

ADDENDUM NO. 01

Issued: 12.08.23

Project: Ridgeview Elementary School
701 Thornton Street, Liberty, Missouri 64068

Project No. 23026

Owner: Liberty Public Schools
8 Victory Lane
Liberty, MO 64068

Bidding Documents Issued: 11.30.23

This Addendum includes these 2 page[s] and the following attachments:

Project Manual:

Reissued Section 000105 "Certifications Page" consisting of 2 pages.
Reissued Section 000110 "Table of Contents" consisting of 4 pages.
Reissued Section 087100 "Door Hardware" consisting of 10 pages.

Drawings:

Revised Architectural Sheets: A001, DA120, DA121, A120, A121, A121a, A121b, A121c
Refer to Henderson Engineers, MEP Addendum No. 1
Added Technology drawings missing from bid set



PROJECT MANUAL REVISIONS

A1 SECTION 000005 – CERTIFICATIONS PAGE

- A1.1 REPLACE existing Section 000005 “Certifications Page” with the attached revised Section 000005 “Certifications Page”, dated December 08, 2023.

A2 SECTION 000110 - TABLE OF CONTENTS

- A2.1 REPLACE existing Section 000110 “Table of Contents” with the attached revised Section 000110 “Table of Contents”, dated December 08, 2023.

A3 SECTION 087100– DOOR HARDWARE

- A3.1 REPLACE existing Section 087100 “Door Hardware” with the attached revised Section 087100 “Door Hardware,” December 08, 2023.

DRAWINGS REVISIONS

A4 SHEET DA120– DEMOLITION REFLECTED CEILING PLAN – OVERALL LEVEL 1

- A4.1 REVISED location of ACT removal scope of work for mechanical scope

A5 SHEET DA121 – DEMOLITION REFLECTED CEILING PLAN – OVERALL LEVEL 2

- A5.1 REVISED location of ACT removal scope of work for mechanical scope

A6 SHEET A001 – GENERAL ARCHITECTURAL INFORMATION

- A6.1 REVISED Detail P7 Door Type E10 to read keynote 08 41 13 .A11

A7 SHEET A120 – REFLECTED CEILING PLAN – OVERALL – LEVEL 1

- A7.1 REVISED location of new CLG1 scope of work for mechanical scope

A8 SHEET A121 REFLECTED CEILING PLAN – OVERALL – LEVEL 2

- A8.1 REVISED location of new CLG1 scope of work for mechanical scope

A9 SHEET A121A REFLECTED CEILING PLAN – OVERALL – AREA A

- A9.1 REVISED location of new CLG1 scope of work for mechanical scope

A10 SHEET A121B REFLECTED CEILING PLAN – OVERALL – AREA B

- A10.1 REVISED location of new CLG1 scope of work for mechanical scope

A11 SHEET A121C REFLECTED CEILING PLAN – OVERALL – AREA C

- A11.1 REVISED location of new CLG1 scope of work for mechanical scope

M1 REFERENCE ATTACHED MEP ADDENDUM NO. 1

E1 REFERENCE ATTACHED MEP ADDENDUM NO. 1

P1 REFERENCE ATTACHED MEP ADDENDUM NO. 1

END OF ADDENDUM NO. 1



HENDERSON
ENGINEERS

ADDENDUM NO 01

December 8, 2023

ISSUED BY

Henderson Engineers, Inc.
8345 Lenexa Dr.
Lenexa, KS 66214

ISSUED FOR

Hollis + Miller
1828 Walnut Street Suite 922
Kansas City, MO 64108

NOTICE TO ALL BIDDERS FOR THE

Liberty Public Schools Ridgeview Elementary School

You are instructed to read and to note the following described changes, corrections, clarifications, omissions, deletions, additions, approvals, and statements pertinent to the Contract Bid and Construction Documents.

This addendum is part of the Contract Bid and Construction Documents and shall govern in the performance of the Work.

DRAWINGS

MECHANICAL

1. Sheet M-101A – HVAC LEVEL 1 PLAN – AREA A
 - A. Revised ductwork and diffuser layout for DOAS unit.
 - B. Added plan note M40.
2. Sheet M-101B – HVAC LEVEL 1 PLAN – AREA B
 - A. Revised ductwork and diffuser layout for DOAS unit.
3. Sheet M-101C – HVAC LEVEL 1 PLAN – AREA C
 - A. Revised ductwork and diffuser layout for DOAS unit.
 - B. Added plan note M40.
4. Sheet M-102A – HVAC LEVEL 2 PLAN – AREA A
 - A. Revised ductwork and diffuser layout for DOAS unit.
 - B. Added plan note M40.
5. Sheet M-102B – HVAC LEVEL 2 PLAN – AREA B
 - A. Revised ductwork and diffuser layout for DOAS unit.
6. Sheet M-102C – HVAC LEVEL 2 PLAN – AREA C
 - A. Revised ductwork and diffuser layout for DOAS unit.
 - B. Added plan note M40.
7. Sheet M-400 – MECHANICAL SCHEDULES
 - A. Added Schedule Note H. to Grille, Register, and Diffuser Schedule for SD-1.
 - B. Added EG-2 and EG-3 to Grille, Register, and Diffuser Schedule.

