with mullions, edge guards, gasketing or other conflicting hardware.
3. Size mop plates 1" less width of door. Adjust width as needed for edge guards or other conflicting hardware.
4. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.12 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Trimco
 - b. Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.

4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.13 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Zero International
2. Acceptable Manufacturers:
 - a. National Guard
 - b. Reese
 - c. Pemko

B. Requirements:

1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.14 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Rockwood
 - b. Trimco

B. Requirements:

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

2.15 FINISHES

- A. Provide finish for each item as indicated in the sets.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. 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. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
 - 4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.
- C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- I. Lock Cylinders:
 - 1. Install construction cores to secure building and areas during construction period.
 - 2. Replace construction cores with permanent cores as indicated in keying section.
- J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

- L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- M. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- N. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- O. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- P. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- Q. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Spring Hinges: Adjust to achieve positive latching when door can close freely from an open position of 30 degrees.
 - 2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items per manufacturer's instructions to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

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- B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.
- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

HARDWARE GROUP NO. 01

For use on Door #(s):
102B

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW SIZE, QTY, NRP AS REQ'D (SEE SPECS)	652	IVE
1	EA	CLASSROOM LOCK	40H-7-R-14H	626	BES
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN

HARDWARE GROUP NO. 02

For use on Door #(s):
113

Provide each OPENING with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 (NRP AS REQ'D)		652	IVE
1	EA	STOREROOM LOCK	45H-7-D-15H		626	BES
1	EA	ELECTRIC STRIKE	6400 FSE		630	VON
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE
1	EA	ACCESS CONTROL	(BY SECURITY CONTRACTOR)			
1	EA	DOOR POSITION SWITCH	(BY SECURITY CONTRACTOR)			
1	EA	POWER SUPPLY	PS902		LGR	SCE

DOOR NORMALLY CLOSED AND LOCKED. PRESENTING VALID CREDENTIAL RELEASES ELECTRIC STRIKE MOMENTARILY ALLOWING ACCESS. EMERGENCY ACCESS BY MECHANICAL KEY. FREE EGRESS AT ALL TIMES.

END OF SECTION

**SECTION 102600
WALL AND DOOR PROTECTION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Corner guards.
- B. Protective wall covering.

1.02 REFERENCE STANDARDS

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2024.
- B. ASTM D543 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents; 2021.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- D. ASTM F476 - Standard Test Methods for Security of Swinging Door Assemblies; 2023.
- E. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).

1.03 SUBMITTALS

- A. Product Data: Indicate physical dimensions, features, wall mounting brackets with mounted measurements, anchorage details, and rough-in measurements.
- B. Shop Drawings: Include plans, elevation, sections, and attachment details.
- C. Samples: Submit samples illustrating component design, configurations, joinery, color and finish.
 - 1. Submit two samples of protective wall covering, 6 by 6 inches (152 by 152 mm) square.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- E. Maintenance Data: Manufacturer's instructions for care and cleaning of each type of product. Include information about both recommended and potentially detrimental cleaning materials and methods.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wall and door protection items in original, undamaged protective packaging. Label items to designate installation locations.
- B. Protect work from moisture damage.
- C. Protect work from UV light damage.
- D. Do not deliver products to project site until areas for storage and installation are fully enclosed, and interior temperature and humidity are in compliance with manufacturer's recommendations for each type of item.
- E. Store products in either horizontal or vertical position, in compliance with manufacturer's instructions.

1.05 WARRANTY

- A. Manufacturer Warranty: Provide 5-year manufacturer warranty for metal crash rails. Complete forms in Owner's name and register with manufacturer.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures or internal connection failures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Corner Guards:
 - 1. Construction Specialties, Inc: www.c-sgroup.com/#sle.
 - 2. Inpro: www.inprocorp.com/#sle.
 - 3. Koroseal Interior Products: www.koroseal.com/#sle.
 - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Protective Wall Covering:
 - 1. Wolf-Gordon; RAMPART: www.wolfgordon.com/#sle.
 - 2. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE CRITERIA

- A. Impact Strength: Unless otherwise noted, provide protection products and assemblies that have been successfully tested for compliance with applicable provisions of ASTM D256 and/or ASTM F476.
- B. Chemical and Stain Resistance: Unless otherwise noted, provide protection products and assemblies with chemical and stain resistance complying with applicable provisions of ASTM D543.
- C. Fungal Resistance: Unless otherwise noted, provide protection products and assemblies which pass ASTM G21 testing.

2.03 PRODUCT TYPES

- A. Corner Guards - Surface Mounted:
 - 1. Material: Type 304 stainless steel, No. 4 finish, _____ gauge, _____ inch (_____ mm) thick.
 - 2. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
 - 3. Width of Wings: 1 inches (_____ mm).
 - 4. Corner: Square.
 - 5. Color: As indicated.
 - 6. Length: One piece.
- B. Protective Wall Covering:
 - 1. Material: 100% vinyl.
 - 2. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
 - 3. Color: As indicated on drawings.
 - 4. Accessories: Provide manufacturer's standard color-matched trim and moldings.
 - a. Top Trim: As indicated on drawings.
 - 5. Mounting: Adhesive.

2.04 FABRICATION

- A. Fabricate components with tight joints, corners and seams.
- B. Pre-drill holes for attachment.
- C. Form end trim closure by capping and finishing smooth.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.
- B. Verify that field measurements are as indicated on drawings.
- C. Verify that substrate surfaces for adhered items are clean and smooth.

1. Test painted or wall covering surfaces for adhesion in inconspicuous area, as recommended by manufacturer. Follow adhesive manufacturer's recommendations for remedial measures at locations and/or application conditions where adhesion test's results are unsatisfactory.
- D. Start of installation constitutes acceptance of project conditions.

3.02 INSTALLATION

- A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to supporting construction.
- B. Position corner guard 4 inches (102 mm) above finished floor to height indicated on drawings.
- C. Position protective wall covering no less than 1 inch (25.4 mm) above finished floor to allow for floor level variation.
 1. Wainscot Installation: Establish a level line at the specified height for entire length of run. Install by aligning top of edge of covering with this line.
 2. Apply adhesive with 1/8 inch (3.2 mm) V-notch trowel to an area of wall surface that can be completed within cure time of the adhesive.
 3. Install trim pieces as required for a complete installation. Allow tolerance for thermal movement.
 4. At joints indicated to be caulked, allow for a minimum 1/16 inch (1.6 mm) wide gap between edges of sheets. Gaps are required to be of consistent width throughout the project.
 5. Use a roller to ensure maximum contact with adhesive.

3.03 TOLERANCES

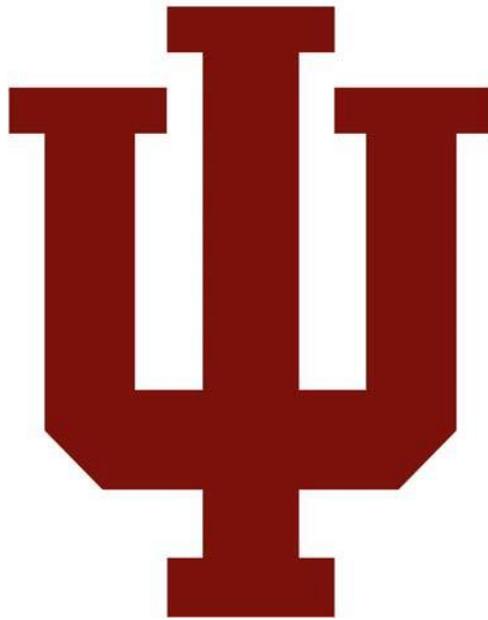
- A. Maximum Variation From Required Height: 1/4 inch (6 mm).
- B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch (6 mm).

3.04 CLEANING

- A. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

END OF SECTION

**INTERIOR SIGNAGE STANDARDS
FOR INDIANA UNIVERSITY CONSTRUCTION PROJECTS**



PREPARED BY:

UNIVERSITY ARCHITECT'S OFFICE
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SECTION 104000 – INTERIOR SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following panel signs:

1. IU sign type A to G and K to L.
2. IU sign type H1 to H3 and J.
3. Site (Project Construction) Sign
4. Dedication Plaques

1.2 DEFINITIONS

A. **ADA, Accessibility Guidelines (2010):** U.S. Department of Justice “Americans with Disabilities Act (ADA) Accessibility Guidelines”: **ADA Standards for Accessible Design** (REVISED, 2010 Standards), for scoping and technical requirements for new construction and alterations; result of the adoption of revised 2010 Standards in the final rules for Title II (28 CFR part 35) and Title III (28 CFR part 36).

1.2 LEED REQUIREMENTS

A. Work performed and materials provided under this Section shall comply with Division 1 Sections and LEED credit goals established for project.

1.3 SUBMITTALS

A. **General:** Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. **Product Data:** For each type of product indicated, include construction details relative to materials, dimensions of individual components, profiles, and finishes for each type of sign.

C. **LEED Submittal Requirements:** Provide the following which represents some of the submittal requirements. Please refer to Division 1 for additional requirements.

1. **Construction Waste Management Credits MR 2.1 and 2.2:** Comply with Construction Waste Management Program. Provide documentation for waste and excess materials taken off site.

- a. Comply with construction waste management procedures as indicated in Division 1 Specification Sections regarding “Construction Waste Management” to achieve LEED Project goals.

2. **Materials and Resources – Credits MR 4.1, MR 4.2, MR 5.1, and MR 5.2:** Provide the following, either on schedule of values material cost breakdown or by separate written documentation:

- a. Statement indicating material costs for each product. Information may be included on schedule of values material cost breakdown or by separate written documentation.
- b. **Credits MR 4.1 and MR 4.2:** Product Data or manufacturer’s statement indicating percentages by weight of post-consumer and post-industrial recycled content. Provide separate totals for post-consumer and post-industrial recycled content.
- c. **Credit MR 5.1:** Address and phone number of location of manufacturer for each product.
- d. **Credit MR 5.2:** Manufacturer’s statement indicating the locations where the base materials of each product were extracted, mined, quarried, harvested, etc.

3. Low-Emitting Materials –

- a. Credit EQ 4.1: Manufacturers' product data for sealants, adhesives, and primers including printed statement of VOC content.

C. Shop Drawings: Show fabrication and installation details for signs.

- 1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
- 2. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign. Provide photo-realistic type proof document of Dedication Plaque for UAO and Board of Trustees' review and approval.
- 3. Wiring Diagram: Power, signal, and control wiring.

1.4 QUALITY ASSURANCE

A. Single Source Responsibility: For each sign type indicated from one source from a single manufacturer. B.

B. Regulatory Requirements: Comply with most stringent of applicable provisions in ADA Accessibility Guidelines, ICC/ANSI A117.1, and Indiana Building Code.

C. Product Options: Drawings and Specifications indicate size, profiles, and dimensional requirements of panel signs and are based on the specific type indicated. Signs by other manufacturers may be considered provided that deviations in dimensions and profiles are minor and do not change the design concept as judged solely by the University Architect's Office. Burden of proof of equality is on the proposer.

1.5 COORDINATION

A. Coordinate placement of anchorage devices with templates for installing signs.

1.6 DELIVERY, STORAGE & HANDLING

A. Deliver components correctly packed to prevent damage.

B. Store in secure areas, out of weather and protected from work of other trades.

1.7 WARRANTY

A. Provide Manufacturer's standard two year limited warranty covering manufacturing defects.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

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

1. Panel Signs:

- a. ASI-Modulex, Inc.– 2017 W. 18th Street, Indianapolis, IN 46202
- b. Essential Architectural Signs, Inc. – 6464 Rucker Road, Indianapolis, IN 46220
- c. MD Designs - 15372 Mystic Rock Drive, Carmel, IN 46033
- d. Sign Solutions, Inc., 505 Commerce Parkway West Dr., Greenwood, IN 46143

2.2 MATERIALS

A. Panel Signs:

1. Plaque Material for Signs A to G and K to L: Monolithic, stratified, polyimide resin.
2. Plaque Material for Signs H1 to H3 and J: 1.020 inch thick Lexan.
3. Laminating Base: 0.010 inch polyester laminated to 1/8 inch thick acrylic.
4. Fastener for Signs A to G and K to L, and Signs H1 to H3 and J: .030" thick double face tape

B. Building Plaques:

1. Plaque Material should be either cast bronze or cast aluminum, unless special approval is granted by UAO for another design. The metal shall coordinate with the hardware finish of the facility.

2.3 PANEL SIGNS

A. **Sign Types A to G and K to L:** Manufacturer's standard monolithic tactile plaque sign construction meeting accessibility requirement and as indicated for materials, thickness, finish, colors, design, shapes, sizes, and details of construction.

1. Type: Unframed.
2. Fabrication Tolerance: Plus or minus 1/16 inch.
3. Plaque Color: White.

B. **Sign Types H1 to H3 and J:** Manufacturer's standard monolithic plaque sign construction meeting accessibility requirement and as indicated for materials, thickness, finish, colors, design, shapes, sizes, and details of construction.

1. Type: Unframed
2. Edge Condition: Straight edges, free from saw marks or other imperfections.
3. Corners: ½ inch radius, unless otherwise indicated.
4. Fabrication Tolerances: Plus or minus 1/16 inch.
5. Plaque Color: ADA Blue.

C. **Graphics:** Precisely formed, uniformly opaque graphics to comply with accessibility requirements indicated for size, spacing, content, position, and colors. Graphic is subsurface applied by the ASP Process onto a vinyl plastic face prior to the application of the background color and adhesive. Body copy to be Helvetica Regular, upper and lower case, sized as proposed on standard. Body copy shall be color as indicated.

1. **Text:** Helvetica Regular, upper and lower case, sized as indicated in Signage Schedule. Text shall be accompanied by Grade 2 Braille for all signs, raised 1/32 inch (0.8 mm) above surface with contrasting colors where indicated. Translation of sign copy shall be the responsibility of the manufacturer.

2. **Color:** As indicated in Signage Schedule.

3. **Room Numbers:** Assigned by Indiana University Bureau of Facilities, Programming, and Utilization.

4. **Surface Finish:** Matte.

5. **Pictograms:** Pictograms are to be raised 1/32" above surrounding surfaces. Where required, pictograms will be placed within an area 6" in height in which no other information will be displayed. All symbols and pictograms shown in drawings are for reference only and shall be reproduced from AIGA/DOT Symbols Signs book or electronic file published by AIGA.

2.4 DEDICATION PLAQUE

A building dedication plaque shall be included for any new construction and major building addition/renovation projects. The layout shown in the Signage Standards should be considered a typical layout; as example only. The text and layout for this specific project will be decided by the University Architect's Office and a representative from the IU Board of Trustees. This layout will be given to the Architect of Record on the project for inclusion in the project's interior signage specifications. The dedication plaque location and finish shall be determined by the Architect of Record and approved by the University Architect's Office.

2.5 FINISHES, GENERAL

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. **Appearance of Finished Work:** Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 ACRYLIC SHEET FINISHES

A. **Colored Coatings for Acrylic Sheet:** For copy and background colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and that are UV and water resistant for three years for application intended.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

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

3.2 INSTALLATION

A. Locate signs and accessories according to accessibility requirements indicated, following IU standards and using mounting methods of types described and complying with manufacturer's written instructions.

1. Install signs level, plumb, and at heights indicated, with sign surfaces free of distortion and other defects in appearance.

B. **Wall-Mounted Signs:** Install panel signs with 0.030-inch thick double face tape manufactured for the specific purpose of permanently mounting signage.

1. Single Door Application: 2-inch offset from lever side of door.

2. Double Door and Sidelight Applications: 2-inch offset from frame in right hand door of pair.

3. Mounting Height: 61 inches above finish floor to top edge of sign. Signs in entire project shall be mounted at same height throughout.

C. **Glass-Mounted Signs:** Provide matching opaque plate on opposite side of glass to conceal mounting materials.

3.3 CLEANING AND PROTECTION

A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

3.4 SIGNAGE SCHEDULE

A. All Signage projects are to have a Signage Schedule and Signage Location Plans.



Type "B" Sign

Sign face to be matte white/black 1/8" thick 2-ply rotary engraveable laminated impact acrylic or similar product.

Room number text to be Helvetica Regular or Helvetica Neue Regular upper case 3/4" character height with 1/32" depth raised tactile lettering using Black ADA Alt Applique.

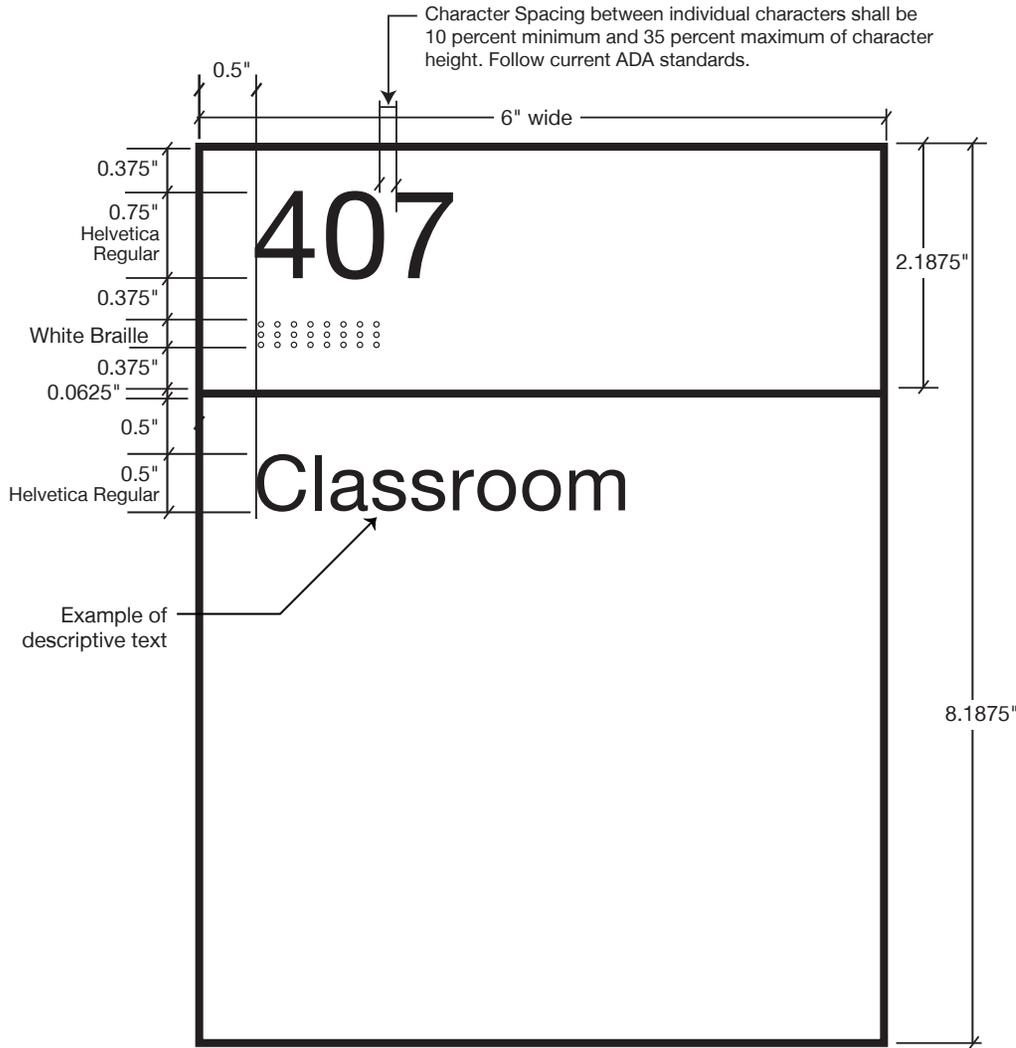
Room number text should be duplicated below tactile type in White domed or round Braille (Grade 2) per current ADA standards. Note to follow ADA Specifications that Braille shall be separated 3/8" from any other tactile characters, raised elements or borders.

Descriptive text is engraved 1/2" tall Helvetica Regular or Helvetica Neue Regular cap and lower case with a flush left alignment.

The outside edge of sign base is beveled at a 45 degree one half the depth of the laminate.

Signage to be mounted with 0.030" thick double face foam tape.

Install sign 61" from floor to top of sign. Sign shall be installed on the wall next to the latch side of the door so that a clear floor space of 18" by 18" minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position. Follow current ADA guidelines and attain UAO approval for alternate locations if space is not available per this designation.



SECTION 230592 - HVAC INSTRUMENTATION AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 230500 "COMMON WORK RESULTS MECHANICAL" all apply to the work of this Section as if fully repeated herein.

1.2 SUMMARY

- A. This Section includes control equipment for HVAC systems and components.
- B. Controls Installation Contractor (CIC) is to receive, install, connect and test devices that are purchased directly from Siemens by the University.
- C. Mechanical contractor to install control valves.
- D. Mechanical contractor to provide necessary sensor wells and gauge taps.
- E. Electrical contractor is to provide 120/60 VAC power to DDC panels. CIC is to install power from available 120V circuits at panels boards to controllers and actuators (provide transformers as necessary).
- F. Electrical contractor is to install variable frequency drives and associated connections for power (to VFD and from VFD to motor) except when drives are factory-mounted and factory-wired. CIC to install low-voltage control signal cabling to VFDs.
- G. Sheet metal contractor is to install automatic dampers.

1.3 SEQUENCE OF OPERATION

- A. A DDC Points List and a written Sequence of Operation for each system appears on the Construction Documents.

1.4 SUBMITTALS

- A. Product Data: Include manufacturer's technical literature for each control device. Indicate dimensions, capacities, performance characteristics, electrical characteristics, finishes for materials, and installation and startup instructions for each type of product indicated.

- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
1. Bill of materials of equipment indicating quantity, manufacturer, and model number.
 2. Schematic flow diagrams coils, dampers, valves, and control devices.
 3. Wiring Diagrams: Power, signal, and control wiring.
 4. Details of control panel faces, including controls, instruments, and labeling.
 5. Written description of sequence of operation.
 6. Schedule of dampers including size, leakage, and flow characteristics.
 7. Schedule of valves including flow characteristics.
 8. DDC System Hardware:
 - a. Wiring diagrams for control units with termination numbers.
 - b. Schematic diagrams and floor plans for field sensors and control hardware.
 - c. Schematic diagrams for control, communication, and power wiring, showing trunk data conductors and wiring between operator workstation and control unit locations.
 9. Controlled Systems:
 - a. Schematic diagrams of each controlled system with control points labeled and control elements graphically shown, with wiring.
 - b. Written description of sequence of operation including schematic diagram.
 - c. Points list.

1.5 QUALITY ASSURANCE

2

- A. Installer Qualifications: Automatic control system manufacturer's authorized representative who is trained and approved for installation of system components required for this Project.

PART 2 - PRODUCTS

2.1 CONTROL SYSTEM

- A. Indiana University, the Owner, will pre-purchase directly from Siemens Building Technologies the following equipment for the building automation system:
1. Direct Digital Control panels.
 2. Auxiliary panels with internal components pre-wired.
 3. All required sensing devices (i.e.: temperature, CO2 sensors).
 4. Safety devices: low temperature detectors.
 5. Valves, valve actuators.
 6. Dampers, damper actuators.
 7. Relays.
 8. Transformers.
 9. Thermostats.
 10. Variable Frequency Drives.
 11. All necessary design engineering labor.

12. All necessary technician labor to verify point wiring, program and start up all DDC panels, perform acceptance testing.
 13. Project management labor required to direct the CIC and attend job meetings.
- B. During the bidding process, the Control Installation Contractor (CIC) shall address all questions relative to the Siemens drawings to Siemens Building Technologies Inc. directly in writing. Siemens shall respond in writing with a copy to the consulting engineer and to Indiana University Architects Office, attention Mr. P.K. Patel.
 - C. All products pre-purchased by the Owner, as listed above, will be shipped to the (CIC) Control Installation Contractor for installation and wiring. The CIC shall receive, handle and store all material to be installed under this contract. The CIC shall be responsible for verification of quantity received. Any discrepancies shall be reported in writing to Siemens Building Technologies, Inc. within 48 hours of delivery.
 - D. CIC shall install all control equipment provided by the Owner. The CIC shall furnish, install, and terminate all necessary wiring, conduit, hangers, etc. to provide a complete control system installation. All controls to be installed and adjusted by trained mechanics in the full time employ of the CIC.
 - E. Upon completion of all installation and wiring by the CIC the Owners agent (Siemens Building Technologies) will conduct verification of point-to-point wiring and pneumatic tubing. The CIC will be responsible to make any necessary corrections. At the completion of the point-to-point verification, approval shall be made by the Owner's Construction Inspection Department and Siemens Building Technologies, Inc.
 - F. Upon approval by the Owners Construction Inspection Department, the Owner's agent shall program all DDC panels, create necessary graphics and provide any interface between the building automation system and the campus environmental control system.
 - G. Upon completion of the aforementioned, a performance test shall be conducted as specified in Section 5.0 On-site Testing.
 - H. Upon a successful conclusion of the final checkout, performance test and the Owner's acceptance, the CIC's responsibility reverts to a standard 24-month warranty for labor and material installed by the CIC and labor only for equipment supplied by others.
 - I. The Owner's agent (Siemens Building Technologies, Inc.) assumes the manufacturer's warranty for all equipment supplied to the CIC on this project.
 - J. Siemens shall supply the following directly to Indiana University:
 1. Design Engineering labor required to interface with IC and the consulting engineer to design the temperature control system.
 2. Supervision of the CIC installation and final checkout and approval.
 3. Project management labor to attend job meetings and ensure construction time compliance and settlement of any conflicts.

4. Technician labor required for point to point check out, software programming, graphics creation and Owner training.
 5. All material listed in 2.1, A.
 6. During the warranty period, Siemens will respond to all requests rendered by the Owner for satisfactory operation of the system.
- K. Control system shall consist of sensors, indicators, actuators, final control elements, interface equipment, other apparatus, and accessories to control mechanical systems.
- L. Control system shall consist of sensors, indicators, actuators, final control elements, interface equipment, other apparatus, accessories, and software connected to distributed controllers operating in multiuser, multitasking environment on token-passing network and programmed to control mechanical systems. A local or remote operator workstation permits interface with the network via dynamic color graphics with each mechanical system, building floor plan, and control device depicted by point-and-click graphics.

2.2 DDC EQUIPMENT

- A. Application Software: Provide all required updates to application software for existing campus operator workstations to ensure complete interoperability with existing Siemens systems, as applicable.
- B. Central (Master) Control Units: Modular, comprising processor board with programmable, nonvolatile, random-access memory.
1. Units monitor or control each input/output point; process information; execute commands from other control units, devices, and operator stations; and download from or upload to operator station.
 2. Stand-alone mode control functions operate regardless of network status. Functions include the following:
 - a. Global communications.
 - b. Discrete/digital, analog, and pulse input/output.
 - c. Monitoring, controlling, or addressing data points.
 - d. Testing and developing control algorithms without disrupting field hardware and controlled environment.
- C. Local Control Units: Modular, comprising processor board with electronically programmable, non-volatile, read-only memory; and backup power source.
1. Units monitor or control each input/output point; process information; and download from or upload to operator station.
 2. Stand-alone mode control functions operate regardless of network status. Functions include the following:
 - a. Global communications.
 - b. Discrete/digital, analog, and pulse input/output.
 - c. Monitoring, controlling, or addressing data points.
- D. Software: Update to latest version of software at Project completion. Include and implement the following capabilities from the control units:

1. Units of Measure: Inch-pound and SI (metric).
2. Load Control Programs: DDC with fine tuning, and trend logging.
3. Programming Application Features: Include trend point, alarm messages, weekly scheduling, and interlocking.

2.3 CONTROL PANELS

- A. Control Panels: Fully enclosed standard metal or plastic cabinet with locking doors or locking removable backs. Match finish of panels.
- B. Local Control Panels: Unitized cabinet with suitable brackets for wall or floor mounting, located adjacent to each system under automatic control. Provide common keying for all panels.
 1. Fabricate panels of 0.06-inch-thick, furniture-quality steel, or extruded-aluminum alloy, totally enclosed, with hinged doors and keyed lock and with manufacturer's standard shop-painted finish.
 2. Panel-Mounted Equipment: Temperature and humidity controllers, relays, and automatic switches; except safety devices. Mount devices with adjustments accessible through front of panel.
 3. Door-Mounted Equipment: Flush-mount (on hinged door) manual switches, including damper-positioning switches, changeover switches, thermometers, and gages.

2.4 DDC CONTROLLERS

- A. Each stand-alone DDC Controller shall be able to extend its performance and capacity through the use of remote Application Specific Controllers (ASCs).
- B. Each ASC shall operate as a stand-alone controller capable of performing its specified control responsibilities independently of other controllers in the network. Each ASC shall be a microprocessor-based, multi-tasking, real-time digital control processor.
- C. Each ASC shall have sufficient memory to support its own operating system and data bases including:
 1. Control Processes.
 2. Energy Management Applications,
 3. Operator I/O.
- D. The operator interface to any ASC point data or programs shall be through any network-resident PC workstation, or any PC or portable operator's terminal connected to any DDC panel in the network.
- E. Application Specific Controllers shall directly support the use of a portable terminal. The capabilities of the portable terminal shall include but not be limited to the following:
 1. Display temperatures.
 2. Display status.
 3. Display set-points.
 4. Display control parameters.
 5. Override binary output control.

6. Override analog set-points.
 7. Modification of gain and offset constants.
- F. Power fail Protection: All system set-points, proportional bands, control algorithms, and any other programmable parameters shall be stored such that a power failure of any duration does not necessitate reprogramming the controller.
- G. Configuration and Download: The ASCs shall have the capability of receiving configuration and program loading by both of the following: 1) locally, via a direct connect portable laptop service tool, 2) over the network, from the portable laptop service tool, and; 3) from the Operation Workstation, via the communication networks.
- H. Continuous Zone Temperature Histories: Application Specific Controllers shall have the capability to automatically and continuously maintain a history of the associated zone temperature to allow users to quickly analyze space comfort and equipment performance for the past 24 hours. A minimum of two samples per hour shall be stored.
- I. Extended Digital Controllers: Extended Digital Controllers shall provide all of the capabilities defined above for the ASCs. In addition, they shall include the following features:
1. Extendable input and output points.
 2. Customizable graphic software programming of control sequences.

2.5 SENSORS

- A. Electronic Sensors: Vibration and corrosion resistant for wall, immersion, or duct mounting as required.
1. Resistance Temperature Sensors and Transmitters: Platinum or nickel.
 - a. Accuracy: Plus or minus 0.2 percent at calibration point.
 - b. Wire: Twisted, shielded-pair cable.
 - c. Insertion Elements in Ducts: Use where not affected by temperature stratification or where ducts are smaller than 9 sq. ft.
 - d. Averaging Elements in Ducts: Use where prone to temperature stratification or where ducts are larger than 9 sq. ft., length as required.
 - e. Insertion Elements for Liquids: Brass socket with minimum insertion length of 2-1/2 inches.
 - f. Space Temperature Sensors: Mount beneath a thermostat cover with local set-point adjustment.
 2. Carbon Dioxide Sensor and Transmitter: Single detectors, using solid state infrared sensors, suitable over a temperature range of 23 to 130 degrees F (minus 5 to plus 55 C), calibrated for 9 to 2 percent, with continuous or averaged reading, 4 to 20 mA output, and suitable for wall-mounting, as indicated.

2.6 ACTUATORS

- A. Electric Motors: Size to operate with sufficient reserve power to provide smooth modulating action or two-position action. Actuators shall be manufactured by Siemens.

- B. Permanent Split-Capacitor or Shaded-Pole Type: Gear trains completely oil immersed and sealed. Equip spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.
- C. Electronic Damper and Large-Valve Actuators: Direct-coupled type designed for minimum 60,000 fully-stroke cycles at rated torque.
 - 1. Valves: Size for torque required for valve close-off at maximum pump differential pressure.
 - 2. Dampers: Size for running torque calculated as follows:
 - a. Dampers with 2 to 3 Inches wg of Pressure Drop or Face Velocities of 1000 to 2500 FPM: Multiply the minimum full-stroke cycles above by 1.5.
 - b. Dampers with 3 to 4 Inches wg of Pressure Drop or Face Velocities of 2500 to 3000 FPM: Multiply the minimum full-stroke cycles above by 2.0.
 - 3. Coupling: V-bolt and V-shaped, toothed cradle.
 - 4. Overload Protection: Electronic overload or digital rotation-sensing circuitry.
 - 5. Fail-Safe Operation: Mechanical, spring-return mechanism. Provide external, manual gear release on non-spring-return actuators.
 - 6. Power Requirements (Modulating): Maximum 10 VA at 24-V ac or 8 W at 24-V dc.
 - 7. Proportional Signal: 2- to 10-V dc or 4 to 20 mA, and 2- to 10-V dc position feedback signal.

2.7 CONTROL VALVES

- A. Control Valves: Factory fabricated, of type, body material, and pressure class based on maximum pressure and temperature rating of piping system, unless otherwise indicated.
- B. Globe or Ball Valves NPS 2 and Smaller: Bronze body, bronze trim, and screwed ends.

PART 3 – EXECUTION

3

3.1 EXAMINATION

- A. Verify that conditioned power supply is available to control units.
- B. Verify that duct, pipe, and equipment-mounted devices and wiring are installed before proceeding with installation.

3.2 DDC CONTROL SYSTEM INSTALLATION

- A. Install equipment level and plumb.
- B. Install software in control units. Implement all features of programs to specified requirements and as appropriate to sequence of operations indicated on the Drawings.

- C. Connect and configure equipment and software to achieve sequence of operations specified on the Drawings.
- D. Verify location of space temperature sensors, and other exposed control sensors with plans and room details before installation. Locate all 48 inches above the floor (align horizontally with light switches), unless indicated otherwise on the Drawings.
 - a. Install averaging elements in ducts and plenums in crossing or zigzag pattern.
- E. Install labels and nameplates to identify control components according to Division 23 Section "Identification for HVAC Piping and Equipment."
- F. Install hydronic instrument wells, valves, and other accessories according to Division 23 Section "Hydronic Piping."

3.3 ELECTRICAL WIRING AND CONNECTION INSTALLATION

- A. Install raceways, boxes, and cabinets according to Division 26 Section "Raceways, Boxes, and Cabinets."
- B. Install building wire and cable according to Division 26 Section "Conductors and Cables."
 - 1. All control cable wiring shall be installed in the raceway. See Div. 026 for raceway specifications.
 - 2. Conceal cable, except in mechanical rooms and areas where other conduit and piping are exposed.
 - 3. Concealed and accessible cable shall be jacketed plenum rated cable.
 - 4. Bundle and harness multiconductor instrument cable in place of single cables where several cables follow a common path.
 - 5. Fasten flexible conductors, bridging cabinets and doors, along hinge side; protect against abrasion. Tie and support conductors.
 - 6. Number-code or color-code conductors for future identification and service of control system, except local individual room control cables.
 - 7. Connect manual-reset limit controls independent of manual-control switch positions.
 - 8. Connect hand-off-auto selector switches to override automatic interlock controls when switch is in hand position.

3.4 CONNECTIONS

- A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
 - 1. Install piping adjacent to machine to allow service and maintenance.
- B. Ground Equipment

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturers torque values are not indicated, use those specified in UL 486A and UL 486B.

3.5 FIELD QUALITY CONTROL

- A. Manufacturers Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, Report results in writing.
 1. Test and adjust controls and safety. Replace damaged and malfunctioning controls and equipment, and retest.
- B. Engage a factory-authorized service representative to perform startup service.
- C. Replace damaged or malfunctioning controls and equipment.
 1. Start, test, and adjust control systems.
 2. Demonstrate compliance with requirements. including calibration and testing, and control sequences.
 3. Adjust, calibrate, and fine tune circuits and equipment to achieve sequence of operation specified on the Drawings.
- D. Verify DDC as follows:
 1. Verify software including automatic restart, control sequences, scheduling, reset controls, and occupied/unoccupied cycles.
 2. Verify local control units including self-diagnostics.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain control systems and components.
 1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment and schedules.

END OF SECTION

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SIEMENS

Indianapolis
Smart Infrastructure

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Indianapolis, IN 46268
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03/25/26

FOR INFORMATION CONTACT
ERIC HUGHES

ENGINEERING DATA FOR
IU OPTOMETRY 1ST FLR RENO

IU PROJ #20250150,
USA

44OP-415703

DELV Design Studio, LLC.
ARCHITECT

Creative Engineering Solutions
ENGINEER

CONTRACTOR

DWG DESCRIPTION

	GENERAL
	Cover Sheet
TOCA	Table of Contents
	SCHEDULES
	Valve Schedule
	GENERAL
GEN	General Notes for CIC
LEG	Legend & Abbreviations
ABAC	Anixter Building Auto. Cables
TTRM	TEC Termination Specification
	CONTROL DRAWINGS
001-002	SYSTEM ARCHITECTURE
003-004	VAV Box w/HWRht - 2023

REVISION HISTORY

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IU PROJ #20250150.

ENGINEER	DRAFTER	CHECKED BY	INITIAL RELEASE	LAST EDIT DATE
WLH	WLH			03/24/26

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440P-415703

TOCA

**Indianapolis
Smart Infrastructure**

Valve Submittal - Water

LOCATION: PROJECT NAME: IU OPTOMETRY 1ST FLR RENO DATE: 03/24/26
JOB NO: 440P-415703 PAGE: 1
ENGR: WLH REV:

GENERAL NOTES:
 1. All valves 2-1/2" and larger have flanged ends, 2" and smaller have screwed ends.
 2. All control valves and wells shall be installed by the mechanical contractor.
 3. Standard abbreviations used on control valves are:
BODY TYPES: 3W - Three way; 2W - Two way; A - Angle; N.C. - Normally Closed; N.O. - Normally Open;
 NOC - Ball Valve can be N.O. or N.C.; BF - Butterfly Valve; DS - Double Seated;
UNITS: Steam inlet pressure, actual pressure drop, and shut off pressure indicated in PSIG.
ACTUATOR TYPES: SR - Spring Return; NSR - No Spring Return
 CR - Capacitor Driven Return; DA - Double Acting

Valve ID/Location	Qty	Product Number	Valve Size	Body Type	Body Style	Actual Cv	Actuator Type	Design P. Drop (psi)	Required Flow (gpm)	Min (gpm)	Max (gpm)	Preset (gpm)	Steam Inlet	Press Drop (psi)	Valve Spec Sheet	Shut Off	ANSI Class	Comment
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Mechanical System: VAV

VAV Box w/HWRht - 2023

V-1	1	259-02067	0.50	3W	Globe	1.60	NSR	5	3.00	N/A	N/A	N/A	--	3.5156	154 025	95	250	VAV-108
V-2	1	259-02036	0.50	2W	Globe	1.60	NO-NSR	5	2.50	N/A	N/A	N/A	--	2.4414	154 010	120	250	VAV-113

NOTES: All control valves and wells shall be installed by the heating contractor.

GENERAL NOTES FOR CONTROLS INSTALLATION CONTRACTOR (CIC)

1. All work shall be performed in accordance with the contract documents and all applicable codes and standards.
2. Provide and install all wiring, conduit, circuit breakers, etc., and any needed mounting hardware to install control devices/panels (brackets, extensions, stands, etc.) for a complete installation.
3. Mount, wire and pipe (control pneumatics) all devices including panels, sensors, relays, actuators, switches, sensor covers/guards, etc. for a complete installation.
4. All installation of the energy management system and components is by the CIC unless noted otherwise.
5. IU, IUI, IUK, IUE, through Siemens Building Technologies, Inc., will provide all system controllers, relays, transformers, sensors, prefabricated auxiliary panels and switches unless otherwise noted. The CIC will provide all installation materials necessary to mount, install, and wire all controls devices.
6. All devices to be installed according to manufacturer's recommendations and the contract documents. Field verify exact locations of all devices/equipment. Coordinate with Siemens.
7. All routings for electrical installation are to be verified by the CIC.
8. C.I.C. shall be responsible for interlock wiring between VFDs and local disconnect switches, where applicable.
9. C.I.C. shall coordinate their work with Siemens, the Contractor, other Subcontractors, and the Owner.
10. All control devices and panels that require 120V power that are not powered by the division 26 contractor shall require a dedicated circuit from its own breaker. Provide circuit breakers and power wiring where required.
11. Mount panels on racks when wall space is not available. The engineer shows panel locations on HVAC drawings. Actual panel locations are to be coordinated with the contractors and owner.
12. All line voltage wiring shall be installed in conduit.
13. All wiring must be pulled in one length. Splicing is not allowed. All Control wiring shall be continuous.
14. All wiring in mechanical rooms, concealed and inaccessible places and/or where required by project plans and specifications shall be installed in conduit.
15. Any conductor carrying voltage greater than 24VAC shall not occupy the same conduit as low voltage wiring.
16. Conduits installed outdoors or encased in concrete shall be in rigid conduit.
17. Open cable shall be installed only where space is accessible and allowed by the project plans and specifications. In these cases, cable shall be rated for space they occupy. Provide plenum rated materials as required.
18. See specifications and IU PPA Control Design Standard document for conduit use & installation requirements.
19. Provide as-built record drawings of installation of the system.
20. Record drawings shall include routing and sizing of communications wiring, sensor wiring, power trunk wiring, transformer locations, field device locations, etc.
21. C.I.C. shall receive, handle, and store, as needed, all material to be installed under their contract. Subcontractor shall be responsible for verification of quantity received. The CIC will be responsible for verifying all received material. Discrepancies must be immediately documented with the shipping company prior to their leaving the delivery site and shall be reported in writing to Siemens Building Technologies, Inc. within 48 hours. The CIC is responsible for the security of all materials received and stored. The CIC will replace, at his expense, any materials missing or damaged.
22. Provide and install all tags and labels per plans and specifications for all control devices. Coordinate tag and label text, size and type with Siemens. Tag wiring at the field panel with the full point name. Tag wiring at the field device with the full point address.
23. Terminate all wiring. If necessary, CIC will make all cutover terminations under the supervision of Siemens Building Technologies at startup, unless otherwise directed by Siemens.
24. CIC is responsible for participating in the commissioning process to the extent that it involves their installation work.
25. For wire runs to devices that require 24 VAC such as electric valve actuators, electric damper actuators, sensing devices, etc., CIC shall use the following wiring arrangement:
 - a. For devices that use a three-wire arrangement per the control drawings for carrying the 24VAC power and signal to the device, install cable type 18-gauge 3 conductor (18-3C) unless otherwise noted on control wiring diagrams. Neutral is tied together at the auxiliary panel.
 - b. For devices that use a four-wire arrangement per the control drawings for carrying the 24VAC power and signal to the device, use the following cable types unless otherwise noted on control wiring diagrams.
 - i. Install cable type 14-gauge 2 conductor (14-2C) for the 24VAC powering the device.
 - ii. Install cable type 18-gauge 2 conductor (18-2C) for the signal controlling the device.
 - iii. Tie neutrals together at the device.
 - c. QPA and Q series sensors may be landed to the RTS port on the BACnet TEC controller and will have a pre-terminated wire in either 50- or 100-foot length. See individual drawing details for further information.
26. C.I.C. shall use control wire according to the following schedule. Purchase wire manufactured by one of the following three vendors or approved equal. If wire size is not specified coordinate with Siemens and plan on using 12 gauge.
27. Minimum conduit size: 3/4".
28. Control wiring concealed in walls will be in EMT conduit. Existing wall will be 3/4" flex if inaccessible.
29. Wire size for terminal equipment devices will be either 18 AWG – 2 conductor or 18 AWG – 3 conductor wire unless otherwise noted or providing power to the TEC.

Anixter

Description	Part Number	Application
ETHERNET 23AWG, CAT6	CMP-00424AVA-7-06	Ethernet Network Communication cabling (verify type/color)
24-1p (STR) SHD Cable-Plenum	H-B-TSP24LC-CMP	BLN trunks
24-1p (STR) SDH Cable-Plenum	H-F-TSP24LC-CMP	FLN trunks
24-1.5p (STR) FT-6 Cable-Plenum	H-F-1.5TSP24LC-CMP	MSTP FLN BACnet trunks
20-2c (Solid) Cable-Plenum	KNX-TSP20LC-CMP	KNX Cable for DXR
18-2c (STR) Cable-Plenum	H-TP18-CMP	Point/low voltage wiring
18-3c (STR) Cable-Plenum	H-3C18-CMP	DXR/TEC actuators, transducers
18-6c (STR) Cable-Plenum	1806C-2-2N-01	Point/low voltage wiring
14-2c (STR) Cable-Plenum	H-2C14-CL3P	24VAC power trunk/power for devices

Anixter Contact: Gina Menolascino, Siemens Industry Account Manager
 888-479-3830
 2301 Patriot Blvd. Glenview, IL, 60026
 sbt@anixter.com

Belden

Description	Part Number	Application
ETHERNET 23AWG, CAT6	2413F D151000	Ethernet Network Communication cabling (verify type/color)
24-1p (STR) SHD Cable-Plenum	YR48881 0031000 (CMP)	BLN trunks
24-1p (STR) SDH Cable-Plenum	YR49243 2121000 (CMP)	FLN trunks
24-1.5p (STR) FT-6 Cable-Plenum	SPECIAL ORDER WIRE	MSTP FLN BACnet trunks
20-2c (Solid) Cable-Plenum	SPECIAL ORDER WIRE	KNX Cable for DXR
18-2c (STR) Cable-Plenum	YM48514 0061000	Point/low voltage wiring
18-3c (STR) Cable-Plenum	YM48447 0061000	DXR/TEC actuators, transducers
18-6c (STR) Cable-Plenum	SPECIAL ORDER WIRE	Point/low voltage wiring
14-2c (STR) Cable-Plenum	YM48515 0131000	24VAC power trunk/power for devices

Belden Contact: Communications Supply Corporation
 317-266-1600
 1560 Indiana Avenue, Indianapolis, IN 46202
 buybelden@gocsc.com

The Cable Company

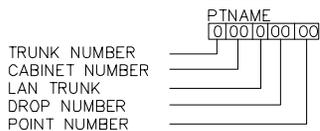
Description	Part Number	Application
ETHERNET 23AWG, CAT6	5652P66CMP1000	Ethernet Network Communication cabling (verify type/color)
24-1p (STR) SHD Cable-Plenum	5200BLN	BLN trunks
24-1p (STR) SDH Cable-Plenum	5200FLN	FLN trunks
24-1.5p (STR) FT-6 Cable-Plenum	5201P67FLN1000	MSTP FLN BACnet trunks
20-2c (Solid) Cable-Plenum	5212-P47KNX1003	KNX Cable for DXR
18-2c (STR) Cable-Plenum	5041SBT	Point/low voltage wiring
18-3c (STR) Cable-Plenum	5043SBT	DXR/TEC actuators, transducers
18-6c (STR) Cable-Plenum	5046P33CMP	Point/low voltage wiring
14-2c (STR) Cable-Plenum	5061SBT	24VAC power trunk/power for devices

TCC Contact: Caitlin/Bart
 800-677-9473
 498 Bonnie Lane, Elk Grove Village, IL 60007
 ilsales@tccwire.com

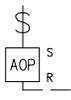
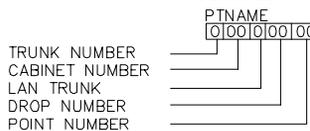
30. CIC shall create and keep an up to date list of DXR Bar Codes in a binder that is accessible to Siemens. CIC will create a list of terminal equipment that is controlled by DXR Controllers. CIC will remove the Bar Code from the DXR Controllers at the time of controls installation for each DXR and affix the Bar Code next to the associated Terminal Equipment Name in the DXR Bar Code Binder. CIC will scan the information and transmit in .pdf format to Siemens upon request.
31. CIC installation verification list. CIC shall create and keep an up to date list of the status of Mechanical System and Terminal Equipment controls installation in a binder that is accessible to Siemens. CIC will update Siemens weekly with the status of controls installation for each Mechanical System and each piece of Terminal Equipment.

CONTROL SYMBOL	CONTROL SYMBOL DESCRIPTION	CONTROL SYMBOL	CONTROL SYMBOL DESCRIPTION	CONTROL SYMBOL	CONTROL SYMBOL DESCRIPTION
AC	AIR COMPRESSOR	HHC	HAND-HELD OPERATOR'S TERMINAL	RCU	REMOTE CONTROL UNIT
AD	AIR DRYER	HL	HIGH LIMIT	RE	RELAY ELECTRIC
ADXR	ACTUATOR DXR	HMI	GAMMA TOUCH PANEL	RP	RELAY PNEUMATIC
AE	ACTUATOR ELECTRIC	HOA	HAND-OFF-AUTO SWITCH	RS	RESTRICTOR
AEM	APOGEE ETHERNET MICROSERVER	HORN	HORN	RV	RELIEF VALVE
AF	AIR FILTER	HPC	HEAT PUMP CONTROLLER	S/W	SOFTWARE
AFS	AIR FLOW STATION	HTD	HIGH TEMPERATURE DETECTOR	SA	SHADE ACTUATOR
AOP	ANALOG OUTPUT, PNEUMATIC	HTE	HUMIDITY TRANSMITTER ELECTRIC	SC	STEP CONTROLLER
AP	ACTUATOR PNEUMATIC	HTP	HUMIDITY TRANSMITTER PNEUMATIC	SCU	STAND ALONE CONTROL UNIT
APS	AUX. POWER SUPPLY	INT	INTERCOM	SD	SMOKE DETECTOR
AT	AUTOMATIC TRAP	KWM	ELECTRIC KILOWATT METER	SE	SWITCH ELECTRIC
ATD	AUTO TANK DRAIN	LA	LIGHT ACTUATOR	SIO	SLX IO MODULES
ATEC	ACTUATOR TEC	LC	LIMIT CONTROLLER (LIMITEM)	SLX	APOGEE SLX CONTROLLER
AZM	AUTOZERO MODULE	LLS	LIQUID LEVEL SWITCH	SPKR	SPEAKER
BCU	BUS COUPLING UNIT	LLT	LIQUID LEVEL TRANS.	SPP	STATIC PRESSURE PROBE
BELL	BELL	LPR	POWER SUPPLY 24VAC/24VDC	SPR	STATIC PRESSURE REGULATOR
BIM	BUS INTERFACE MODULE	LTDE	LOW TEMP. DETECTOR ELECTRIC	SV	SOLENOID VALVE
BOIL	BOILER	LTDP	LOW TEMP. DETECTOR PNEUMATIC	SW	SWITCH PNEUMATIC
BRT	BRIGHTNESS	LUI	LOCAL USER INTERFACE	T	ROOM THERMOSTAT, PNEUMATIC
BRTT	BRIGHTNESS AND TEMPERATURE	MBC	MODULAR BUILDING CONTROLLER	TBC	TERMINAL BOX CONTROLLER
BTN	BUTTON	MDM	MODEM	TC	TEMPERATURE CONTROLLER(S200)
CBL	CABLES	ME	ELECTRONIC ACTUATOR	TCU	TERMINAL CONTROL UNIT
CKV	CHECK VALVE	MEC	MODULAR EQUIPMENT CONTROLLER	TDR	TIME DELAY RELAY
CM	CONSTRUCTION MATERIALS	MG	MAGNEHELIC GAUGE	TE	THERMOSTAT, ELECTRIC
CP	COMPONENT PANEL	MPU	MULTI-POINT UNIT	TEC	TERMINAL EQUIPMENT CONTROLLER
CPU	CENTRAL PROCESSING UNIT	MS	MOTOR STARTER	TH	THERMOMETER
CRT	CATHODE RAY TUBE	OCC	OCCUPANCY	TI	TRUNK INTERFACE
CS	CURRENT SWITCH	OCCB	OCCUPANCY AND BRIGHTNESS	TIE	TRUNK ISOLATOR EXTENDER
CT	CURRENT TRANSDUCER	OBS	OBSOLETE	TIU	TELCOM INTERFACE UNIT
CTTE	CO2 TEMP TRANSMITTER ELEC	ODP	OPERATOR DATA PANEL	TMR	TIMER, TIME CLOCK
CVC	CONSTANT VOLUME CONTROLLER	P	PUMP	TTE	TEMPERATURE TRANSMITTER ELECTRIC
D	DAMPER	PA	PULSE ACCUMULATOR	TTP	TEMPERATURE TRANSMITTER PNEUMATIC
DDC	DUAL DUCT CONTROLLER	PCT	PROGRAMMABLE CLOCK TIMER	TXIO	TX-I/O FAMILY CONTROLLER MODULES
DEM	DEMAND ENERGY MONITOR	PE	PRESSURE ELECTRIC SWITCH	UC	UNITARY CONTROLLER
DP	DEW POINT TRANSMITTER	PL	PILOT LIGHT	UCC	UNIT CONDITIONER CONTROLLER
DPR	DIFFERENTIAL PRESS. REGULATOR	PM	POWER MONITOR	UVC	UNIT VENT CONTROLLER
DPS	DIFFERENTIAL PRESSURE SWITCH	PNL	PANEL	V	VALVE
DPTE	DIFF. PRESS. TRANSMITTER ELEC.	PPM	POINT PICKUP MODULE	V*	VALVE SERVICE PARTS
DPTP	DIFFERENTIAL PRESSURE PNEUMATIC	PRC	PRESSURE REG. CONTROLLER	VA	TEC VALVE ACTUATOR
DPU	DIGITAL POINT UNIT	PRV	PRESSURE REDUCING VALVE	VAC	VARIABLE AIR VOLUME CONTROLLER
DXR	TERMINAL EQUIPMENT CONTROLLER	PS	POSITIONING SWITCH	VB	VIBRATION ISOLATOR
EC	ENTHALPY COMPARITOR	PSE	POSITION SENSOR ELECTRIC	VTE	VELOCITY TRANSMITTER ELECTRICAL
EP	ELECTRO-PNEUMATIC VALVE	PST	PULL STATION	W	WELL
ES	END SWITCH	PT	PITOT TUBE	WST	WEATHER STATION
ET	ENTHALPY TRANSMITTER	PTE	PRESSURE TRANSMITTER ELECTRIC	XDR	TRANSDUCER
EXP	EXPANSION PANEL	PTP	PRESSURE TRANSMITTER PNEUMATIC	XFMR	TRANSFORMER
FAN	FAN	PTR	PRINTER		
FHC	FUME HOOD CONTROLLER	PV	PILOT VALVE		
FM	FLOW MTR. (FLOW METER STATION)	PXCC	PX COMPACT CONTROLLER		
FMS	FIRE MGMT. SYSTEM	PXCM	PXC-MODULAR CONTROLLER		
FS	FLOW SWITCH	PXG3	BACNET ROUTER ETHERNETIP-MS/TP		
FTP	FLOW TRANSMITTER PNEU.	RBC	REMOTE BUILDING CONTROLLER		
G	GAUGE	RC	RECEIVER CONTROLLER		
GD	GAS DETECTOR				
H	HYGROSTATS				
HE	HUMIDIFIER ELECTRIC				

DDC ELECTRICAL POINT



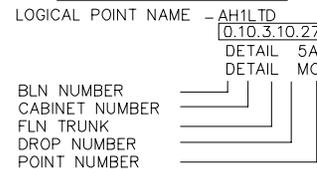
DDC PNEUMATIC POINT



DETAILS

- ELECTRICAL TERMINATION
- PNEUMATIC TERMINATION
- DETAIL XX STANDARD DDC TERMINATION
- NOTE OR REVISION
- DETAIL XX PAGE REFERENCE

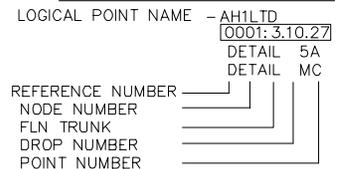
APOGEE: PII - EXAMPLE



← READ AS " SEE PAGE 5A FOR MORE DETAIL "

← DIGITAL INPUT

APOGEE: ETHERNET - EXAMPLE



← READ AS " SEE PAGE 5A FOR MORE DETAIL "

← DIGITAL INPUT

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Legend & Abbreviations

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LEG

Anixter Building Automation Cables

Non-Plenum

SBT Part Number	Description	Print Legend
H-TP20-CM	20AWG,STR,1TP,CM,BLUE JACKET	NORTHFLEX @ H-TP20-CM "DI, DO, AI, AO" (Mfg E#) 20AWG 1P 75°C CM (UL) C(UL)
H-3C20-CM	20AWG,STR,3COND,CM,BLUE JACKET	NORTHFLEX @ H-3C20-CM "TEC V/D" (Mfg E#) 20 AWG 3C 75°C CM (UL) C(UL)
H-TP18-CMR	18AWG,STR,1TP,CMR,BLUE JACKET	NORTHFLEX @ H-TP18-CMR "DI, DO, AI, AO" (Mfg E#) 18AWG 1P 75°C CMR (UL) C(UL)
H-3C18-CMR	18AWG,STR,3COND,CMR,BLUE JACKET	NORTHFLEX @ H-3C18-CMR "TEC V/D" (Mfg E#) 18 AWG 3C 75°C CMR (UL) C(UL)
H-2C14-CL3R	14AWG,STR,2COND,CL3R,DARK BLUE JACKET	H-2C14-CL3R "LV POWER" (Mfg E#) 14 AWG 2C 75°C CL3R (UL) C(UL)
H-B-TSP24LC-CM	BLN24AWG,STR,TSP,LOCAP,CM,ORANGE JACKET	H-B-TSP24LC-CM "BLN" (Mfg E#) 24 AWG 1P 75°C CM (UL) C(UL)
H-F-TSP24LC-CM	FLN24AWG,STR,TSP,LOCAP,CM,ORANGE JACKET W/ BLUE STRIPE	NORTHFLEX @ H-F-TSP24LC-CM "FLN" (Mfg E#) 24 AWG 1P 75°C CM (UL) C(UL)
H-3P24-CMR	24AWG,SOL,3P,CMR,BLUE JACKET	NORTHFLEX @ H-3P24-CMR "TEC STAT" (Mfg E#) 24 AWG 3P 75°C CMR (UL) C(UL)
LON-1PS22-CM	22AWG,STR,1PAIR,OAS,CM,ORANGE JACKET W/ WHITE STRIPE	NORTHFLEX @ LON-1PS22-CM "LON FLN" (Mfg E#) 22AWG 1P 750 C CM (UL) C(UL)
LON-2PS22-CM	22AWG,STR,2PAIR,OAS,CM,ORANGE JACKET W/ WHITE STRIPE	NORTHFLEX @ LON-2PS22-CM "LON FLN" (Mfg E#) 22AWG 2P 750 C CM (UL) C(UL)
E-4TP24CAT5-CM	24AWG,SOL,4TP,CAT5,CM	NORTHFLEX @ E-4TP24CAT5-CM "ETHERNET" (Mfg E#) 24AWG 4P 750 C CM (UL) C(UL)
H-A-1.5TSP24LC-CM	ALN485, 24AWG, STR, TP+1C, OAS, LOCAP, CM	NORTHFLEX @ H-A-1.5TSP24LC-CM "ALN485" 24 AWG 1P+1C 75°C CM (UL) C(UL) (Mfg E#)
H-F-1.5TSP24LC-CM	FLN485, 24AWG, STR, TP+1C, OAS, LOCAP, CM	NORTHFLEX @ H-A-1.5TSP24LC-CM "FLN485" 24 AWG 1P+1C 75°C CM (UL) C(UL) (Mfg E#)

Plenum

SBT Part Number	Description	Print Legend
H-TP20-CMP	20AWG,STR,1TP,CMP,BLUE JACKET	NORTHFLEX @ H-TP20-CMP "DI, DO, AI, AO" (Mfg E#) 20 AWG 2C 75°C CMP (UL) C(UL)
H-3C20-CMP	20AWG,STR,3COND,CMP,BLUE JACKET	NORTHFLEX @ H-3C20-CMP "TEC V/D" (Mfg E#) 20 AWG 3C 75°C CMP (UL) C(UL)
H-TP18-CMP	18AWG,STR,1TP,CMP,BLUE JACKET	NORTHFLEX @ H-TP18-CMP "DI, DO, AI, AO" (Mfg E#) 18 AWG 2C 75°C CMP (UL) C(UL)
H-3C18-CMP	18AWG,STR,3COND,CMP,BLUE JACKET	NORTHFLEX @ H-3C18-CMP "TEC V/D" (Mfg E#) 18 AWG 3C 75°C CMP (UL) C(UL)
H-2C14-CL3P	14AWG,STR,2COND,CL3P,DARK BLUE JACKET	NORTHFLEX @ H-2C14-CL3P "LV POWER" (Mfg E#) 14 AWG 2C 75°C CL3P (UL) C(UL)
H-B-TSP24LC-CMP	BLN24AWG,STR,TSP,LOCAP,CMP,ORANGE JACKET	NORTHFLEX @ H-B-TSP24LC-CMP "BLN" (Mfg E#) 24 AWG TSP 75°C CMP (UL) C(UL)
H-F-TSP24LC-CMP	FLN24AWG,STR,TSP,LOCAP,CMP,ORANGE JACKET W/ BLUE STRIPE	NORTHFLEX @ H-F-TSP24LC-CMP "FLN" (Mfg E#) 24 AWG TSP 75°C CMP (UL) C(UL)
H-3P24-CMP	24AWG,SOL,3PAIR,CMP,BLUE JACKET	NORTHFLEX @ H-3P24-CMP "TEC STAT" (Mfg E#) 24 AWG 3P 75°C CMP (UL) C(UL)
KNX-TSP20LC-CMP	20AWG,SOL,1TSP,CMP,ORNGE/GRN STRIPE	NORTHFLEX @ KNX-TSP20LC-CMP "KNX PL-LINK" 20AWG SOL 1TSP 75° C CM (UL) C(UL) E179333
LON-1P22-CMP	22AWG,STR,1PAIR,CMP,ORANGE JACKET W/ WHITE STRIPE	NORTHFLEX @ LON-1P22-CMP "LON FLN" (Mfg E#) 22AWG 1P 750 C CMP (UL) C(UL)
LON-2P22-CMP	22AWG,STR,2PAIR,CMP,ORANGE JACKET W/ WHITE STRIPE	NORTHFLEX @ LON-2P22-CMP "LON FLN" (Mfg E#) 22AWG 2P 750 C CMP (UL) C(UL)
LON-1PS22-CMP	22AWG,STR,1PAIR,OAS,CMP,ORANGE JACKET W/ WHITE STRIPE	NORTHFLEX @ LON-1PS22-CMP "LON FLN" (Mfg E#) 22AWG 1P 750 C CMP (UL) C(UL)
LON-2PS22-CMP	22AWG,STR,2PAIR,OAS,CMP,ORANGE JACKET W/ WHITE STRIPE	NORTHFLEX @ LON-2PS22-CMP "LON FLN" (Mfg E#) 22AWG 2P 750 C CMP (UL) C(UL)
E-4TP24CAT5-CMP	24AWG,SOL,4TP,CAT5,CMP	NORTHFLEX @ E-4TP24CAT5-CMP "ETHERNET" (Mfg E#) 24AWG 4P 750 C CMP (UL)
H-A-1.5TSP24LC-CMP	ALN485, 24AWG, STR, TP+1C, OAS, LOCAP, CMP	NORTHFLEX @ H-A-1.5TSP24LC-CM "ALN485" 24 AWG 1P+1C 75°C CM (UL) C(UL) (Mfg E#)
H-F-1.5TSP24LC-CMP	FLN485, 24AWG, STR, TP+1C, OAS, LOCAP, CMP	NORTHFLEX @ H-A-1.5TSP24LC-CM "FLN485" 24 AWG 1P+1C 75°C CM (UL) C(UL) (Mfg E#)

Assemblies

Part Number	Description	Print Legend
550-827	CABLE ASSEMBLY TEC TO SSB 3 POS 10 FT	N
550-828	CABLE ASSEMBLY TEC TO SSC 3 POS 10 FT	N

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Anixter Building Auto. Cables

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ABAC

TEC – ELECTRONIC OUTPUT
WIRING TYPE AND GAUGE REQUIREMENTS

TABLE 1A

CIRCUIT TYPE	CLASS	WIRE TYPE	MAX. DISTANCE	CONDUIT SHARING
INPUT POWER	2	CHECK LOCAL CODES	AS REQUIRED	CHECK LOCAL CODES
DIGITAL OUTPUT	2	CHECK LOCAL CODES	150ft (46 m)	CHECK LOCAL CODES
DIGITAL INPUT	2	#18-22 TP #20 AWG TP	150ft (46 m)	CLASS 1 & 2 CHECK LOCAL CODES
ANALOG INPUT	2	#18-22 TP	100ft (30.5 m)	CLASS 2
ANALOG INPUT THERMISTOR	2	#20 TP	100ft (30.5 m)	CLASS 1 & 2 CHECK CODES
ROOM TEMP. SENSOR	2	6-WIRE RJ11	100ft (30.5 m)	CLASS 2
LAN TRUNK ¹	2	#18-22 AWG TSP	4kft (1220 m)	CLASS 2 ONLY

TEC – PNEUMATIC OUTPUT
WIRING TYPE AND GAUGE REQUIREMENTS

TBBLE 1B

CIRCUIT TYPE	CLASS	WIRE TYPE	MAX. DISTANCE	CONDUIT SHARING
POWER TRUNK (LOW VOLTAGE)	2	CHECK LOCAL CODES	AS REQUIRED	CHECK LOCAL CODES
POWER TRUNK (HIGH VOLTAGE)	1	CHECK LOCAL CODES	AS REQUIRED	CHECK LOCAL CODES
DAMPER OUTPUT (LOW VOLTAGE)	2	CHECK LOCAL CODES	AS REQUIRED	CHECK LOCAL CODES
DAMPER OUTPUT (HIGH VOLTAGE)	1	CHECK LOCAL CODES	AS REQUIRED	CHECK LOCAL CODES
DIGITAL INPUT	2	#18-22 TP	100ft (30.5 m)	CLASS 1 & 2 CHECK LOCAL CODES
ANALOG INPUT	2	#18-22 TP	100ft (30.5 m)	CLASS 2
ROOM TEMP. SENSOR	2	6-WIRE RJ11	100ft (30.5 m)	CLASS 2
LAN TRUNK ¹	2	#18-22 AWG TSP	4kft (1220 m)	CLASS 2 ONLY

TABLE 1A & 1B NOTES:

- DISTANCE WILL DEPEND ON TRANSFORMER LOCATION.

TEC POWER SOURCE REQUIREMENTS

TEC TYPE	VOLTAGE	LINE FREQUENCY	MAX. POWER
ELECTRONIC OUTPUT	24 VAC +15% -20%	50 / 60 Hz	5.2 VA TO 43.5 VA ¹
PNEUMATIC OUTPUT (LOW VOLTAGE)	24 VAC +15% -20%	50 / 60 Hz	17 VA PLUS DAMPER VA
PNEUMATIC OUTPUT (HIGH VOLTAGE)	115/230 VAC +10% -15%	50 / 60 Hz	17 VA PLUS DAMPER VA

NOTES:

- VA DEPENDS ON TEC APPLICATION.

DI, AI, AO WIRE SPECIFICATIONS

TABLE 2

SPECIFICATION	WIRE TYPE	
	SHIELDED	UNSHIELDED
CAPACITANCE WIRE TO WIRE	NOT SPECIFIED	NOT SPECIFIED
CAPACITANCE BETWEEN ONE CONDUCTOR WITH OTHER CONDUCTOR CONNECTED TO SHIELD	NOT SPECIFIED	N/A
WIRE LAY	2" MAX.	2" MAX.
AWG	18-22	18-22

LAN TRUNK WIRE

TABLE 3

SPECIFICATION	LENGTH OF TRUNK SECTION	
	4000 FT	10,000 FT
CAPACITANCE WIRE TO WIRE	60pF MAX.	24pF MAX.
CAPACITANCE BETWEEN ONE CONDUCTOR WITH OTHER CONDUCTOR CONNECTED TO SHIELD	100pF MAX.	44pF MAX.
WIRE LAY	2" MAX.	2" MAX.
AWG	24	18 MIN.

TABLE 2 & 3 NOTES:

- OPTIMAL NOISE REDUCTION IS ACHIEVED WITH TIGHTER WIRE LAYS (E.G. 1/2").

GENERAL NOTES:

- COMPLY WITH LOCAL BUILDING CODES.
- SIZE WIRE FOR LOAD, CURRENT, AND VOLTAGE.
- ALL WIRE TO BE APPROVED OR LISTED FOR THE INTENDED APPLICATION BY AGENCIES SUCH AS UL, CSA.
- ALWAYS REFER TO LOCAL CODES FOR CONDUIT SHARING.
- WIRING MUST HAVE INSULATION RATED FOR HIGHEST VOLTAGE CIRCUIT IN CONDUIT.
- PLENUM WIRING MAY BE USED IN PLACE OF ANY LOW VOLTAGE WIRING WITHOUT CHANGES TO LENGTH EXCEPT FOR PMD OR LAN TRUNK. IN CASES WHERE PLENUM WIRE (#18 OR #20 AWG) IS USED FOR PMD OR LAN TRUNK, USE THE REDUCED LENGTHS OF #20 AWG CABLE.
- THE LAN TRUNK MUST BE AN UNINTERRUPTED RUN BETWEEN TEC'S. NO SPLICES ALLOWED.

TEC (ELECTRONIC OUTPUT) DO CONTACT RATING

24 VAC HOT @ 0.5 AMPS

WARNING: DO IS NOT A DRY CONTACT!

TEC (PNEUMATIC OUTPUT) DO CONTACT RATING

DO CONTACT RATING NOT SPECIFIED

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TEC Termination Specification

440P-415703

TTRM

Control Device	Qty	Product Number	Manufacturer	Document Number	Description
Field Mounted Devices					
XFMR	1	TR100VA002	KELE INC	TR100VA002	Xfmr 100VA,120-24V,dual hub,ClassII UL

DEMO:
 REMOVE THE DUCT REHEAT CONTROLS FROM ROOM 108 (TYPICAL OF 3) AND ROOM 113 (TYPICAL OF 2) AND CAP OFF ELECTRIC OR PNEUMATIC SUPPLY LINES.

INSTALLATION:
 EXTEND EXISTING FLN/POWER TRUNK TO PICK UP NEW VAV BOXES. INSTALL 24V TRANSFORMER IF EXISTING POWER TRUNK CANNOT ACCOMMODATE ADDITIONAL CONTROLLERS.

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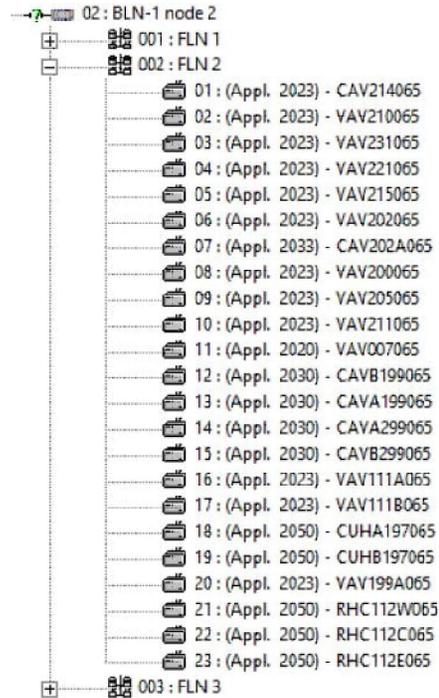
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WLH	WLH		03/25/26	03/24/26
SYSTEM ARCHITECTURE				

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001

INSTALLATION NOTES:

- 1 EXTEND EXISTING PXCM-2 FLN-2 TRUNK FROM THE REHEAT COIL IN ROOM 112E TO PICK UP VAV-108 & VAV-113.
- 2 EXTEND EXISTING POWER TRUNK IF AVAILABLE OR INSTALL NEW 24 TRANSFORMER.
- 3 CIC TO ENSURE EXISTING POWER AND FLN TRUNK WIRING ARE MAINTAINED DURING CONSTRUCTION. COORDINATE ANY FLN MODIFICATIONS WITH SIEMENS PRIOR TO STARTING WORK.



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SYSTEM ARCHITECTURE

440P-415703

002

Control Device	Qty	Product Number	Manufacturer	Document Number	Description	
Field Mounted Devices						
AE	1	2	GDE131.1P	SIEMENS	154 011	ACT NSR PLENUM 24/108L 5Nm
CBL	1	2	588-100B	SIEMENS	N/A	6-WIRE 2-RJ11 RS CABLE 50'PLMN
TEC	1	2	540-100N	SIEMENS	1491014	TERM BOX CTRLR ELEC OUT
TTE	1	2	QAA2280.FWSC	SIEMENS	149820	RTS, TEC/RJ-11, FULL HMI
TTE	2	2	536-811	SIEMENS	149 134	DCT PT TMP, 100K OHM, 4", BRACKET MNT
V						SEE VALVE SUBMITTAL

SEQUENCE OF OPERATION

OCCUPIED MODE:

IF ZONE TEMPERATURE , AS SENSED BY ZONE TEMPERATURE SENSOR (ZN-T), IS WITHIN THE DEADBAND LIMITS OF 70F-74F (ADJ), THE SUPPLY AIR DAMPER (SA-DPR) WILL BE AT MINIMUM COOLING AIRFLOW SETPOINT AS SENSED BY SUPPLY AIR AIRFLOW MEASURING STATION (SA-CFM), AND THE HYDRONIC HEATING CONTROL VALVE (HTG-VLV) IS CLOSED. IF ZONE TEMPERATURE (ZN-T) INCREASES BEYOND THE UPPER DEAD BAND LIMIT, THE SUPPLY AIR DAMPER (SA-DPR) WILL MODULATE FROM MINIMUM COOLING AIRFLOW SETPOINT TO MAXIMUM COOLING AIRFLOW SETPOINT TO SATISFY ZONE TEMPERATURE (ZN-T) SETPOINT OF 72F (ADJ). IF ZONE TEMPERATURE (ZN-T) FALLS BELOW THE LOWER DEADBAND LIMIT, THE SUPPLY AIR DAMPER (SA-DPR) WILL MODULATE FROM MAXIMUM COOLING SETPOINT TO MINIMUM COOLING SETPOINT. IF THE ZONE TEMPERATURE (ZN-T) CONTINUES TO FALL BELOW THE LOWER DEAD BAND LIMIT, THE SUPPLY AIR DAMPER (SA-DPR) WILL BE FIXED AT THE HEATING AIRFLOW SETPOINT AND THE HYDRONIC HEATING CONTROL VALVE (HTG-VLV) WILL MODULATE TO MAINTAIN ZONE TEMPERATURE SETPOINT.

UNOCCUPIED MODE:

THE UNOCCUPIED MODE SEQUENCE OF OPERATION IS THE SAME AS THE OCCUPIED MODE. THE UNOCCUPIED MODE DEADBAND LIMITS WILL BE 55F-85F (ADJ). WHEN ANY TWO VAV TERMINAL UNIT ZONES EXCEED THE UPPER DEAD BAND LIMIT OR FALL BELOW THE LOWER DEAD BAND LIMIT, AS SENSED BY THE ZONE TEMPERATURE SENSOR (ZN-T), THE ASSOCIATED AIR HANDLING UNIT WILL BE ENABLED AND OPERATE IN UNOCCUPIED MODE.

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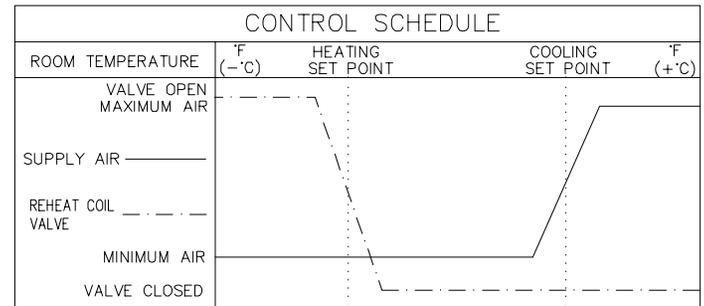
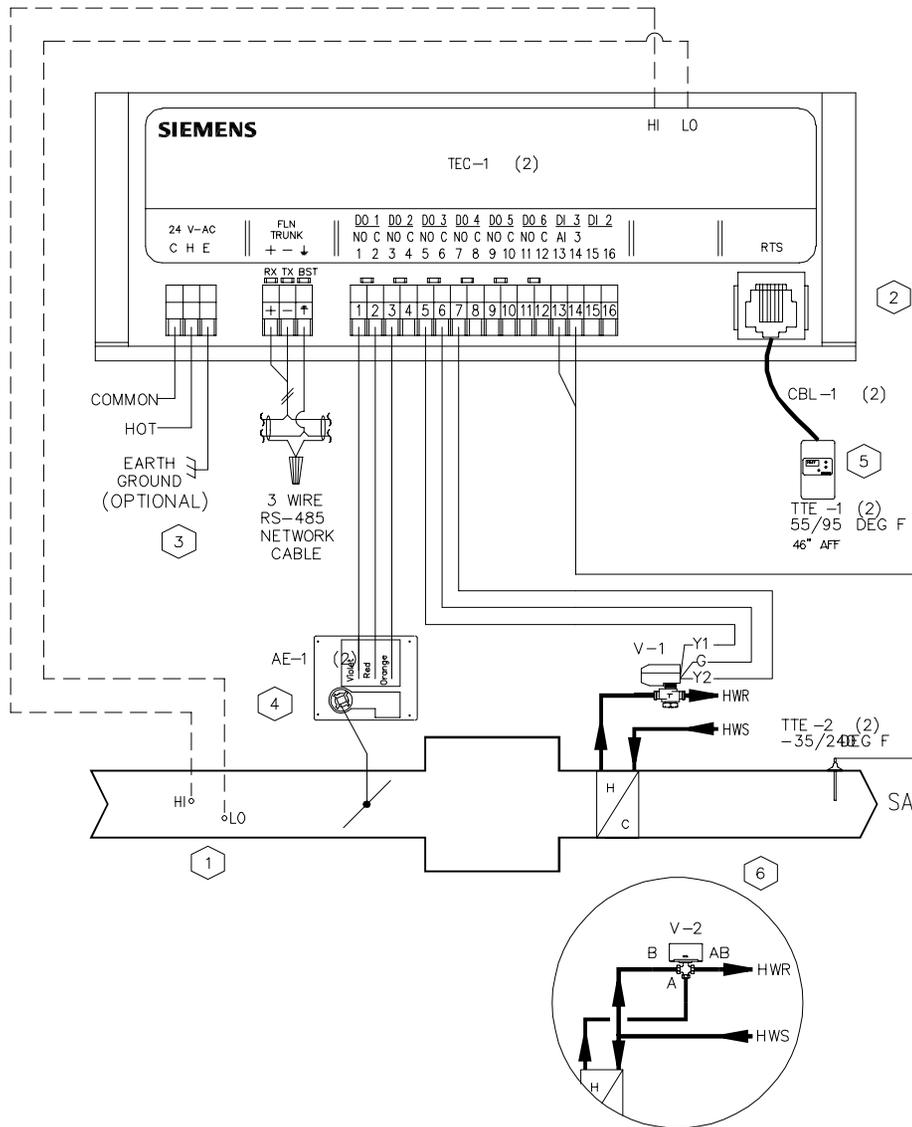
VAV Box w/HWRht - 2023

440P-415703

003

INSTALLATION NOTES:

- 1 VAV BOX INSTALLED BY MECHANICAL CONTRACTOR WITH 3 TO 5 STRAIGHT DUCT DIAMETERS UPSTREAM OF BOX TO PROVIDE PROPER FLOW SENSING
- 2 TEC-1 TO BE MOUNTED IN MANUFACTURER SUPPLIED CONTROLLER ENCLOSURE
- 3 REFER TO BUILDING POWER TRUNK DRAWING FOR 24 VAC POWER
- 4 MOUNT ACTUATOR WITH DAMPER IN FULL OPEN POSITION. VERIFY TEC-1 AND ACTUATOR REQUIREMENT WITH THE BOX MANUFACTURER
- 5 LOCATE AS SHOWN ON FLOOR PLANS/CONTRACT DOCUMENTS
- 6 3-WAY VALVE PIPING DETAIL. FIELD VERIFY LOCATION OF 3V VALVES.



DEVICE	SIEMENS		MANUFACTURER	DIVISION 16	DIVISION 15
	FITTER	ELEC.			
TTE-1,2		M,W			
AE-1			M,W		
TEC-1			M,W,P		
V-1		W			M
LAN TRUNK		W			
POWER (24VAC)		W			

M-MOUNTED
W-WIRED
P-PIPED

004 VAV WITH REHEAT COIL (#2023)
TYPICAL OF (2)
VAV-108 & VAV-113

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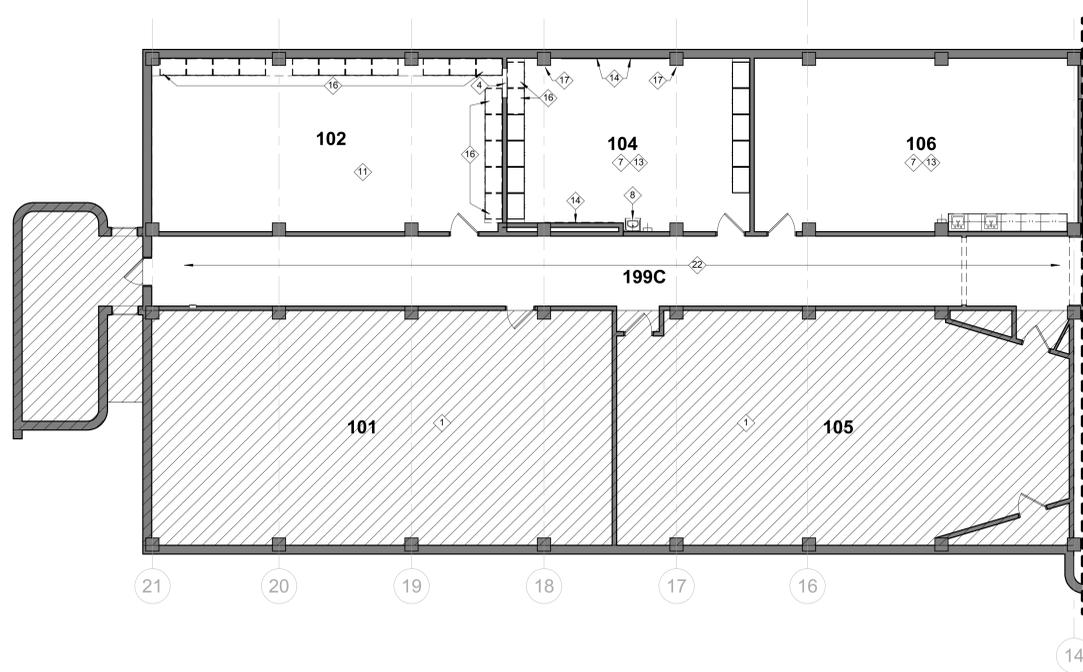
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GENERAL DEMOLITION NOTES

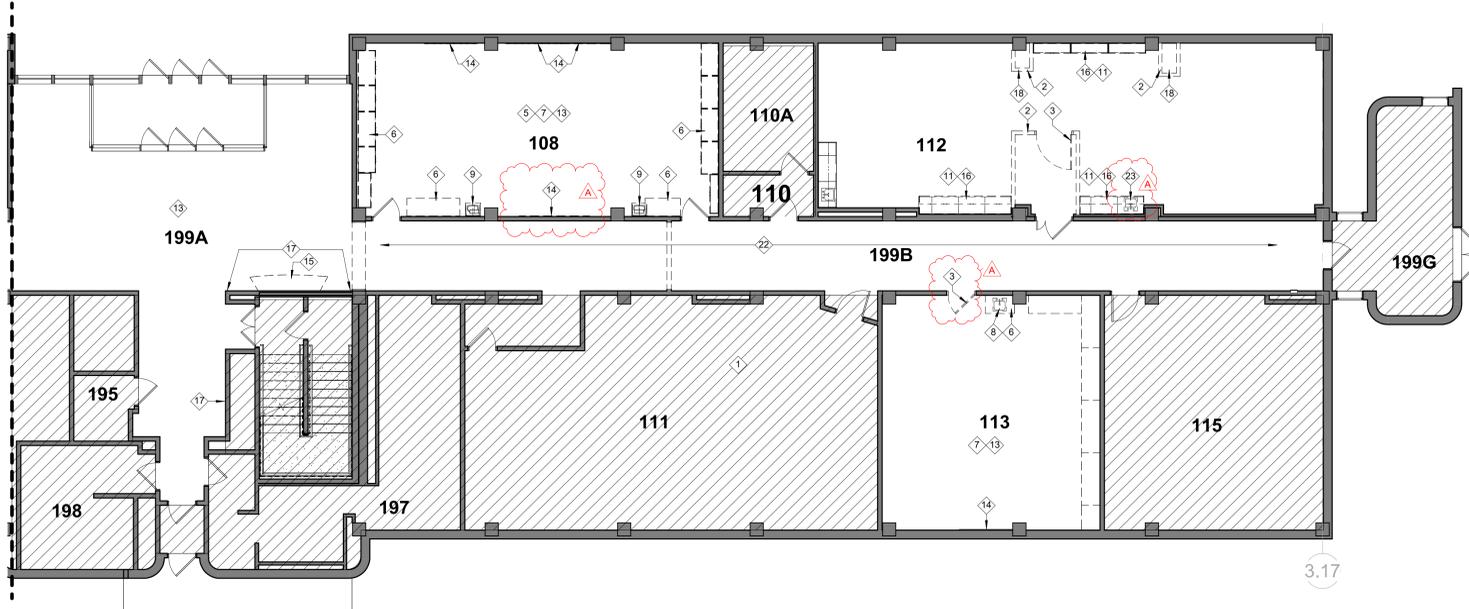
- A. REFER TO G001 FOR MATERIALS AND SYMBOLS LEGENDS.
- B. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY PARTITIONS AND TEMPORARY DOORS AS DEEMED NECESSARY BY THE ARCHITECT, ENGINEER AND OWNER TO CONTROL DUST, DEBRIS AND ACCESS TO THE PROJECT SITE. THEY SHALL BE WELL MAINTAINED AND ANY DAMAGE REPAIRED IMMEDIATELY.
- C. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK IN OCCUPIED SPACES AND SHALL NOTIFY THE OWNER TWO WEEKS PRIOR TO COMMENCING WORK. SUCH SPACES ARE TO REMAIN OCCUPIED DURING DEMOLITION AND ALL WORK SHALL BE PERFORMED IN SUCH A MANNER TO MINIMIZE DISRUPTIONS TO OCCUPANTS. PROTECT EXISTING FLOOR FINISHES FROM CONSTRUCTION TRAFFIC THROUGH OCCUPIED AREAS. EXISTING WALL, FLOOR AND CEILING FINISHES TO REMAIN SHALL BE PROTECTED AND ANY DAMAGE RESULTING FROM DEMOLITION WORK SHALL BE REPAIRED.
- D. WHEN DEMOLITION CAUSES DAMAGE TO FLOOR, WALL OR CEILING SURFACES THAT WILL REMAIN EXPOSED IN THE FINISHED WORK, SUCH DAMAGE SHALL BE REPAIRED AS REQUIRED TO RECEIVE NEW FINISHES.
- E. THE CONTRACTOR SHALL COVER AND PROTECT OWNER'S EQUIPMENT WHICH CANNOT BE REMOVED FROM THE PROJECT AREA.
- F. ALL EQUIPMENT REMOVED FROM PROJECT AREA SHALL BE RETURNED TO THE OWNER, UNLESS DIRECTED OTHERWISE BY OWNER. NOTES ON DEMOLITION PLAN FOR 'REMOVAL' SHALL NOT BE CONSTRUED AS A DIRECTIVE TO DISPOSE OF EQUIPMENT.
- G. CONTRACTOR SHALL COORDINATE ALL DEMOLITION WITH ANY PHASING REQUIRED TO COMPLETE THE WORK.
- H. MAKE ALL DEMOLITION CLEAN AND COMPLETE AND IN A MANNER SUITABLE TO ACCEPT NEW FINISHES AND/OR SURFACES.
- I. REMOVE ALL EXISTING WALL MOUNTED ITEMS WITHIN THE PROJECT LIMIT AREA WHICH ARE NOT NOTED TO REMAIN. THE CONTRACTOR SHALL DISPOSE OF THESE ITEMS AFTER INSPECTION BY THE OWNER FOR FUTURE RE-USE. IF ITEMS ARE REMOVED FROM WALLS THAT ARE TO REMAIN, THE CONTRACTOR SHALL PATCH WALLS AS REQUIRED TO RECEIVE NEW FINISHES AND/OR SURFACES.
- J. DEMOLITION FOR BUILDING SERVICES AND UTILITIES SHALL BE PERFORMED BY THE TRADE RESPONSIBLE FOR THAT UTILITY. FOR EXAMPLE, PLUMBING FIXTURES SHALL BE DEMOLISHED BY THE MECHANICAL CONTRACTOR. OPENINGS FOR DEMOLISHED UTILITIES SHALL BE FILLED BY TRADE RESPONSIBLE FOR PIPING, DUCT OR CONDUIT DEMOLITION. OPENINGS THROUGH FIRE-RATED CONSTRUCTION SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION AND/OR BE FIRESTOPPED.
- K. THE INTENT OF THE DEMOLITION NOTES IS TO PROVIDE A GENERAL OUTLINE FOR THE CONTRACTOR OF ITEMS TO BE REMOVED TO ALLOW FOR THE NEW CONSTRUCTION AS OUTLINED ELSEWHERE IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND REMOVAL OF ITEMS FOR NEW CONSTRUCTION SHOWN OR NOT SHOWN ON DEMOLITION PLANS AS MAY BE REQUIRED.
- L. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING AND REPAIRING DUE TO DEMOLITION AND/OR REMOVAL OF EQUIPMENT TO CREATE A FLUSH, SMOOTH SURFACE PROPERLY PREPARED TO RECEIVE NEW FINISHES AS INDICATED. CONTRACTOR SHALL SOAP IN NEW CMU AT HOLES AND VOIDS LARGER THAN 2" DIAM TO MATCH EXISTING ADJACENT AREAS AND PATTERNS.
- M. REFER TO MECHANICAL AND/OR ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR SPECIFIC REQUIREMENTS PERTAINING TO THE REMOVAL, RELOCATION AND/OR MODIFICATION OF ITEMS RELATED TO EXISTING MECHANICAL AND ELECTRICAL SYSTEMS.
- N. SHOULD THE CONTRACTOR ENCOUNTER ANY MATERIALS DURING SELECTIVE DEMOLITION AND NEW WORK WHICH ARE SUSPECTED BY THE CONTRACTOR TO BE OF AN UNKNOWN OR QUESTIONABLE COMPOSITION WITH RESPECT TO CONTAINING CONTAMINANTS WHICH MAY BE HAZARDOUS TO HUMAN HEALTH, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF SUCH FINDINGS.

DEMOLITION KEYNOTES

- 1 AREA NOT IN SCOPE. REFER TO OTHER DISCIPLINES FOR SCOPE AREA.
- 2 REMOVE WALLS COMPLETE WHERE INDICATED OR SHOWN.
- 3 REMOVE DOOR AND FRAME COMPLETE. PREP FOR WALL INFILL WHERE APPLICABLE.
- 4 REMOVE WALL AS REQUIRED FOR NEW OPENING.
- 5 REMOVE EXISTING CEILING. REFER TO DEMO RCP FOR SCOPE.
- 6 REMOVE CASEWORK AND ASSOCIATED COMPONENTS. COMPLETE. PATCH AND PAINT TO MATCH EXISTING ADJACENT WALL.
- 7 REMOVE EXISTING FLOOR FINISHES AND BASE. CLEAN AND PREPARE SLAB TO RECEIVE NEW FLOOR FINISHES. SEE FINISH SCHEDULE.
- 8 REMOVE EXISTING SINK (AND CASEWORK) COMPLETE. CAP PLUMBING. PATCH AND PAINT TO MATCH EXISTING ADJACENT WALL.
- 9 REMOVE EXISTING SINK COMPLETE. PREPARE AREA FOR NEW FIXTURES.
- 10 REMOVE CEILING AND FIXTURES IN ITS ENTIRETY. PREPARE AREA FOR NEW WORK.
- 11 PATCH AND REPAIR FLOORING WHERE CASEWORK IS REMOVED. MATCH EXISTING.
- 12 EXISTING CEILING TO REMAIN. REPLACE TILES WHERE DAMAGED OR DISCOLORED.
- 13 OWNER TO REMOVE EXISTING LOOSE FURNITURE (WORKSTATIONS, DESKS, CHAIRS, TEACHING STATIONS, ETC.).
- 14 REMOVE WHITEBOARD AND SALVAGE FOR REINSTALLATION.
- 15 REMOVE STOOP FOR RELOCATION OUTDOORS.
- 16 REMOVE CASEWORK AND ASSOCIATED COMPONENTS. COMPLETE. SALVAGE FOR REINSTALLATION. COORDINATE WITH ARCHITECT AND OWNER.
- 17 REMOVE WALL MOUNTED ITEMS AND SALVAGE TO OWNER.
- 18 REMOVE MOVABLE WALL PARTITION AND ALL ASSOCIATED PARTS. SALVAGE TO OWNER.
- 19 MODIFY CEILING AS NEEDED FOR NEW WALLS. REFER TO NEW WORK.
- 20 ALT #02 - ADD SPRINKLER HEADS TO THIS ROOM.
- 21 POWDER COAT EXISTING LUMINOUS CEILING AND FRAMING SYSTEM TO MATCH 3RD FLOOR. REPLACE LENSES WITH 24" X 24" X 1/4" ACRYLIC LENSES (ARCYLITE SATIN). WHITE WOOD RP. PROVIDE NEW LED LIGHTING.
- 22 ALT #02 - REMOVE EXISTING FLOOR FINISHES AND BASE. CLEAN AND PREPARE SLAB TO RECEIVE NEW FLOOR FINISHES. SEE FINISH SCHEDULE.
- 23 SALVAGE SINK AND SINK CASEWORK FOR REUSE. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.



2 FIRST FLOOR - DEMOLITION PLAN - AREA A
1/8" = 1'-0"



1 FIRST FLOOR - DEMOLITION PLAN - AREA B
1/8" = 1'-0"



KEY PLAN

BID DOCUMENTS



No.	Description	Date
A	ADDENDUM 01	25 MAR 2026

CLIENT PROJ. #: IU20250150
PROJECT #: 25-042
ISSUE DATE: 03/03/2026
DRW: JM | CHK: CWL

DEMOLITION PLAN - FIRST FLOOR BL065

A091

GENERAL DIMENSION NOTES

- A. REFER TO G001 FOR MATERIALS AND SYMBOLS LEGENDS.
- B. DIMENSIONS TO EXISTING CONSTRUCTION ARE TO FINISH SURFACE. DIMENSIONS TO NEW CONSTRUCTION ARE TO FACE OF STUD, STRUCTURAL CENTERLINE, OR FACE OF CONCRETE OR MASONRY CONSTRUCTION UNLESS NOTED OTHERWISE. FIELD VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO STARTING WORK AND NOTIFY ARCHITECT IMMEDIATELY IF DISCREPANCIES ARE FOUND BETWEEN CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS.
- C. LOCATE INSIDE FACE OF DOOR FRAME JAMBS 6 INCHES FROM FINISH FACE OF ADJACENT WALL UNLESS NOTED OTHERWISE.
- D. DO NOT SCALE DRAWINGS. REFER DIMENSION QUESTIONS TO ARCHITECT FOR INTERPRETATION.
- E. REFER TO ENLARGED PLANS FOR DIMENSIONS NOT SHOWN ON 1/8" PLANS.
- F. REFER TO LIFE SAFETY PLAN DRAWINGS AND CODE SUMMARY FOR FIRE-RATED FLOOR, WALL, CEILING AND ROOF LOCATIONS. INSTALL FIRESTOPPING AT PENETRATIONS IN RATED CONSTRUCTION AND AT TOPS OF RATED WALLS.
- G. PROVIDE CONTROL JOINTS (C.J.) IN GYPSUM BOARD WALL CONSTRUCTION AS INDICATED. WHERE NOT SHOWN, PROVIDE MAXIMUM SPACING BETWEEN JOINTS OF 30'-0". VERIFY FINAL CONTROL JOINT LOCATIONS, WHETHER OR NOT INDICATED ON THE DRAWINGS, WITH ARCHITECT PRIOR TO STARTING WORK.
- H. PROVIDE WATER-RESISTANT GYPSUM BOARD ON WALLS WITH OPERABLE PLUMBING FIXTURES AND WITHIN 4'-0" OF DRINKING FOUNTAINS OR WATER COOLERS.

GENERAL ARCH. NOTES

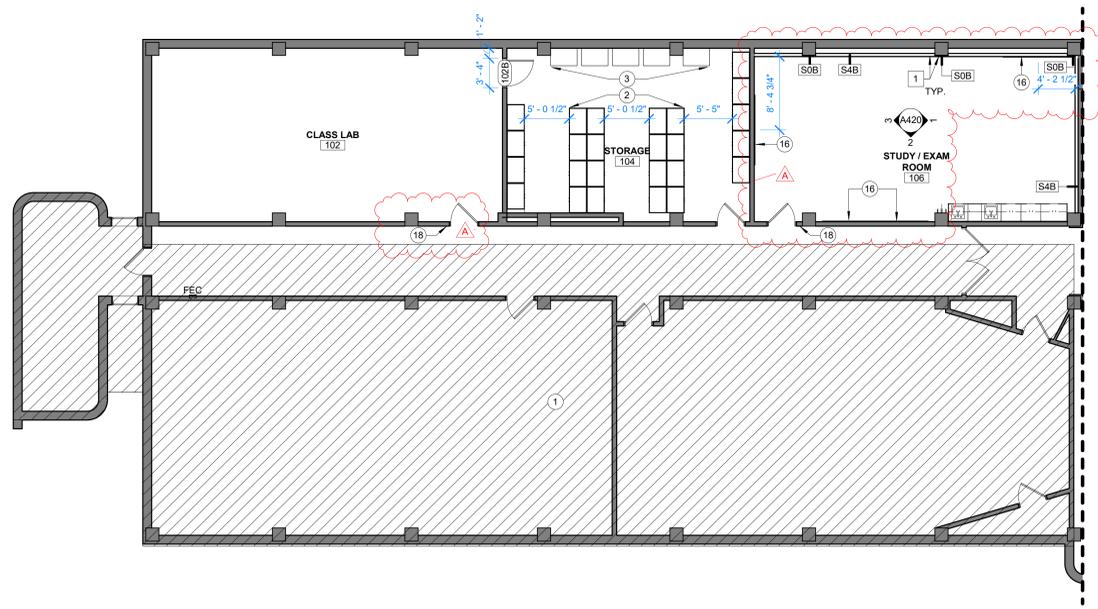
- A. REFER TO G001 FOR MATERIALS AND SYMBOLS LEGENDS.
- B. COORDINATE EQUIPMENT WORK WITH MANUFACTURERS AND SUPPLIERS TO INSURE PROPER ROUGH-IN CLEARANCES FOR INSTALLATION, USE AND MAINTENANCE. NOTIFY ARCHITECT IF CLEARANCES FOR SELECTED EQUIPMENT DO NOT HAVE THE MINIMUM REQUIRED CLEARANCES.
- C. VERIFY MOUNTING HEIGHTS OF ACCESSORIES, EQUIPMENT, DOOR HARDWARE, CASEWORK, ETC., AND PROVIDE SOLID BLOCKING BEHIND ITEMS REQUIRING ANCHORAGE. PROVIDE FIRE TREATED WOOD BLOCKING OR METAL STRIPS BETWEEN FRAMING MEMBERS AS REQUIRED TO SUPPORT WEIGHT AND USE OF ITEMS TO BE SUPPORTED. WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT ITEMS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS. COORDINATE LOCATIONS WITH MANUFACTURER OR SUPPLIER AND REFER MOUNTING HEIGHT QUESTIONS TO ARCHITECT FOR INTERPRETATION.

DIMENSION PLAN KEYNOTES 1

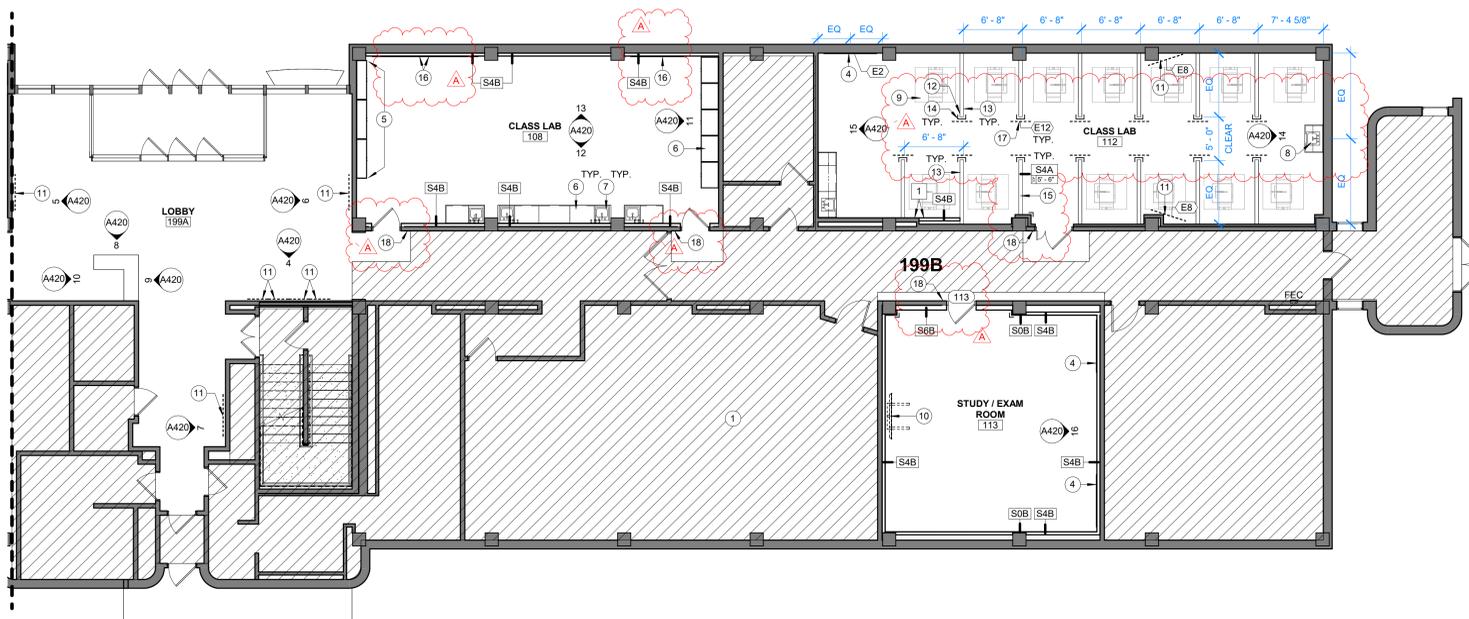
- 1 ALIGN WITH ADJACENT WALLS/ EXISTING WALLS. WHERE APPLICABLE AT INFILL LOCATIONS, MAKE SMOOTH AND INFILL WALL WITH A SIMILAR SIZE AND TYPE OF CONSTRUCTION
- 2 NOT USED

ARCH PLAN KEYNOTES 1

- 1 AREA NOT IN SCOPE.
- 2 RELOCATED CABINETS FROM ROOM 102, THESE ROWS.
- 3 EQUIPMENT CART BY OWNER, TYP.
- 4 WALL MOUNTED MARKERBOARD, REFER TO INT. ELEVATIONS
- 5 RELOCATED CABINETS FROM ROOM 112
- 6 NEW CASEWORK, REFER TO INT. ELEVATIONS
- 7 NEW SINK IN CASEWORK, REFER TO INT. ELEVATIONS AND PLUMBING DWGS
- 8 RELOCATED SINK AND CASEWORK FROM THIS ROOM. REFER TO INT. ELEVATIONS AND PLUMBING DWGS
- 9 EQUIPMENT BY OWNER, TYP.
- 10 RELOCATED MOBILE TV CART FROM ROOM 202
- 11 CEILING MOUNTED TV MONITOR
- 12 CAMERA LOCATION. PROVIDE BLOCKING AS NECESSARY; COORDINATE LOCATION WITH OWNER.
- 13 PROVIDE IN-WALL BLOCKING FOR FOLDING MINI-DESK. BOD. CARSTENS MINI WALL-MOUNTED FOLDING DESK, MINI WALLADESK - DRIFTWOOD LAMINATE (6410-03).
- 14 CORNER GUARD PER SPECIFICATIONS (SS. 4' HIGH).
- 15 BRACE PARTIAL HEIGHT WALLS BOTH AT PERPENDICULAR WALL AND WITH TWO CLARK DETRICH PONY WALL ANCHORS AT THE UNSUPPORTED END AND MIDSPAN. TOP OF WALL TO HAVE A BOX HEADER FOR ADDITIONAL SUPPORT, TYP.
- 16 EXISTING WALL MOUNTED MARKERBOARD TO BE REUSED FROM SALVAGE; REFER TO INT. ELEVATIONS FOR MORE INFORMATION.
- 17 WALL MOUNTED TV MONITOR.
- 18 INSTALL TYPE 'B' ROOM SIGN PER SPECIFICATION.



2 FIRST FLOOR - ARCHITECTURAL PLAN - AREA A
1/8" = 1'-0"



1 FIRST FLOOR - ARCHITECTURAL PLAN - AREA B
1/8" = 1'-0"



KEY PLAN

BID DOCUMENTS



No.	Description	Date
A	ADDENDUM 01	25 MAR 2020

CLIENT PROJ. #: IU20250150
PROJECT #: 25-042
ISSUE DATE: 03/03/2026
DRW: Author | CHK: Checker

DIMENSION AND
ARCHITECTURAL PLAN
- FIRST FLOOR BL065

A121

GENERAL NOTES: R. CEILING

- A. REFER TO G001 FOR MATERIALS AND SYMBOLS LEGENDS.
- B. REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
- C. GYPSUM BOARD CEILINGS AND BULKHEADS ARE TO HAVE A LEVEL 4 FINISH, U.N.O. REFER TO FINISH DRAWINGS FOR PAINT COLOR.
- D. EXPOSED CUT ENDS OF TEGULAR EDGE TILE SHALL BE PAINTED TO MATCH TILE IF TILE CORE IS A DIFFERENT COLOR.
- E. ACOUSTICAL CEILING TILE GRID TO BE 15/16", WHITE U.N.O.
- F. ALL CEILING GRIDS TO BE CENTERED IN ROOM, IN EACH DIRECTION.
- G. RETURN GRILLS SHOWN ON PLANS THAT ARE OPEN TO A PLENUM SHALL HAVE DUCT BOARD DOUBLE 90 DEGREE BOOTS FOR NOISE TRANSFER REDUCTION, UNLESS SPECIFICALLY NOTED OTHERWISE BY MECHANICAL DRAWINGS.
- H. PENETRATIONS IN ACOUSTICAL CEILING SYSTEMS SHALL BE CENTERED WITHIN INDIVIDUAL CEILING TILES, E.G. SPRINKLER HEADS, SPEAKERS, ETC.
- I. PROVIDE ACOUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES, IN ROOMS WITH AN EXTERIOR ENTRANCE DOOR, PROVIDE HOLD-DOWN CLIPS WITHIN A 10' RADIUS OF DOORWAY.
- J. REFER TO ELECTRICAL DRAWINGS FOR CEILING MOUNTED LIGHT FIXTURE TYPES AND QUANTITIES.
- K. REFER TO MECHANICAL DRAWINGS FOR CEILING MOUNTED DIFFUSERS, GRILL TYPES, AND QUANTITIES.
- L. LIGHT FIXTURES AND MECHANICAL DIFFUSERS AND GRILLS ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- M. REFER TO FIRE PROTECTION DRAWINGS FOR SPRINKLER HEAD TYPES AND QUANTITIES. HEADS HAVE BEEN INTENTIONALLY OMITTED FROM REFLECTED CEILING PLANS FOR CLARITY.
- N. CONTRACTOR TO COORDINATE REFLECTED CEILING PLANS WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES. CONTRACTOR SHALL PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
- O. REFER TO DIMENSION PLAN FOR WALL ASSEMBLIES EXTENDING TO UNDERSIDE OF DECK ABOVE.
- P. GYPSUM CEILING BOARD SHALL BE USED AT ALL HORIZONTAL APPLICATIONS OF GYPSUM BOARD.
- Q. PAINTING CONTRACTOR SHALL LABEL, ABOVE CEILING, ALL FIRE RATED WALL CONSTRUCTION AND SMOKE BARRIER WALL CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION. WHERE NO SPECIFICATION EXISTS, STENCIL WALL RATING EVERY 20' IN NUMBERS AND LETTERS AT LEAST 6" TALL. USE RED PAINT. REFER TO G010 FOR RATED ASSEMBLY LOCATIONS.

CEILING PLAN KEYNOTES 1

- 1. AREA NOT IN SCOPE.
- 2. ALTERNATE #02 - ADD SPRINKLER HEADS TO THIS ROOM.
- 3. RECESSED PROJECTION SCREEN, REFER TO EQUIPMENT SCHEDULE AND ELEVATIONS FOR MORE INFORMATION.
- 4. DASHED LINE INDICATES NEW CEILING LOCATION.
- 5. POWDER COAT EXISTING LUMINOUS CEILING AND FRAMING SYSTEM TO MATCH THIRD FLOOR FIXTURE, REPLACE LENSES WITH 24" X 24" X 1/4" ACRYLIC LENSES (ARCYLITE SATINICE - WHITE WD008 DF) PROVIDE NEW LED LIGHTING.
- 6. MODIFY CEILING GRID FOR NEW WALL.
- 7. LIGHT FIXTURE: REFER TO ELECTRICAL PLANS FOR MORE INFORMATION.
- 8. CEILING MOUNT DISPLAY MONITOR, PROVIDE BLOCKING AS REQ. REFER TO ELECTRICAL PLANS FOR POWER DATA.
- 9. INFILL CEILING TO MATCH EXISTING. REFER TO DEMOLITION PLANS FOR MORE INFORMATION.
- 10. EXISTING BULKHEAD, PAINT CEILING FLAT WHITE AND PROVIDE A LEVEL 4 FINISH.

CEILING TYPE LEGEND

- C1 TYPE: 24"x24"x5/8" WHITE ACOUSTICAL PANEL CEILING WITH TEGULAR EDGE
GRID: WHITE 15/16" GRID AND SUSPENSION SYSTEM
MFG: USG
STYLE: RADAR CLIMAPLUS (OR APPROVED EQUAL)
- C2 TYPE: 24"x24"x1/2" WOOD PANEL TILE WITH SQUARE GRILLE TEGULAR EDGE
BLACK INFILL PANEL
GRID: BLACK 9/16" GRID AND SUSPENSION SYSTEM
MFG: ARMSTRONG
STYLE: WOODWORKS GRILLE TEGULAR, NATURAL WALNUT
- C3 EXISTING ACOUSTICAL CEILING TO REMAIN. REPLACE DAMAGED TILES AS NEEDED.

LIGHT FIXTURE LEGEND

- L1 TYPE: RECESSED LINEAR
MFG: BASO
STYLE: PANO 2 GRILLE CLASSIC, 3000K, BLACK



KEY PLAN

BID DOCUMENTS



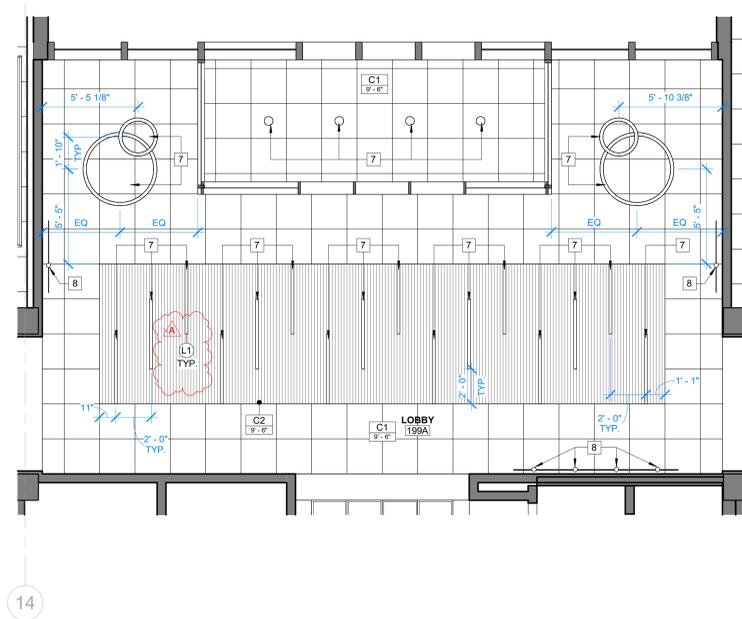
Christopher W. Hester

No.	Description	Date
A	ADDENDUM 01	25 MAR 2026

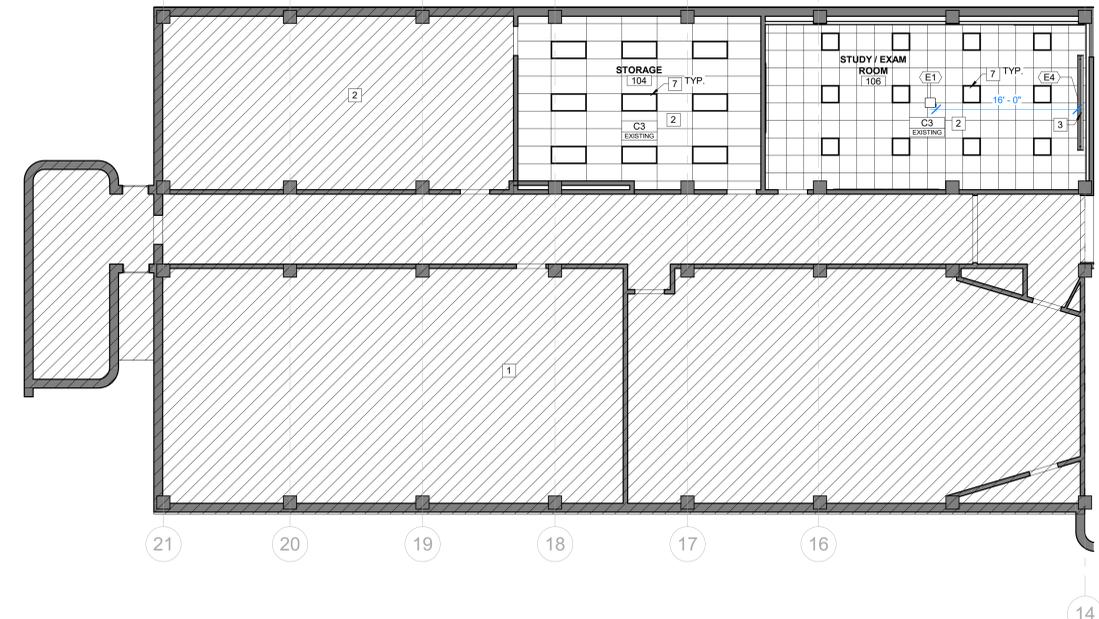
CLIENT PROJ. #: IU20250150
PROJECT #: 25-042
ISSUE DATE: 03/03/2026
DRW: CEKP | CHK: KMM

REFLECTED CEILING PLAN - FIRST FLOOR BL065

A131



3 FIRST FLOOR - REFLECTED CEILING PLAN - AREA B ENLARGED
1/4" = 1'-0"



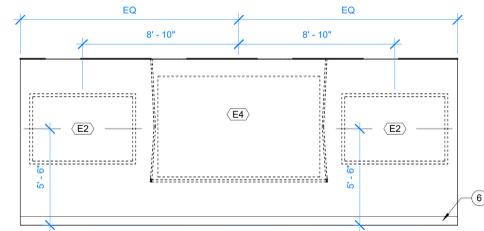
2 FIRST FLOOR - REFLECTED CEILING PLAN - AREA A
1/8" = 1'-0"



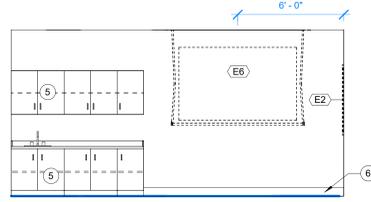
1 FIRST FLOOR - REFLECTED CEILING PLAN - AREA B
1/8" = 1'-0"

EQUIPMENT SCHEDULE

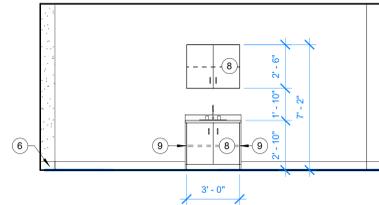
MARK	NAME	BASIS OF DESIGN	REMARKS	FURN / INSTL
E1	PROJECTOR			O.F.C.I.
E2	48"x72" MARKERBOARD	CLARUS IU CUSTOM	PROVIDE BLOCKING IN WALL AS REQUIRED	C.F.C.I.
E4	133" DIAGONAL PROJECTION SCREEN	Da-Lite Screen Company	CEILING MOUNTED	C.F.C.I.
E5	65" FLATSCREEN TV	DRAPER "ACCESS V" XT1000VB, MATTE WHITE, 140109QU 54"x96"	PROVIDE BLOCKING IN WALL AS REQUIRED, COORDINATE WITH MONITOR SIZE/MOUNT	O.F.C.I.
E6	110" DIAGONAL PROJECTION SCREEN	Da-Lite Screen Company	CEILING MOUNTED	C.F.C.I.
E7	PAPER TOWEL DISPENSER			C.F.C.I.
E8	55" FLATSCREEN TV (HORIZONTAL INSTALLATION)	DRAPER "ACCESS V" XT1000VB, MATTE WHITE, 140030QU, 65"x116"	PROVIDE BLOCKING IN WALL AS REQUIRED, COORDINATE WITH MONITOR SIZE/MOUNT	O.F.C.I.
E9	55" FLATSCREEN TV (VERTICAL INSTALLATION)		PROVIDE BLOCKING IN WALL AS REQUIRED, COORDINATE WITH MONITOR SIZE/MOUNT	O.F.C.I.
E10	48"x72" MARKERBOARD		EXISTING TO BE RELOCATED, PROVIDE BLOCKING IN WALL AS REQUIRED	O.F.C.I.
E11	48"x96" MARKERBOARD		EXISTING TO BE RELOCATED, PROVIDE BLOCKING IN WALL AS REQUIRED	C.F.C.I.
E12	22" LED MONITOR	M&S TECHNOLOGIES SMART SYSTEM 2 20/20	PROVIDE BLOCKING IN WALL AS REQUIRED, COORDINATE WITH MONITOR SIZE/MOUNT. COORDINATE MOUNTING HEIGHT WITH OWNER PER DEPARTMENT REQUIREMENTS.	O.F.C.I.



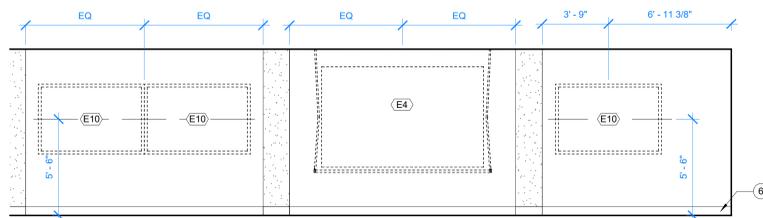
16 INT ELEV. 113 - SCREEN WALL
1/4" = 1'-0"



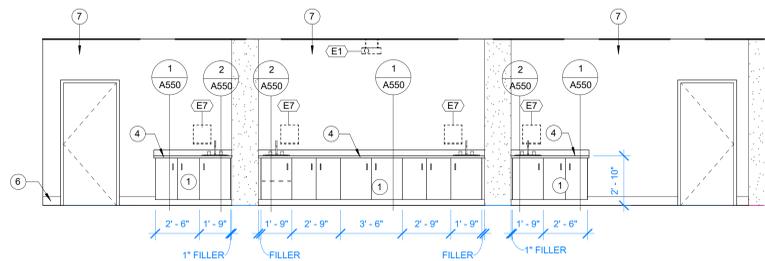
15 INT ELEV. 112 - SCREEN WALL
1/4" = 1'-0"



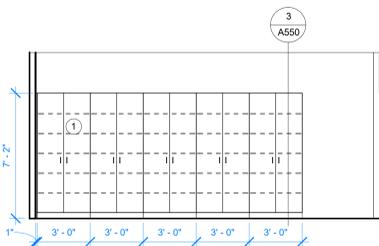
14 INT ELEV. 112 - EAST CASEWORK
1/4" = 1'-0"



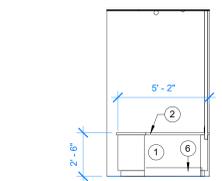
13 INT ELEV. 108 - SCREEN WALL
1/4" = 1'-0"



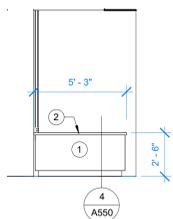
12 INT ELEV. 108 - SOUTH CASEWORK
1/4" = 1'-0"



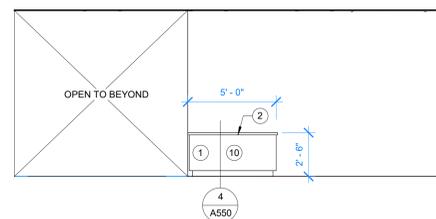
11 INT ELEV. 108 - EAST CASEWORK
1/4" = 1'-0"



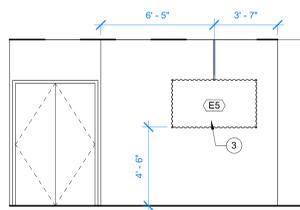
10 INT ELEV. 199A LOBBY - DESK SIDE
1/4" = 1'-0"



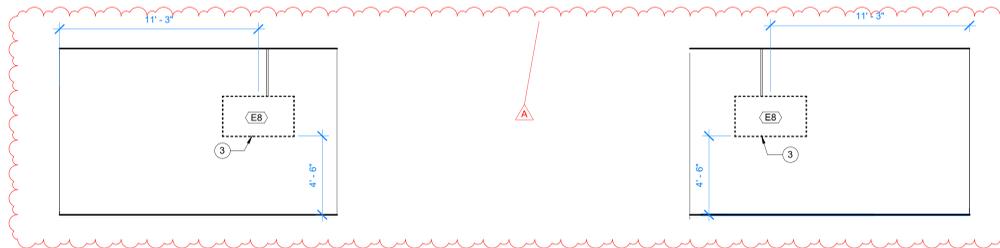
9 INT ELEV. 199A LOBBY - DESK RETURN
1/4" = 1'-0"



8 INT ELEV. 199A LOBBY - DESK FRONT
1/4" = 1'-0"



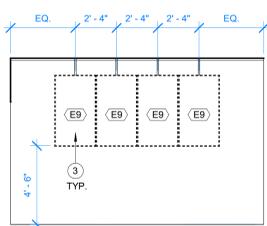
7 INT ELEV. 199A ELEVATOR LOBBY - MONITOR
1/4" = 1'-0"



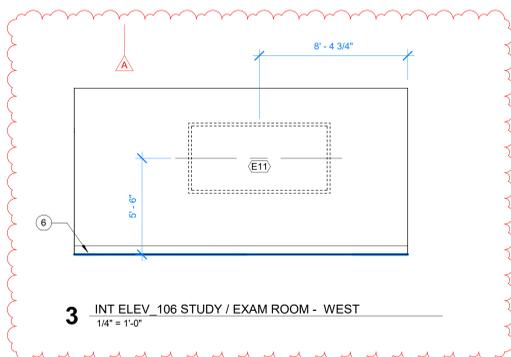
6 INT ELEV. 199A LOBBY - DISPLAY BOARD - EAST
1/4" = 1'-0"



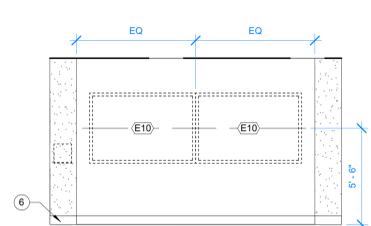
5 INT ELEV. 199A LOBBY - DISPLAY BOARD - WEST
1/4" = 1'-0"



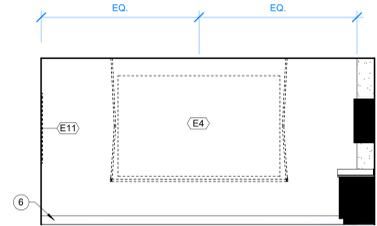
4 INT ELEV. LOBBY - DONOR WALL
1/4" = 1'-0"



3 INT ELEV. 106 STUDY / EXAM ROOM - WEST
1/4" = 1'-0"



2 INT ELEV. 106 STUDY/EXAM ROOM - SOUTH
1/4" = 1'-0"



1 INT ELEV. 106 CLASSROOM - SCREEN WALL
1/4" = 1'-0"

INT. ELEVATION GEN. NOTES

- REFER TO MEP DRAWINGS TO COORDINATE CONNECTIONS.
- ALL DIMENSIONS ARE TAKEN TO THE FACE OF FINISHED MATERIAL.
- INSTALL WOOD BLOCKING TO STUDS TO SUPPORT ALL WALL-MOUNTED CABINETS AND EQUIPMENT AS REQUIRED.
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTING CABINETS.
- ALL BASE CABINETS SHALL BE 2'-0" DEEP UNLESS NOTED OTHERWISE.
- ALL CASEWORK SHALL BE FINISHED IN PLASTIC LAMINATE UNLESS NOTED OTHERWISE.
- PROVIDE 1" MINIMUM FILLER PANELS AT ALL LOCATIONS WHERE CABINETS ABUTS A WALL.
- PROVIDE ADJUSTABLE SHELVING WITHIN ALL WALL AND BASE CABINETS AS SHOWN BY DASHED LINE.
- PROVIDE 12" CLEAR INTERIOR DIMENSION ON ALL UPPER WALL CABINETS UNLESS NOTED OTHERWISE.
- COORDINATE ALL WALL OUTLETS TO AVOID CONFLICTS WITH CASEWORK. WHERE OUTLETS EXIST BELOW THE COUNTERTOP, PROVIDE A 2" MIN. GROMMET CENTERED ON THE KNEE SPACE BELOW.
- ENSURE CABINET HARDWARE DOES NOT PREVENT PROPER FUNCTION IN SITUATIONS WHERE CASEWORK IS IN THE INSIDE CORNER OF AN L-CONFIGURATION. PROVIDE SOFT CLOSING HINGES AND DRAWER SLIDES.
- ALL COUNTERTOPS TO HAVE FINISHED SURFACE AT 54" AFF UNLESS NOTED OTHERWISE OR WHERE THIS CLEARANCE PREVENTS THE INSTALLATION OF UNDER-COUNTER EQUIPMENT.
- PROVIDE FINISHED END PANELS, FILLERS, SUPPORTS, ETC. REQUIRED FOR A COMPLETE CABINETS INSTALLATION. PROVIDE CUTOUTS, ACCESS PANELS AND REMOVABLE COMPONENTS AS REQUIRED BY NEW OR EXISTING CONDITIONS SUCH AS ELECTRICAL OUTLETS, JUNCTION BOXES, CLEANOUTS, ETC. MOUNT TOP OF WALL CABINETS AT 47'-0" A.F.F. UNLESS OTHERWISE INDICATED.

INTERIOR ELEV. KEYNOTES

- PLASTIC LAMINATE (PL1) CASEWORK. REFER TO DETAILS FOR MORE INFORMATION.
- PLASTIC LAMINATE (CO2) COUNTER. REFER TO FINISH SPECIFICATIONS FOR MORE INFORMATION.
- CEILING MOUNTED MONITOR.
- TRESPA COUNTER (CO1). REFER TO FINISH SCHEDULE FOR MORE INFORMATION.
- EXISTING CASEWORK TO REMAIN.
- 6" VINYL BASE (WB1). REFER TO FINISH SPECIFICATIONS FOR MORE INFORMATION.
- ACCENT PAINT (P7).
- RELOCATED EXISTING CASEWORK. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.
- PLASTIC LAMINATE (PL1) END PANEL.
- I/O LOGO GRAPHIC LOCATION. COORDINATE WITH OWNER.



INDIANA UNIVERSITY

OPTOMETRY SCHOOL - FIRST FLOOR RENOVATIONS

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BID DOCUMENTS



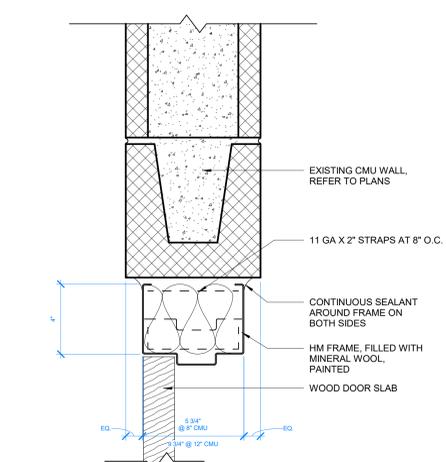
No.	Description	Date
A	ADDENDUM 01	25 MAR 2026

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DRW: CEKP | CHK: KMM

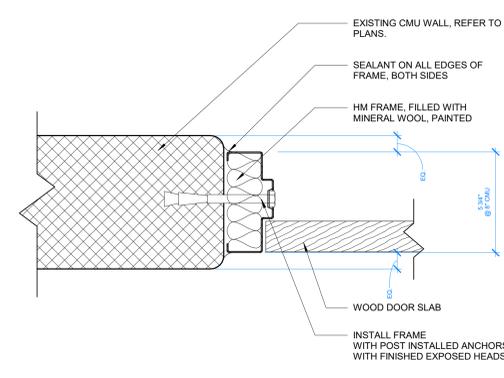
INTERIOR ELEVATIONS
A420

DOOR SCHEDULE

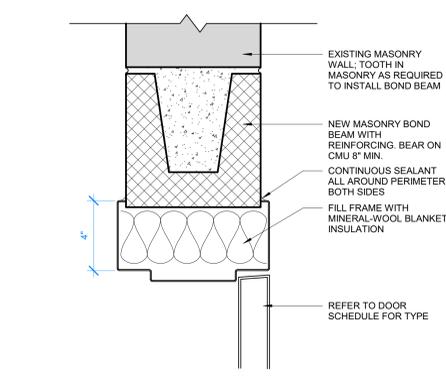
OPENING #	ROOM NAME	FIRE RATING	LEAF				FRAME				GLASS TYPE	HARDWARE SET	REMARKS		
			HEIGHT	WIDTH	INACTIVE	ELEVATION	ELEVATION	SIDELITE WIDTH	MATERIAL	DETAIL HEAD				DETAIL JAMB	
LEVEL 01 - FIRST FLOOR															
102B	STORAGE		7'-0"	3'-0"		F	WD	01		HM	1/A600	2/A600	-	01	
113	STUDY / EXAM ROOM		7'-0"	3'-0"		N	WD	01		HM	3/A600	4/A600	GL1	02	ACCESS CONTROL, KD FRAME-FIELD WELDED



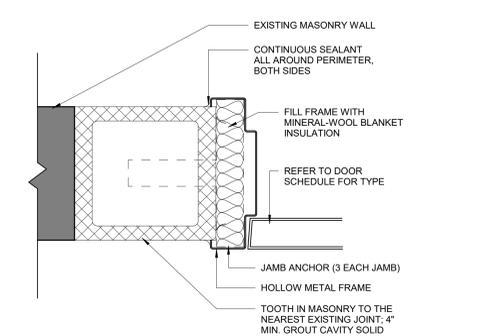
3 HM FRAME JAMB DETAIL (EXIST. OPENING)
3" = 1'-0"



4 HM FRAME JAMB DETAIL (EXIST. OPENING)
3" = 1'-0"

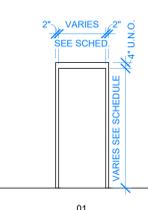


2 H.M. HEAD @ CMU - EXISTING WALL
3" = 1'-0"



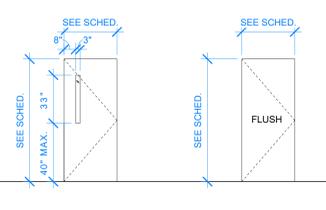
1 H.M. JAMB @ CMU - EXISTING WALL
3" = 1'-0"

DOOR FRAME ELEVATIONS



01

DOOR OPENING ELEVATIONS



N

F

GENERAL OPENING NOTES

- A. ALL DOORS TO OCCUPIABLE ROOMS SHALL HAVE PASSAGE HARDWARE IF NO OTHER HARDWARE IS SPECIFIED.
- B. ALL SINGLE USE RESTROOMS TO HAVE LOCKSETS WITH INTEGRAL "IN-USE" INDICATORS.
- C. DOOR LOCKSETS TO BE _____ UNLESS NOTED OTHERWISE (CONFIRM W/ OWNER).
- D. FINISHES FOR HARDWARE SHALL MATCH EXISTING.
- E. DOORS W/ CLOSERS TO HAVE BALL BEARING HINGES.
- F. KEY LOCKS AS PER OWNER'S REQUIREMENTS.
- G. ALL FIRE RATED DOORS SHALL BE SELF-CLOSING AND SELF LATCHING.
- H. DOOR OPENING HARDWARE SHALL BE CENTERED BETWEEN 30" & 44" ABOVE THE FINISHED FLOOR.
- I. WOOD DOORS SHALL HAVE ALL EDGES FACTORY PRIMED AND SEALED, RESEAL ALL DOOR EDGES CUT IN FIELD.
- J. MAINTAIN MIN. CLEAR WIDTH AT STRIKE SIDE OF DOORS IN ACCORDANCE WITH ADA.
- K. EXIT DOORS SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY, SPECIAL EFFORT, OR SPECIAL KNOWLEDGE.
- L. DOOR OPENING HARDWARE SHALL BE OPERABLE WITH A SINGLE EFFORT AND SHALL NOT REQUIRE TIGHT GRASPING OR TWISTING OF THE WRIST.
- M. REFER TO ELECTRICAL DRAWINGS FOR ACCESS CONTROL COORDINATION.
- N. THE FOLLOWING SHALL BE CONSIDERED HAZARDOUS LOCATIONS REQUIRING SAFETY GLAZING MATERIALS. COMPLY WITH ALL LOCAL BUILDING CODE REQUIREMENTS FOR SAFETY GLAZING.
 - a. **DOORS** - GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING, SLIDING, AND BIFOLD DOORS.
 - b. **ADJACENT TO DOORS** - GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE.
 - c. **WINDOWS** - GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS:
 - THE EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SF.
 - THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18" ABOVE THE FLOOR.
 - THE TOP EDGE OF THE GLAZING IS GREATER THAN 36" ABOVE THE FLOOR; AND
 - ONE OR MORE WALKING SURFACE(S) ARE WITHIN 36" MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE PLANE OF THE GLAZING.
 - d. **GUARDS AND RAILINGS** - GLAZING IN GUARDS AND RAILINGS, INCLUDING STRUCTURAL BALUSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS, REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE.
 - e. **WET SURFACES** - GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE. THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.
 - f. **ADJACENT TO STAIRS AND RAMPS** - GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS, AND RAMPS.
- O. WHERE GLASS STOPS ARE ON PUBLIC SIDE OF FRAME, PROVIDE TAMPER RESISTANT SCREWS.
- P. REFER TO TYPICAL HEAD AND JAMB DETAILS ON A600 SERIES SHEETS FOR FRAME DETAILS, U.N.O.
- Q. PROVIDE REINFORCING CHANNEL IN HOLLOW METAL FRAME HEAD WHERE TOTAL WIDTH OF FRAME IS GREATER THAN 4'-0"
- R. PROVIDE 2" WIDE, 11 GA STRAPS AT 8" O.C. REINFORCING IN HOLLOW METAL FRAME HEADS GREATER THAN 2" IN HEIGHT.
- S. UNDERCUT NON-RATED DOORS 1/2" FROM BOTTOM OF DOOR TO SCHEDULED FLOOR FINISH.
- T. UNDERCUT EXTERIOR DOORS 1/8" MAX FROM BOTTOM OF DOOR TO TOP OF THRESHOLD.
- U. PROVIDE SEALANT BETWEEN HOLLOW METAL FRAME PERIMETERS AND SURROUNDING WALL CONSTRUCTION UNLESS OTHERWISE INDICATED.
- V. PROVIDE SEALANT BETWEEN INTERIOR AND EXTERIOR WINDOW AND STOREFRONT FRAME PERIMETERS AND SURROUNDING CONSTRUCTION UNLESS OTHERWISE INDICATED.

OPENING SCHEDULE LEGEND

Leaf Types	Material Abbreviations
F - Flush	HM - Hollow Metal
N - Narrow Lite	WD - Wood
G - Half Glass	AL - Aluminum
FG - Full Glass	IG - Insulated Glass
AG - All Glass	
L - Lower	
B - Bifold	
D - Dutch	

GLAZING TYPE LEGEND

GL1 1/4" CLEAR GLAZING



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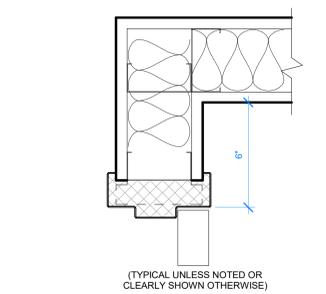


No.	Description	Date
A	ADDENDUM 01	25 MAR 2026

CLIENT PROJ. #: IU20250150
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OPENING SCHEDULE AND DETAILS

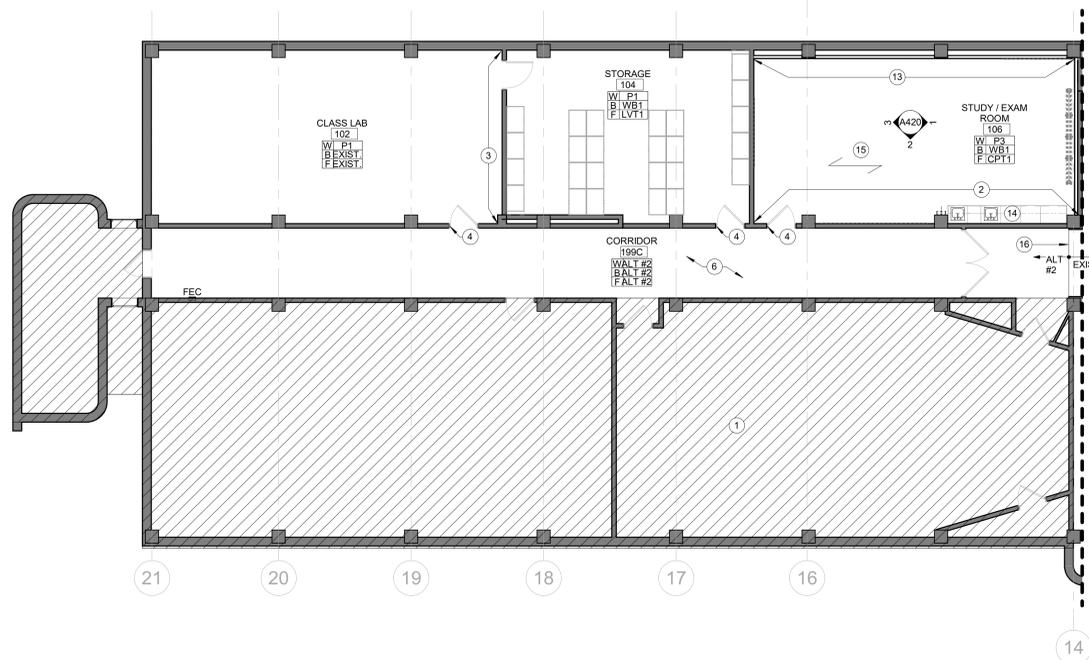
A600
3" = 1'-0"



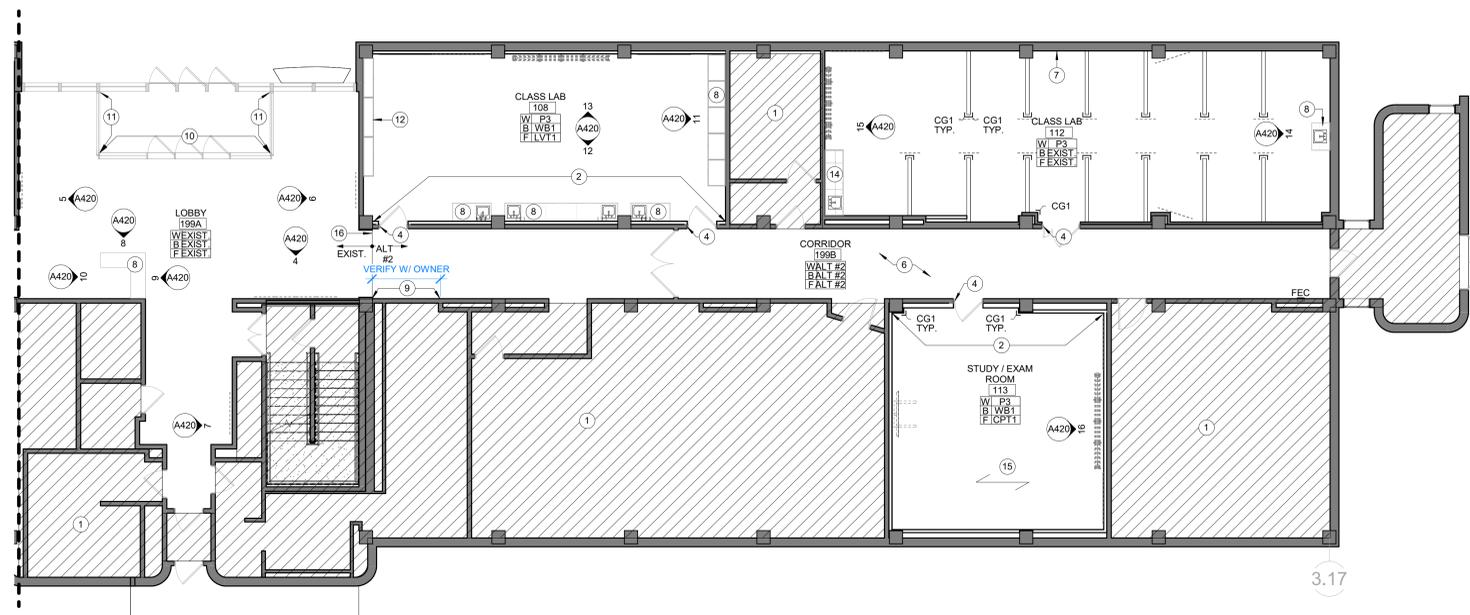
TYPICAL DOOR FRAME LOCATION (HINGE SIDE)
3" = 1'-0"

INTERIOR FINISH SELECTION SUMMARY

NAME	MANUFACTURER	STYLE	NUMBER	COLOR	SIZE	COMMENTS
CARPET TILE						
CPT1	INTERFACE	IU CUSTOM	261433-104	191266	24" x 24"	INSTALL IN BRICK ASHLAR PATTERN
COUNTERTOP						
CO1	TRESPA	TOPLAB PLUS	VP008	BLACK	--	LAB CASEWORK
LUXURY VINYL TILE						
LVT1	MANNINGTON	AMTICO SIGNATURE - STONE	AR05BS31	BASILICA SHALE	18" x 18"	INSTALL IN MONOLITHIC PATTERN
PAINT						
P1	SHERWIN WILLIAMS	REFER TO PROJECT MANUAL	SW7567	NATURAL TAN - EGGSHELL FINISH	--	FIELD PAINT
P2	SHERWIN WILLIAMS	REFER TO PROJECT MANUAL	SW7048	URBANE BRONZE - SEMI-GLOSS FINISH	--	DOOR FRAMES
P3	SHERWIN WILLIAMS	REFER TO PROJECT MANUAL	SW7547	SANDBAR - EGGSHELL FINISH	--	FIELD PAINT
P4	SHERWIN WILLIAMS	REFER TO PROJECT MANUAL	SW7586	STOLEN KISS - EGGSHELL FINISH	--	ACCENT PAINT
P5	SHERWIN WILLIAMS	REFER TO PROJECT MANUAL	SW7847	CRUSHED ICE - EGGSHELL FINISH	--	FIELD PAINT
PLASTIC LAMINATE						
PL1	WILSONART	LINEARITY TEXTURE	7949K-18	ASIAN NIGHT	--	CASEWORK
VINYL COMPOSITION TILE						
VCT1	ARMSTRONG FLOORING	STANDARD EXCELON - IMPERIAL TEXTURE	51830	COTTAGE TAN	12" x 12"	INSTALL IN MONOLITHIC PATTERN
WALL BASE						
WB1	ROPPE	COVE BASE	193	BLACK BROWN	6"H	INSTALL IN ROLLS
WALL PROTECTION						
FRP1	WOLF GORDON - RAMPART	RESHAM PLUS	REH 5509PLUS	ECRU	52" W ROLL	



2 FIRST FLOOR - FINISH PLAN - AREA A
1/8" = 1'-0"

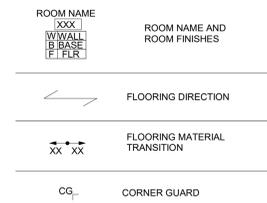


1 FIRST FLOOR - FINISH PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES - INT. FINISH

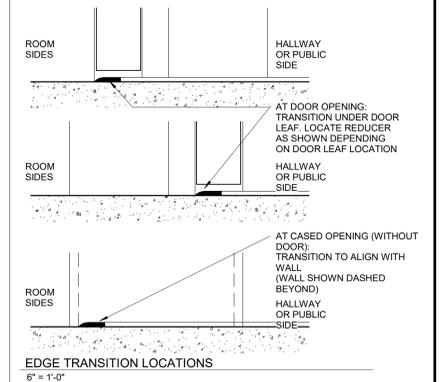
- REVIEWED SHOP DRAWINGS AND SCHEDULES PREPARED BY OTHERS SHALL NOT BE CONSTRUED TO BE PART OF THE CONTRACT DOCUMENTS, AS THE DESIGNER ASSUMES NO RESPONSIBILITY FOR DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS FOR WORK ON THE PROJECT PREPARED OR ACCOMPLISHED BY OTHERS.
- THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL CONDITIONS AND DIMENSIONS PRIOR TO THE START OF WORK. REPORT ANY DISCREPANCIES TO THE DESIGNER IMMEDIATELY.
- ALL MATERIALS AND EQUIPMENT ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ANY MISCELLANEOUS ITEMS OR MATERIALS NOT SPECIFICALLY NOTED ON THE DRAWINGS, BUT REQUIRED FOR PROPER MATERIAL INSTALLATION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR RESPONSIBLE FOR THAT SPECIFIC AREA OF WORK.
- ALL SPECIFICATIONS ARE TO BE UPHELD. CONTRACTORS REQUESTING SUBSTITUTIONS OF SPECIFIED ITEMS/MATERIALS SHALL SUBMIT, IN WRITING TO THE DESIGNER, A REQUEST FOR REVIEW AND CONSIDERATION OF ALTERNATES, WITH NO GUARANTEES FOR REVIEW OR APPROVAL. SUBSTITUTIONS WILL ONLY BE CONSIDERED IF SUBMITTED BEFORE THE ACTUAL PROJECT SUBMITTAL PROCESS. NO SUBSTITUTIONS WILL BE CONSIDERED AFTER THE SUBMITTAL PROCESS HAS COMMENCED. SUBSTITUTIONS SHALL NOT SACRIFICE QUALITY, APPEARANCE AND/OR FUNCTION.
- PATCH AND REPAIR ANY FLOOR HOLES, CRACKS, IMPERFECTIONS, ETC. TO ORIGINAL STATE. LEVEL SLAB AS REQUIRED TO ACCEPT NEW FLOORING MATERIAL.
- PATCH, REPAIR AND RESTORE EXISTING FINISHES AND SURFACES TO "AS NEW CONDITION" AS REQUIRED TO MATCH SURROUNDING MATERIALS OR TO PROVIDE APPROPRIATE SUBSTRATE PRIOR TO INSTALLING NEW FINISHES. AREAS NOTED TO BE PATCHED OR REPAIRED ON THE DRAWINGS ARE PROVIDED FOR REFERENCE AND SHALL NOT BE INTERPRETED TO LIMIT THE SCOPE OF WORK REQUIRED. AT MASONRY FINISHES: CONTRACTOR TO SCAP IN NEW FACES AT HOLES AND VOIDS LARGER THAN 2" IN DIAMETER, OR WHERE THERE ARE 5 OR MORE HOLES SMALLER THAN 2" IN ANY 1' FACE. MATCH EXISTING COURSING, TEXTURE AND FINISH.
- HONOR ALL BUILDING EXPANSION/CONTROL JOINTS. USE A FULL FLOOR COVERAGE MEMBRANE FOR PORCELAIN TILE FLOORING APPLICATIONS.
- PROVIDE STAINLESS STEEL SCHLITERS/STRIPS BETWEEN PORCELAIN TILE GRAPHICS/TRANSITIONS AND/OR TILE DIRECTIONAL CHANGES. CONSULT DESIGNER IF IN QUESTION.
- PROVIDE SCHLITERS/CHIEFNE TRANSITION STRIPS WHERE CARPET TILE MEETS MATERIALS OF UNEQUAL THICKNESS. TRANSITION STRIPS AT DOORS TO BE LOCATED UNDER THE CENTER LINE OF THE DOOR, WHILE IN THE CLOSED POSITION. TRANSITION STRIP FINISH TO BE CHOSEN FROM MANUFACTURER'S FULL COLOR RANGE.
- HOLLOW METAL DOOR FRAMES ARE TO BE PAINTED (P2) IN A SEMI-GLOSS FINISH.
- PAINT ALL GRILLES, ETC., TO MATCH THE SURFACE ON WHICH THEY OCCUR; PAINT IN A SEMI-GLOSS FINISH.
- ALL BULKHEADS/DRYWALL CEILINGS TO BE PAINTED CEILING WHITE, IN A FLAT FINISH FOR ALL SURFACES, UNO.
- ALL CHANGES IN FLOOR FINISHES SHALL OCCUR BELOW THE DOOR IN CLOSED POSITION, UNO.
- ALL FINISHES AND SPECIFICATIONS ARE TO BE SUBMITTED TO DELV DESIGN FOR FINAL APPROVAL PRIOR TO ORDERING FINISH MATERIALS. SUBMIT THE REQUIRED NUMBER OF SUBMITTALS (INCLUDING PHYSICAL SAMPLES), FOR DESIGNER REVIEW AND APPROVAL, PLUS ONE EXTRA COPY FOR DESIGNER'S RECORDS. PRIOR TO MATERIAL ORDER PLACEMENT AND INSTALLATION, PROVIDE SUBMITTALS FOR THE FOLLOWING CONSTRUCTION COMPONENTS:
 - ALL FINISH MATERIALS (WITH PLANS INDICATING FLOORING MATERIAL LOCATIONS, PATTERNS AND WALL MATERIAL LOCATIONS, ETC.)
 - CASEWORK/CUSTOM FABRICATION
 - CEILING MATERIALS
- PROVIDE OWNER WITH (1) FULL BOX OF EACH PRODUCT/FINISH MATERIAL SPECIFIED ON THE PROJECT OR 2% OF MATERIAL OVERAGE FOR EACH PRODUCT SPECIFIED, WHICHEVER APPLIES.

FINISH LEGEND



FINISH PLAN KEYNOTES

- AREA NOT IN SCOPE.
- ACCENT PAINT (P4).
- PATCH AND PAINT WALL FROM CORNER TO CORNER INSTALLATION OF NEW DOOR. MATCH ADJACENT CONSTRUCTION AND FINISH, BOTH SIDES.
- PAINT METAL DOOR FRAMES P2, BOTH SIDES.
- CAP EXPOSED OUTSIDE CORNERS WITH 1"x1" STAINLESS STEEL FULL HEIGHT CORNER GUARD.
- ALTERNATE #2 - NEW FLOORING, BASE AND PAINT THIS CORRIDOR. FLOORING (LVT1), PAINT (P5), AND BASE (WB1).
- CUSTOM PVC IJ TRIDENT LOCATION. COORDINATE WITH OWNER.
- CASEWORK. REFER TO INTERIOR ELEVATIONS FOR MORE INFORMATION.
- CUSTOM VINYL WALL GRAPHIC BY OWNER.
- CUSTOM WINDOW FILM GRAPHIC ON EXISTING STOREFRONT.
- CUSTOM GRAPHIC PRIVACY WINDOW FILM BY OWNER.
- CASEWORK RELOCATED FROM LAB 112. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.
- WALL PROTECTION (FRP1) INSTALL UP TO 4'-0" A.F.E. CAP WITH ACROVYN SQUARE RAIL FR-259 (ARCHITECT TO SELECT FROM MANUFACTURER'S RANGE OF COLORS).
- EXISTING CASEWORK.
- INSTALL CARPET TILE IN THE DIRECTION INDICATED BY PLAN ARROWS. LONGEST LENGTH OF CARPET TILE PLANKS TO FOLLOW ARROWS.
- ALTERNATE #2 - LINE INDICATES EXTENT OF NEW FLOORING.



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KEY PLAN

BID DOCUMENTS



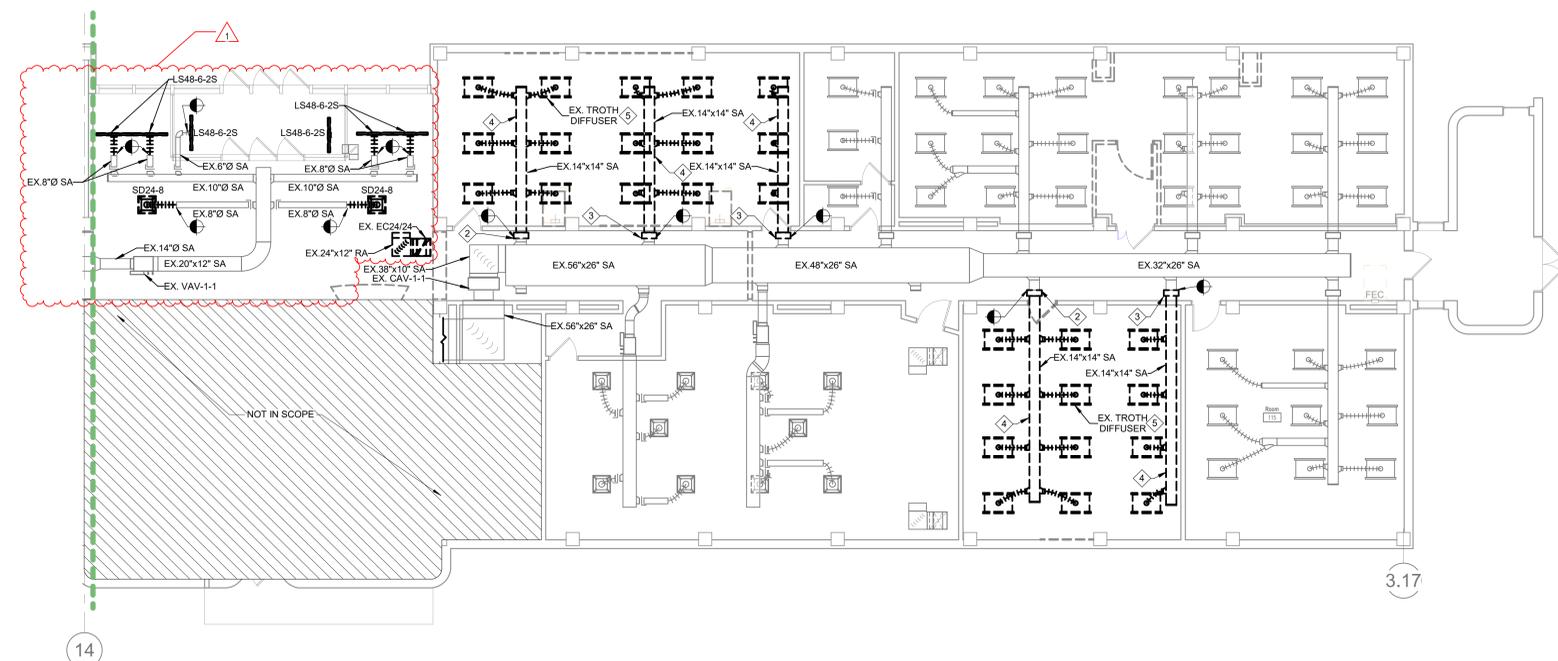
No.	Description	Date
A	ADDENDUM 01	25 MAR 2026

CLIENT PROJ. #: IU02050150
PROJECT #: 25-042
ISSUE DATE: 03/03/2026
DRW: CEKP | CHK: KMM

INTERIOR FINISH PLAN
- FIRST FLOOR BL065

A711

- GENERAL DEMOLITION NOTES**
- A DARK DASHED LINES INDICATE EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING, AND/OR MECHANICAL ACCESSORIES DEMOLISHED COMPLETE. CONTRACTOR TO FIELD VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO BIDDING AND DEMOLITION. CONTRACTOR TO INCLUDE ALL COST TO REMOVE ITEMS MADE OBSOLETE DUE TO NEW HVAC WORK.
- B LIGHT SOLID LINES INDICATE EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING, AND/OR MECHANICAL ACCESSORIES TO REMAIN AS-IS. CONTRACTOR TO FIELD VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO DEMOLITION AND BIDDING.
-
- DEMOLITION HVAC PLAN NOTES**
- 1 REMOVE EXISTING DIFFUSER COMPLETE.
 - 2 REMOVE DUCT REHEAT COIL COMPLETE.
 - 3 REMOVE DUCT REHEAT COIL COMPLETE AND ASSOCIATED DUCT TO POINT INDICATED. CAP DUCT TAPS UP STREAM OF REHEAT COIL.
 - 4 REMOVE FLEX DUCT AND SHEET METAL DUCT COMPLETE BACK TO MAIN.
 - 5 REMOVE LIGHT TROTH DIFFUSER. COORDINATE WITH EC. (TYPICAL).
 - 6 REMOVE DUCT REHEAT COIL AND SHEET METAL DUCT TO POINT INDICATED.
 - 7 REMOVE HEATING HOT WATER PIPING TO POINT INDICATED.
 - 8 REMOVE HEATING HOT WATER PIPING TO POINT INDICATED. CAP REMAINING PIPING.



KEY PLAN

BID DOCUMENTS



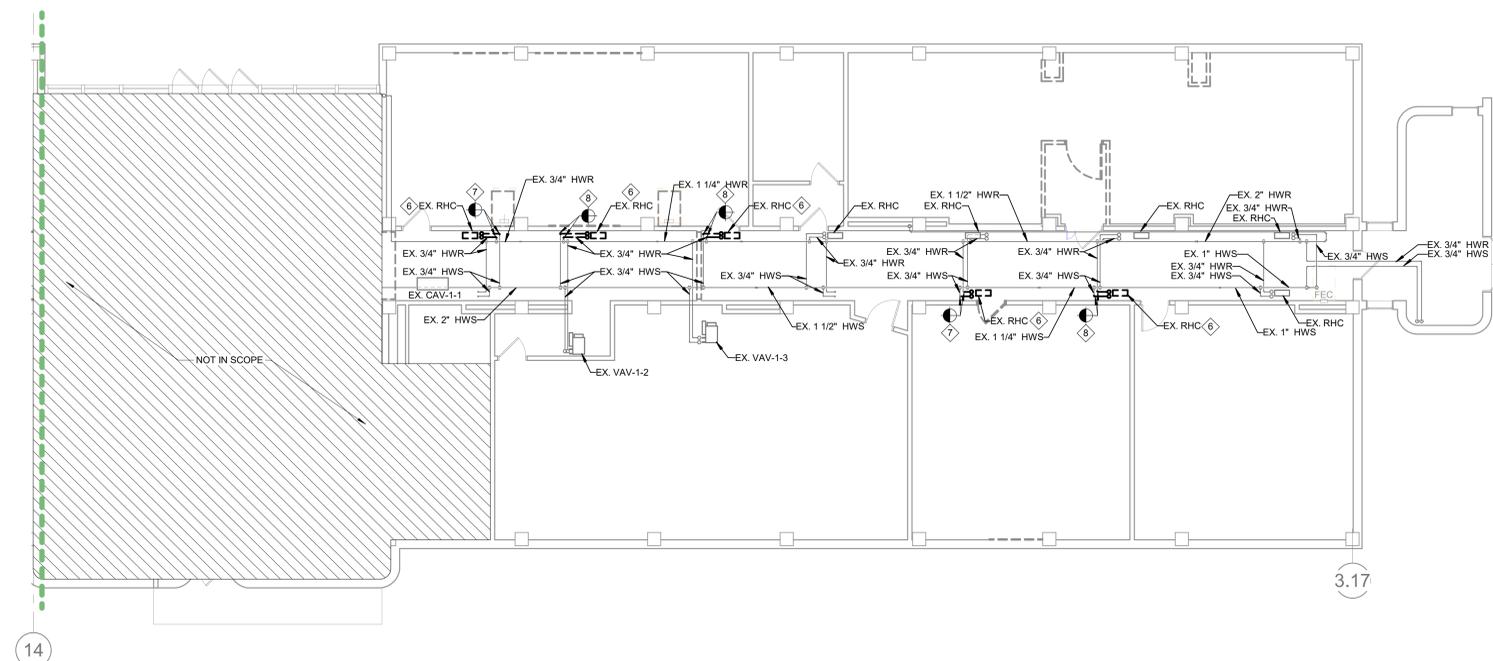
No.	Description	Date
1	Addendum #1	03/25/2026

CLIENT PROJ. #: IU20250150
PROJECT #: 25-042
ISSUE DATE: 03/03/2026
DRW: JH | CHK: GC
**MECHANICAL
DEMOLITION FIRST
FLOOR HVAC PLAN -
UNIT B**

MD101

1 MECHANICAL DEMOLITION FIRST FLOOR HVAC PLAN - UNIT B
1/8" = 1'-0"

- GENERAL DEMOLITION NOTES**
- A DARK DASHED LINES INDICATE EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING, AND/OR MECHANICAL ACCESSORIES DEMOLISHED COMPLETE. CONTRACTOR TO FIELD VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO BIDDING AND DEMOLITION. CONTRACTOR TO INCLUDE ALL COST TO REMOVE ITEMS MADE OBSOLETE DUE TO NEW HVAC WORK.
- B LIGHT SOLID LINES INDICATE EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING, AND/OR MECHANICAL ACCESSORIES TO REMAIN AS-IS. CONTRACTOR TO FIELD VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO DEMOLITION AND BIDDING.
- DEMOLITION HVAC PLAN NOTES**
- 1 REMOVE EXISTING DIFFUSER COMPLETE.
 - 2 REMOVE DUCT REHEAT COIL COMPLETE.
 - 3 REMOVE DUCT REHEAT COIL COMPLETE AND ASSOCIATED DUCT TO POINT INDICATED. CAP DUCT TAPS UP STREAM OF REHEAT COIL.
 - 4 REMOVE FLEX DUCT AND SHEET METAL DUCT COMPLETE BACK TO MAN.
 - 5 REMOVE LIGHT TROFFER DIFFUSER. COORDINATE WITH EC. (TYPICAL).
 - 6 REMOVE DUCT REHEAT COIL AND SHEET METAL DUCT TO POINT INDICATED.
 - 7 REMOVE HEATING HOT WATER PIPING TO POINT INDICATED.
 - 8 REMOVE HEATING HOT WATER PIPING TO POINT INDICATED. CAP REMAINING PIPING.



1 MECHANICAL DEMOLITION FIRST FLOOR PIPING PLAN - UNIT B
1/8" = 1'-0"



KEY PLAN

BID DOCUMENTS



No.	Description	Date
1	Addendum #1	03/25/2026

CLIENT PROJ. #: IU20250150
PROJECT #: 25-042
ISSUE DATE: 03/03/2026
DRW: JH | CHK: GC
**MECHANICAL
DEMOLITION FIRST
FLOOR PIPING PLAN -
UNIT B**

MD102

- GENERAL PIPING NOTES**
- A DARK LINES INDICATE NEW WORK.
 - B LIGHT SOLID LINES INDICATE EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING, AND/OR MECHANICAL ACCESSORIES TO REMAIN AS-IS. CONTRACTOR TO FIELD VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO BIDDING.
 - C PROVIDE SHUTOFF VALVES AT EVERY BRANCH CONNECTION TO A MAIN.
 - D NEW SHUTOFF VALVES SHALL BE INSTALLED FOR ALL NEW HYDRONIC EQUIPMENT.
- MECHANICAL PIPING PLAN NOTES**
- 1 VALVE AND CAP HOT WATER PIPING.

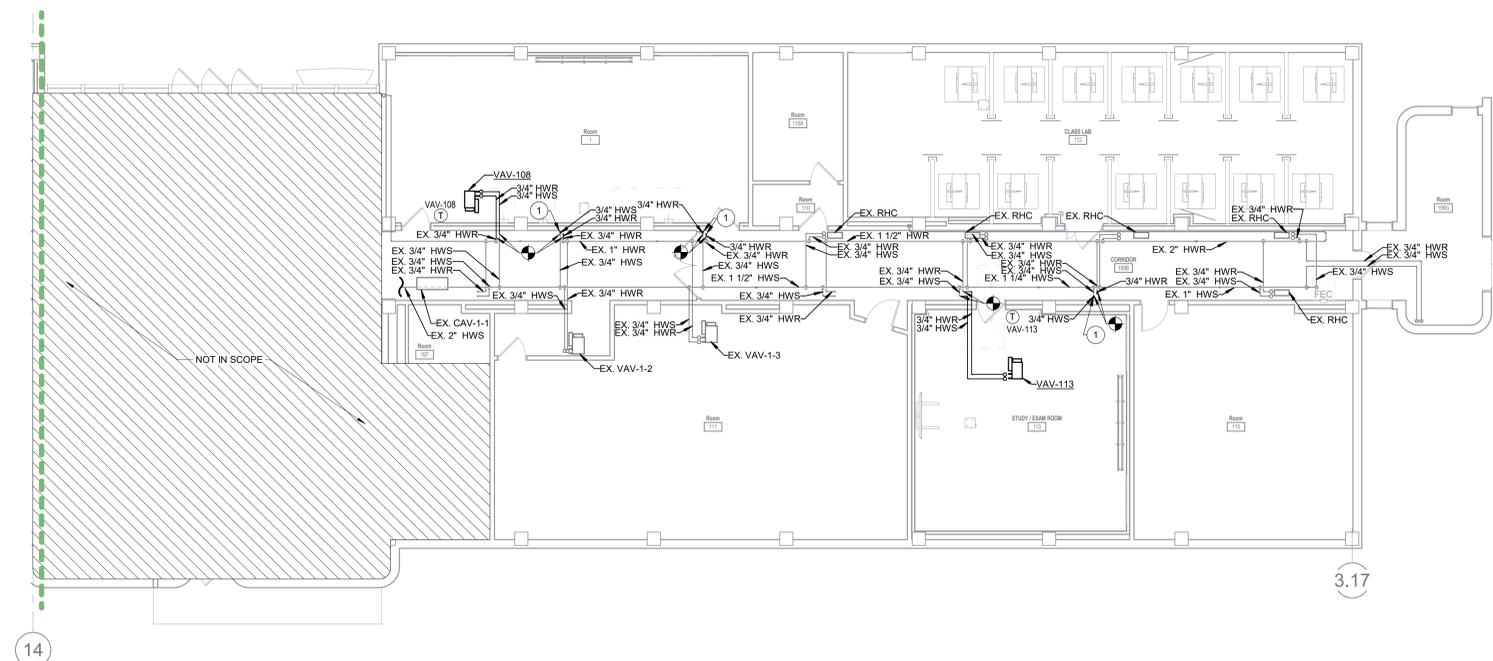


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OPTOMETRY BLDG - FIRST FLOOR RENOVATIONS

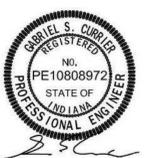
ARCHITECT
 DELV Design Studio, LLC,
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MEP
 Creative Engineering Solutions
 602 N Capitol Ave
 Indianapolis, IN 46204
 (463) 233-9799



KEY PLAN

BID DOCUMENTS



No.	Description	Date
1	Addendum #1	03/25/2026

CLIENT PROJ. #: IU20250150
 PROJECT #: 25-042
 ISSUE DATE: 03/03/2026
 DRW: JH | CHK: GC

1 MECHANICAL PIPING FIRST FLOOR PLAN- UNIT B
 1/8" = 1'-0"

MECHANICAL PIPING FIRST FLOOR PLAN - UNIT B

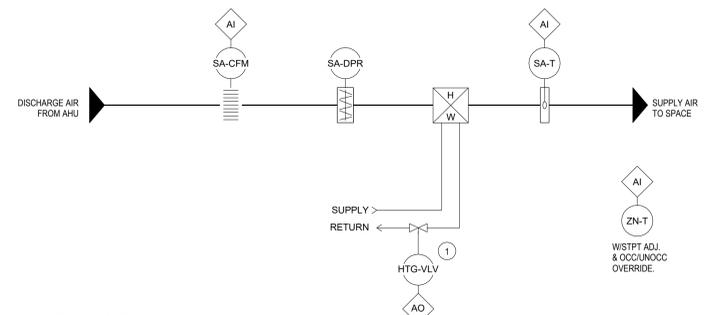
MP101

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SEQUENCE OF OPERATION

OCCUPIED MODE:

IF ZONE TEMPERATURE, AS SENSED BY ZONE TEMPERATURE SENSOR (ZN-T), IS WITHIN THE DEADBAND LIMITS OF 70F-74F (ADJ.), THE SUPPLY AIR DAMPER (SA-DPR) WILL BE AT MINIMUM COOLING AIRFLOW SETPOINT AS SENSED BY SUPPLY AIR FLOW MEASURING STATION (SA-CFM), AND THE HYDRONIC HEATING CONTROL VALVE (HTG-VLV) IS CLOSED. IF ZONE TEMPERATURE (ZN-T) INCREASES BEYOND THE UPPER DEAD BAND LIMIT, THE SUPPLY AIR DAMPER (SA-DPR) WILL MODULATE FROM MINIMUM COOLING AIRFLOW SETPOINT TO MAXIMUM COOLING AIRFLOW SETPOINT TO SATISFY ZONE TEMPERATURE (ZN-T) SETPOINT OF 72F (ADJ.). IF ZONE TEMPERATURE (ZN-T) FALLS BELOW THE LOWER DEADBAND LIMIT, THE SUPPLY AIR DAMPER (SA-DPR) WILL MODULATE FROM MAXIMUM COOLING SETPOINT TO MINIMUM COOLING SETPOINT. IF THE ZONE TEMPERATURE (ZN-T) CONTINUES TO FALL BELOW THE LOWER DEAD BAND LIMIT, THE SUPPLY AIR DAMPER (SA-DPR) WILL BE FIXED AT THE HEATING AIRFLOW SETPOINT AND THE HYDRONIC HEATING CONTROL VALVE (HTG-VLV) WILL MODULATE TO MAINTAIN ZONE TEMPERATURE SETPOINT.

UNOCCUPIED MODE:

THE UNOCCUPIED MODE SEQUENCE OF OPERATION IS THE SAME AS THE OCCUPIED MODE. THE UNOCCUPIED MODE DEADBAND LIMITS WILL BE 55F-85F (ADJ.). WHEN ANY TWO VAV TERMINAL UNITS EXCEED THE UPPER DEAD BAND LIMIT OR FALL BELOW THE LOWER DEAD BAND LIMIT, AS SENSED BY THE ZONE TEMPERATURE SENSOR (ZN-T), THE ASSOCIATED AIR HANDLING UNIT WILL BE ENABLED AND OPERATE IN UNOCCUPIED MODE.

NOTES:

- DISCHARGE AIR TEMPERATURE SENSOR (SA-T) FURNISHED BY SIEMENS AND INSTALLED BY CIC.
- HYDRONIC HEATING CONTROL VALVE (HTG-VLV) FURNISHED BY SIEMENS AND INSTALLED BY MC. CONTROLS COMMUNICATION WIRING BY CIC.
- VAV TERMINAL UNIT CONTROLLER AND DAMPER ACTUATOR FURNISHED BY SIEMENS AND FIELD INSTALLED BY CIC.
- LOW VOLTAGE POWER WIRING TO VAV TERMINAL UNIT CONTROLLER BY CIC.

NOTES:

- PROVIDE 3-WAY VALVE ON VAV TERMINALS AS INDICATED IN THE SCHEDULE.

**1 SINGLE DUCT VAV TERMINAL UNIT -
HYDRONIC REHEAT
NOT TO SCALE**

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**TEMPERATURE
CONTROLS
SCHEMATICS**

M-701

PLUMBING GENERAL NOTES

- A. SEE DRAWING P-001 FOR ADDITIONAL NOTES.
- B. PIPING SHOWN IS FROM EXISTING DRAWINGS AND SITE INVESTIGATIONS. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF ANY WORK.

DEMOLITION PLAN NOTES

- 1 REMOVE EXISTING SINK COMPLETE. REMOVE ASSOCIATED WATER, WASTE, AND VENT PIPING BACK TO MAIN AND CAP. PATCH FLOOR TO MATCH EXISTING.
- 2 REMOVE EXISTING SINK COMPLETE. REMOVE ASSOCIATED WATER, WASTE, AND VENT PIPING BACK TO MAIN AND CAP. PATCH FLOOR TO MATCH EXISTING. REMOVE ALL WATER, WASTE, AND VALVING ASSOCIATED WITH SINK. CUTTER COMPLETE.
- 3 REMOVE EXISTING SINK AND FAUCET COMPLETE. PREPARE SINK AND FAUCET FOR REINSTALLATION AND SET ASIDE. REMOVE ASSOCIATED WATER, WASTE, AND VENT PIPING BACK TO MAIN AND CAP. PATCH FLOOR TO MATCH EXISTING.

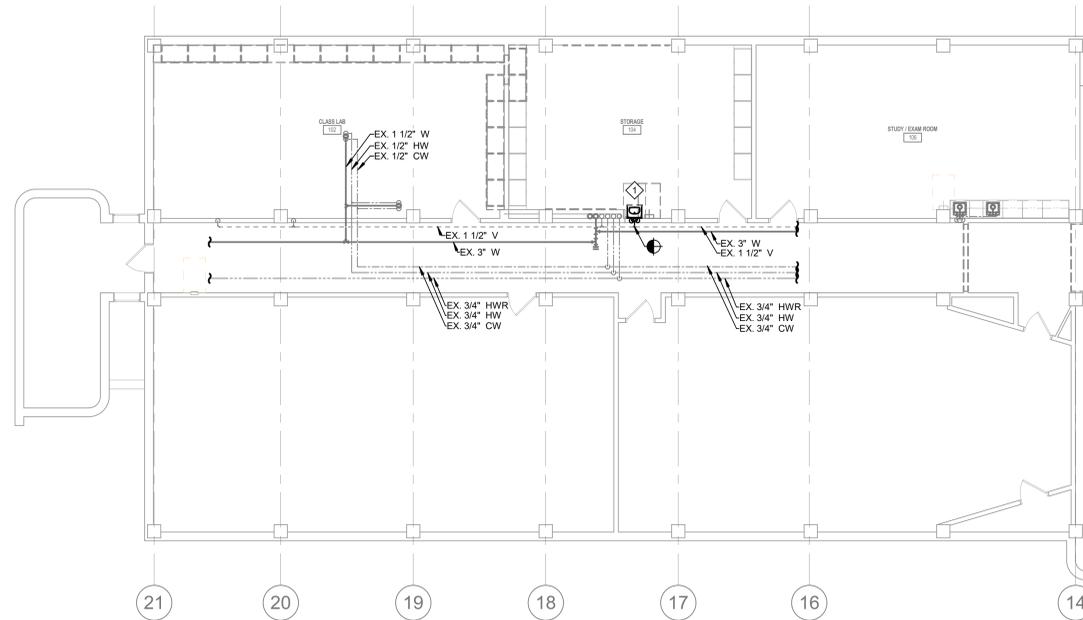


INDIANA UNIVERSITY

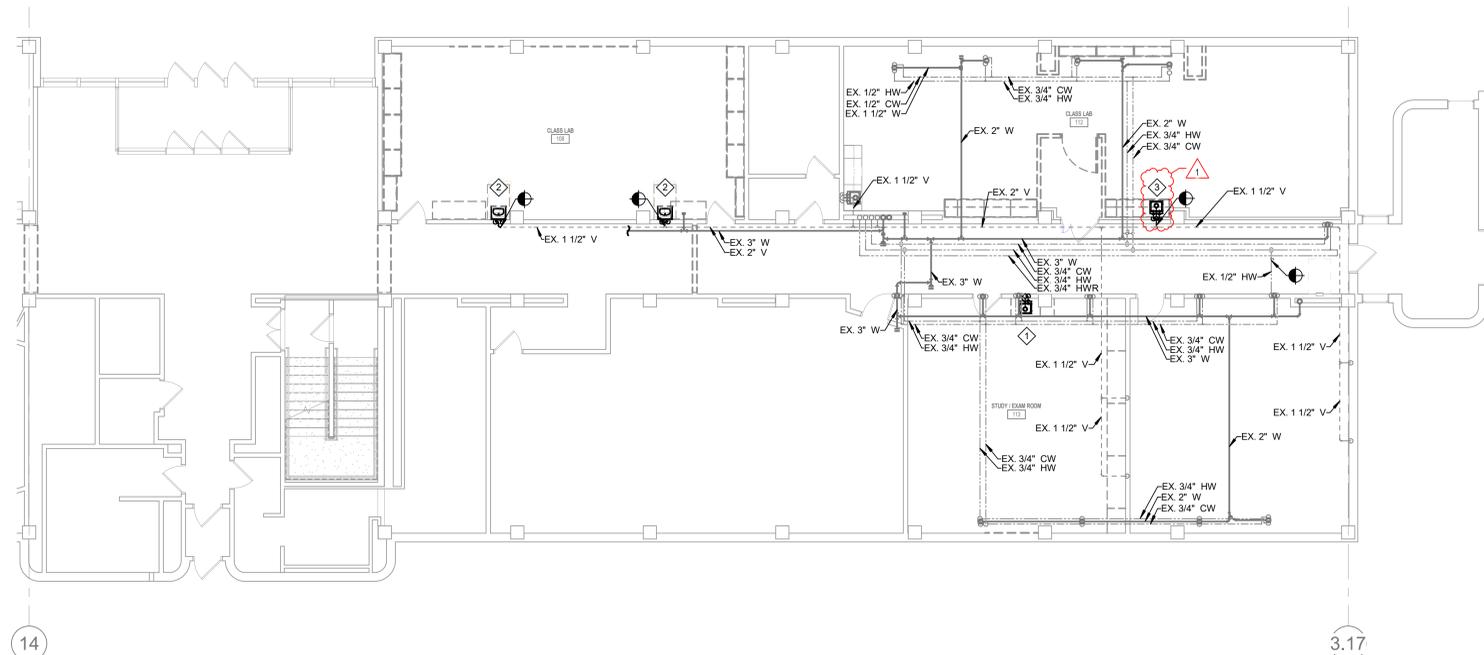
OPTOMETRY BLDG - FIRST FLOOR RENOVATIONS

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2 PLUMBING DEMOLITION FIRST FLOOR PLAN - AREA A
 1/8" = 1'-0"



1 PLUMBING DEMOLITION FIRST FLOOR PLAN - AREA B
 1/8" = 1'-0"



KEY PLAN

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PLUMBING DEMOLITION FIRST FLOOR PLANS

PD101

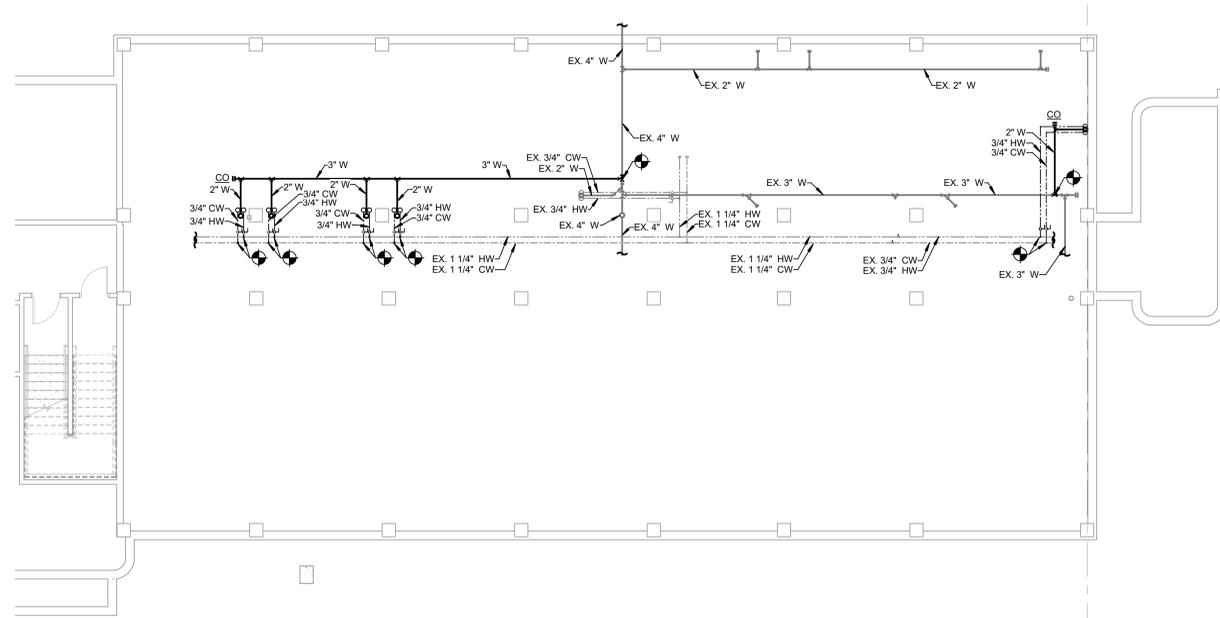
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- A. SEE DRAWING P-001 FOR ADDITIONAL NOTES.
- B. PIPING SHOWN IS FROM EXISTING DRAWINGS AND SITE INVESTIGATIONS. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF ANY WORK.

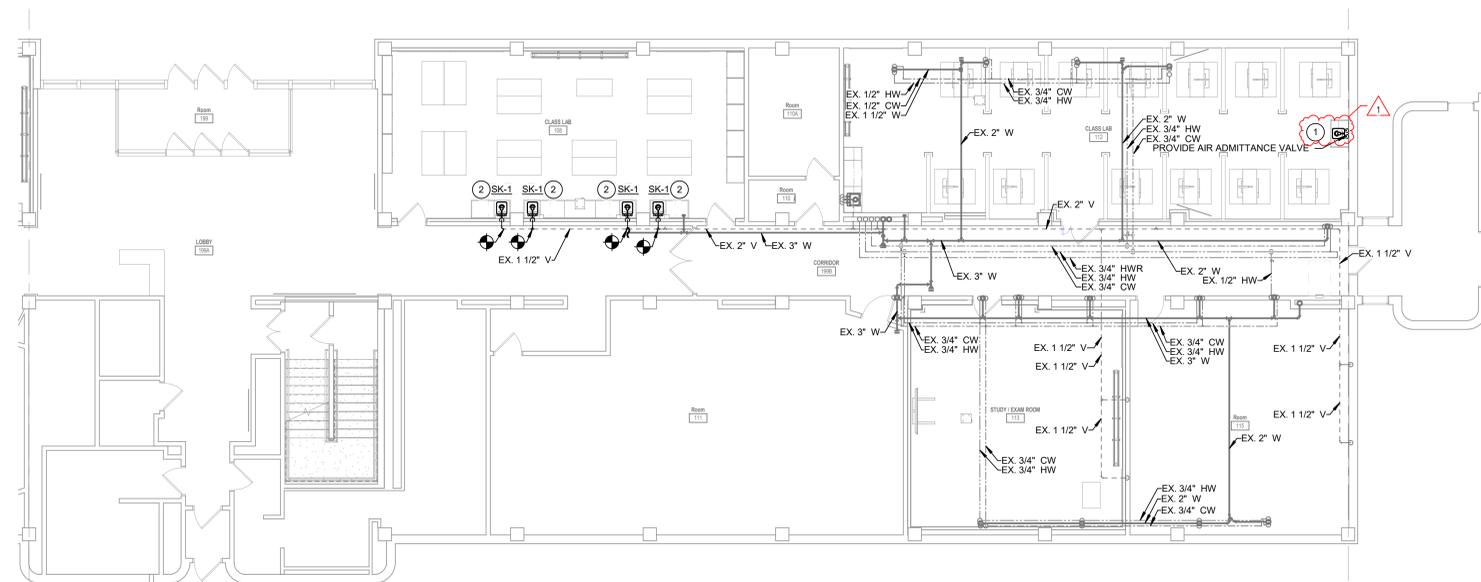
PLUMBING PLAN NOTES

- 1 THIS SINK AND FAUCET WAS REMOVED AND SAVED DURING THE DEMOLITION PHASE. REINSTALL COMPLETE. CONNECT 2" WASTE, 3/4" HW, AND 3/4" CW TO EXISTING PIPING LOCATED IN CRAWL SPACE BELOW. PROVIDE BALL VALVES ON HW AND CW PIPING.
- 2 CONNECT 2" WASTE, 3/4" HW, AND 3/4" CW TO EXISTING PIPING LOCATED IN CRAWL SPACE BELOW. PROVIDE BALL VALVES ON HW AND CW PIPING. PROVIDE HW AND CW PIPING, WASTE PIPING AND ALL VALVING REQUIRED FOR LENS CUTTER.

COMMERCIAL SINK SCHEDULE (224216.16)							FIXTURE CONNECTION				MOUNTING	ADA COMPLIANT	NOTES
MARK	MANUFACTURER	MODEL	DESCRIPTION	FAUCET MANUFACTURER	FAUCET MODEL	CW	HW	W	V				
SK-1	ELKAY	#EELUHAD13164SPD	STAINLESS STEEL, SINGLE BOWL, UNDERMOUNTED SINK	CHICAGO FAUCET	#116.995.AB.1T	1/2"	1/2"	1/2"	1/2"	COUNTER	Yes	PROVIDE ASSE 1070 MIXING VALVE	



2 PLUMBING CRAWLSPACE PLAN - UNIT B
1/8" = 1'-0"



1 PLUMBING FIRST FLOOR PLAN - AREA B
1/8" = 1'-0"



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**PLUMBING CRAWL
SPACE, FIRST FLOOR
PLAN - AREA B AND
SCHEDULE**

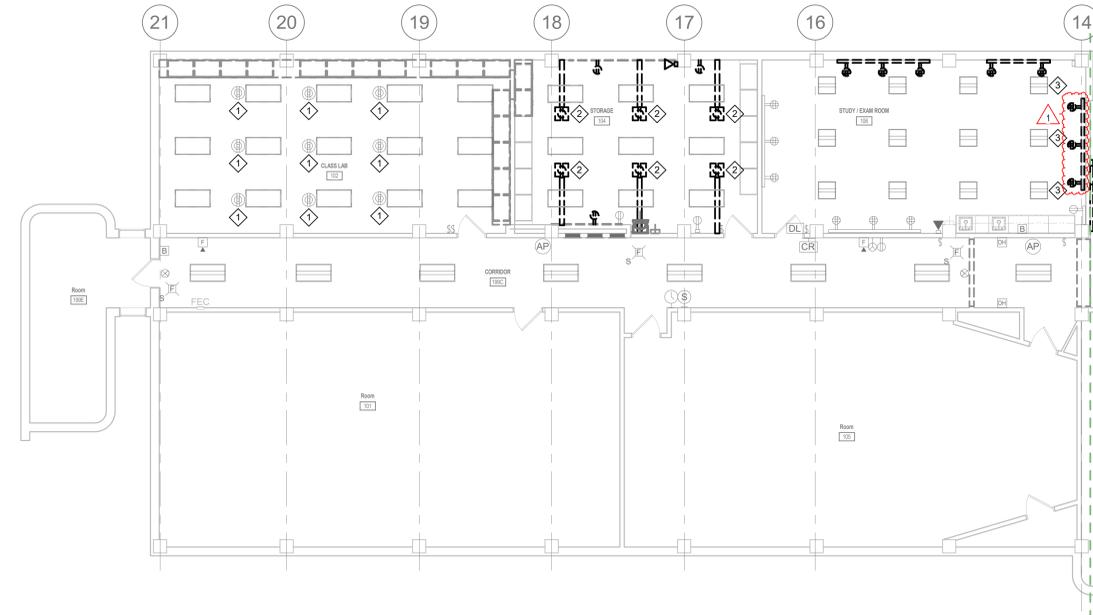
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GENERAL DEMOLITION NOTES

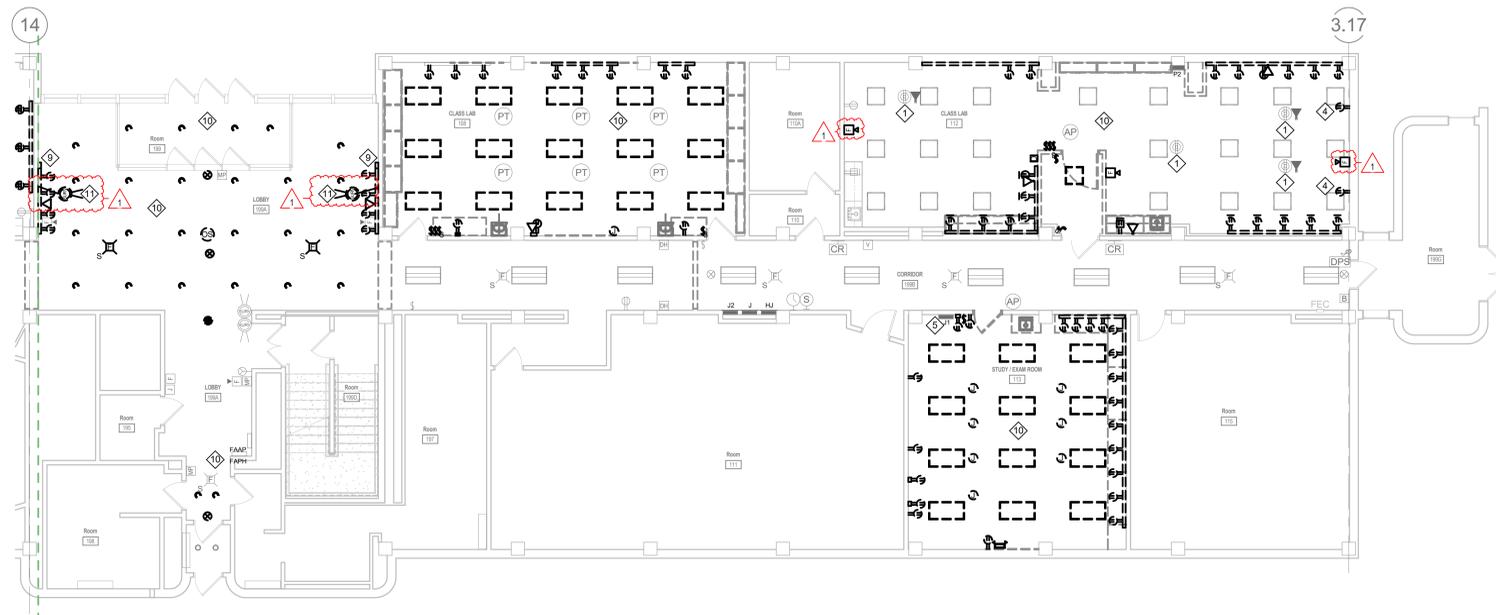
- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
- B THIS DRAWING REPRESENTS INFORMATION OBTAINED FROM ORIGINAL CONTRACT DRAWINGS AND FIELD SURVEY. VERIFY BY ON-SITE OBSERVATION THE EXTENT OF WORK PRIOR TO SUBMISSION OF BID.
- C CONTRACT DOCUMENTS CONSIST OF BOTH PROJECT MANUAL AND DRAWINGS AND ARE MEANT TO BE COMPLEMENTARY. ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
- D THOROUGHLY EXAMINE THE WORK OF OTHER CONTRACTORS AND PROPERLY DEMOLISH ALL WORK REQUIRED FOR THE PROJECT.
- E THE OWNER HOLDS RIGHT OF FIRST REFUSAL FOR ALL DEMOLISHED ELECTRICAL EQUIPMENT.
- F ALL ELECTRICAL ITEMS SHOWN WITH LIGHT LINEWORK ARE EXISTING TO REMAIN.
- G COORDINATE AND DISCONNECT ALL ARCHITECTURAL, MECHANICAL AND PLUMBING EQUIPMENT AS NOTED FOR REMOVAL BY OTHERS. REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, RACEWAYS, CONDUCTORS, ETC. SERVING THE EQUIPMENT.
- H PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS.
- J PROVIDE A BLANK COVERPLATE FOR ALL EXISTING WALL OPENINGS WHERE ELECTRICAL EQUIPMENT HAS BEEN REMOVED AND NOT REPLACED. IN AREAS RECEIVING NEW WALL TREATMENTS, PATCH THE EXISTING OPENING.
- J REFER TO A, M, AND P-SERIES DRAWINGS FOR AREAS WITH ABOVE CEILING WORK AND/OR CEILING REMOVAL. TEMPORARILY SUPPORT ALL ELECTRICAL DEVICES, FIXTURES, ETC. AS REQUIRED. RE-INSTALL ELECTRICAL ITEMS FOLLOWING THE COMPLETION OF WORK IN THE NEW OR EXISTING CEILINGS.
- K PROVIDE A COMPLETE FIRE ALARM SYSTEM TEST PRIOR TO DEMOLITION.
- L NOT ALL PLAN NOTES ARE USED ON THIS SHEET.

DEMOLITION PLAN NOTES

- 1 REMOVE DROP CORD. MAINTAIN CEILING MOUNTED RECEPTACLE. TURN DROP CORD OVER TO OWNER.
- 2 REMOVE UNDER CARPET RACEWAY COMPLETE.
- 3 MAINTAIN LIGHT FIXTURE. MAINTAIN CIRCUIT TO LIGHT FIXTURE. REMOVE LIGHTING CONTROL.
- 4 DISCONNECT POWER CONNECTION TO RECEPTACLE. REMOVE RECEPTACLE.
- 5 PREPARE PANELBOARD AND CONDUITS TO BE RECESSED IN WALL. RAISE CONDULET ABOVE CEILING. REWORK CIRCUIT AS REQUIRED.
- 6 REMOVE ROTATING INDICATOR LIGHT. MAINTAIN REMAINING SYSTEM.
- 7 REMOVE PANELBOARD. MAINTAIN FEEDER CONDUIT AND CONDUCTORS FOR EXTENSION. MAINTAIN CIRCUITS FOR EXTENSION.
- 8 DISCONNECT CONDUCTORS FROM LIGHT SWITCH. REMOVE CONDUIT AND CONDUCTORS FROM LIGHT SWITCH BACK TO JUNCTION BOX FOR REWORKING.
- 9 CAREFULLY REMOVE SURFACE MOUNTED RACEWAY.
- 10 DISCONNECT POWER CONNECTION TO LIGHT FIXTURES IN ROOM. MAINTAIN LIGHTING CIRCUITS FOR REUSE.
- 11 DISCONNECT CAMERA. TURN OVER TO OWNER.



2 ELECTRICAL DEMOLITION FIRST FLOOR PLAN - AREA A
1/8" = 1'-0"



1 ELECTRICAL DEMOLITION FIRST FLOOR PLAN - AREA B
1/8" = 1'-0"



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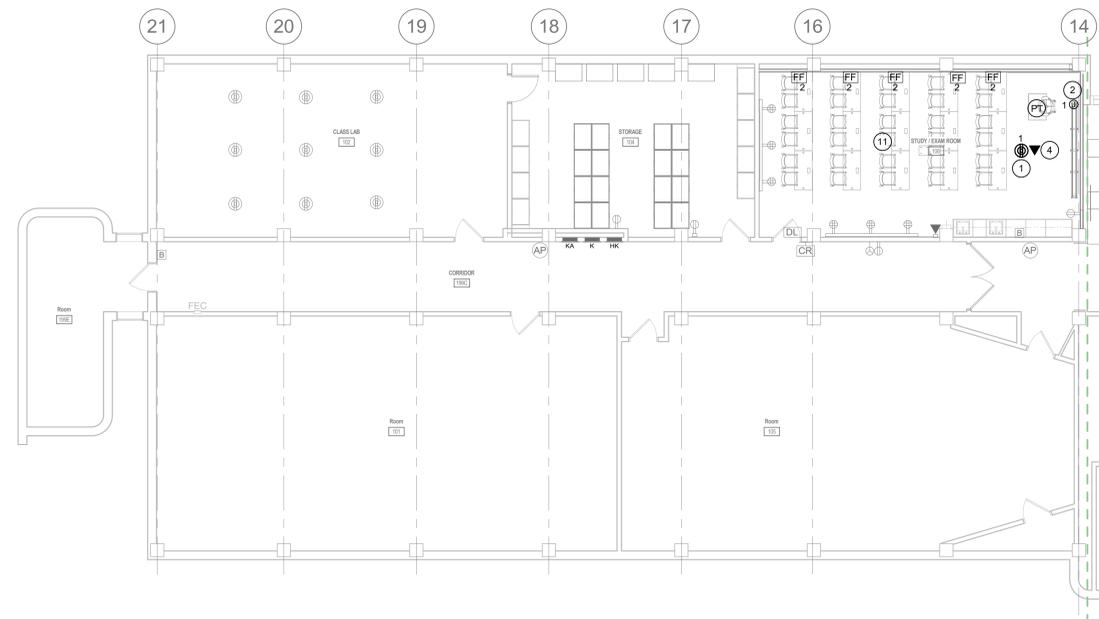
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ELECTRICAL
DEMOLITION PLANS -
FIRST FLOOR

ED101

- GENERAL POWER NOTES**
- A REFER TO ELECTRICAL SYMBOLS AND ABBREVIATIONS SHEET E-001 FOR ADDITIONAL INFORMATION.
 - B PROVIDE A GEAR SUBMITTAL FOR GENERAL APPROVAL PRIOR TO CONDUCTING STUDIES. IMPLEMENT RECOMMENDATIONS TO ELECTRICAL GEAR FOR FINAL APPROVAL AFTER STUDIES ARE COMPLETED AND APPROVED.
 - C COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECT AND INTERIOR DESIGNER.
 - D PROVIDE LABELS ON ALL EQUIPMENT MODIFIED BY THIS PROJECT. PROVIDE LABELS ON ALL JUNCTION BOXES AND CONDUITS MODIFIED OR PROVIDED BY THIS PROJECT. PROVIDE UPDATED PANELBOARD DIRECTORIES ON ALL PANELBOARDS MODIFIED BY THIS PROJECT.
 - E TELECOMMUNICATIONS OUTLETS SHOWN ON PLAN ARE ROUGH-INS ONLY. CABLING BY OWNER.
 - F NOT ALL PLAN NOTES ARE USED ON THIS SHEET.

- POWER PLAN NOTES**
- 1 PROVIDE RECEPTACLE FOR CEILING MOUNTED PROJECTOR. CEILING MOUNTED PROJECTOR BY DIVISION 11. COORDINATE LOCATION. CONNECT TO CEILING MOUNTED PROJECTOR SCREEN CIRCUIT.
 - 2 PROVIDE POWER CONNECTION FOR CEILING MOUNTED PROJECTOR SCREEN. CEILING MOUNTED PROJECTOR SCREEN BY DIVISION 11. PROJECTOR SCREEN CONTROLS AND INSTALLATION BY DIVISION 11. COORDINATE LOCATION. CONNECT TO CEILING MOUNTED PROJECTOR CIRCUIT.
 - 3 NUMBER BY ROOM TAG IS CIRCUIT GROUP. CONNECT ALL RECEPTACLES IN ROOM TO THIS CIRCUIT GROUP IN PANELBOARD G.
 - 4 PROVIDE PATHWAY FOR TWO HORIZONTAL CABLES BACK TO CABLE TRAY OR TELECOM ROOM. HORIZONTAL CABLES BY OWNER.
 - 5 PROVIDE DUAL CHANNEL RACEWAY. COORDINATE MOUNTING OF DUAL CHANNEL RACEWAY WITH ARCHITECT.
 - 6 PROVIDE FACEPLATE AND JACK WITH PATHWAY BACK TO CABLE TRAY OR TELECOM ROOM. COORDINATE FACEPLATE AND JACK WITH UITS.
 - 7 PROVIDE 208Y/120V FEEDER EXTENSION TO PANELBOARD. PROVIDE 208Y/120V CIRCUIT EXTENSIONS TO PANELBOARD.
 - 8 PROVIDE 480Y/277V FEEDER EXTENSION TO PANELBOARD. PROVIDE 480Y/277V CIRCUIT EXTENSIONS TO PANELBOARD.
 - 9 CONNECT TO SPARE 20A/1P CIRCUIT IN PANELBOARD INDICATED.
 - 10 PROVIDE 20A/1P CIRCUIT BREAKER IN PANELBOARD J OR J2. MATCH KAIC RATING OF PANELBOARD.
 - 11 PROVIDE 20A/1P CIRCUIT BREAKER IN PANELBOARD K OR KA FOR QUANTITY OF CIRCUITS NEAR ELECTRICAL DEVICE. MATCH KAIC RATING OF PANELBOARD.
 - 12 PROVIDE POWER FOR FLUSH VALVE. FLUSH VALVE POWER SUPPLY BY DIVISION 22.
 - 13 PROVIDE PATHWAY FOR FOUR HORIZONTAL CABLES BACK TO CABLE TRAY OR TELECOM ROOM. HORIZONTAL CABLES BY OWNER.
 - 14 NUMBER BY ROOM TAG IS CIRCUIT NUMBER. CONNECT ALL RECEPTACLES IN ROOM TO THIS CIRCUIT.
 - 15 PROVIDE TWO HORIZONTAL CABLING FOR CEILING MOUNTED CAMERA. COORDINATE CAMERA LOCATION WITH MONITOR AND COVERAGE. CAMERA BY UITS.



2 ELECTRICAL POWER FIRST FLOOR PLAN - AREA A
1/8" = 1'-0"



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1/8" = 1'-0"

**ELECTRICAL POWER
PLANS - FIRST FLOOR**

EP101