SECTION 000105 - CERTIFICATIONS PAGE

ARCHITECT

I HEREBY, PURSUANT TO RSMO 327.411, STATE THAT THE SPECIFICATIONS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO SPECIFICATIONS LISTED BELOW:

DIVISION 1 SECTIONS: 011000, 012100, 012200, 012300, 012500, 013100, 013200, 013233, 013300, 014000, 014200, 014529, 016000, 017310, 017419, 017419, 017700, 017823, 017839, 017900.
DIVISION 2 SECTION: 024119.
DIVISION 6 SECTIONS: 061000, 061600, 064023.
DIVISION 7 SECTIONS: 072500, 076200, 078413, 078446, 079200.
DIVISION 8 SECTIONS: 081113, 081416, 083113, 084113, 085613, **087100**, 088000.
DIVISION 9 SECTIONS: 092116, 092900, 093000, 095113, 096513, 096519, 096723, 096813, 099123, 099600.
DIVISION 10 SECTIONS: 101423, 102113, 102123, 102600, 102800.
DIVISION 12 SECTIONS: 123200, 123666.

I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER SPECIFICATIONS, DRAWINGS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

KEVIN NELSON

DECEMBER 08, 2023

ARCHITECT

DATE



DECEMBER 8, 2023

DOCUMENT 000110 – TABLE OF CONTENTS

Project Name: Ridgeview Elementary School Renovations
Project No.: 23026
Site Address 701 Thornton Street, Liberty, Missouri 64068
City, State Zip Liberty, Missouri 64068

Revisions	Date
ADD01	12.08.2023

Latest Revision Original Issue

INTRODUCTORY INFORMATION

000101	Project Team Directory		11.22.2023
000105	Certifications and Seals	12.08.2023	11.22.2023
000110	Table of Contents	12.08.2023	11.22.2023

BIDDING REQUIREMENTS

(Refer to Construction Manager's Front End Manual for additional Bidding Requirements)

DIVISION 1 – GENERAL REQUIREMENTS

011000	Summary		11.22.2023
012100	Allowances		11.22.2023
012200	Unit Prices		11.22.2023
012300	Alternates		11.22.2023
012500.1	Substitution Procedures		11.22.2023
012500.2	Substitution Procedures Form		11.22.2023
013100	Project Management and Coordination		11.22.2023
013200	Construction Progress Documentation		11.22.2023
013233	Photographic Documentation		11.22.2023
013300	Submittal Procedures		11.22.2023
014000	Quality Requirements		11.22.2023
014200	References		11.22.2023
014529	Testing and Inspections		11.22.2023
016000	Product Requirements		11.22.2023
017310	Cutting and Patching		11.22.2023
017419	Construction Waste Management and Disposal		11.22.2023
017700	Closeout Procedures		11.22.2023
017823	Operation and Maintenance Data		11.22.2023
017839	Project Record Documents		11.22.2023
017900	Demonstration and Training		11.22.2023

DIVISION 2 – EXISTING CONDITIONS

024119	Selective Demolition		11.22.2023
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DIVISION 3 – CONCRETE

033000	Cast-in-Place Concrete		11.22.2023
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DIVISION 4 - MASONRY

042200	Concrete Unit Masonry		11.22.2023
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DIVISION 5 - METALS

051200	Structural Steel Framing		11.22.2023
053100	Steel Decking		11.22.2023
054000	Cold-Formed Metal Framing		11.22.2023

DIVISION 6 – WOOD AND PLASTICS

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061600	Sheathing	11.22.2023
064023	Interior Architectural Woodwork	11.22.2023

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

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076200	Sheet Metal Flashing and Trim	11.22.2023
078413	Penetration Firestopping	11.22.2023
078446	Fire Resistive Joint Systems	11.22.2023
079200	Joint Sealants	11.22.2023

DIVISION 8 - DOORS AND WINDOWS

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081416	Flush Wood Doors	11.22.2023
083113	Access Doors and Frames	11.22.2023
084113	Aluminum Framed Entrances and Storefronts	11.22.2023
085613	Transom Windows	11.22.2023
087100	Door Hardware	12.08.2023
088000	Glazing	11.22.2023

DIVISION 9 - FINISHES

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092900	Gypsum Board	11.22.2023
093000	Tiling	11.22.2023
095113	Acoustical Panel Ceilings	11.22.2023
096513	Resilient Base and Accessories	11.22.2023
096519	Resilient Tile Flooring	11.22.2023
096723	Resinous Flooring	11.22.2023
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099123	Interior Painting	11.22.2023
099600	High-Performance Coatings	11.22.2023

DIVISION 10 – SPECIALTIES

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102113	Toilet Compartments	11.22.2023
102123	Cubicle Curtains and Track	11.22.2023
102600	Wall and Door Protection	11.22.2023
102800	Toilet, Bath & Laundry Accessories	11.22.2023

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220500	Common Work Results for Plumbing	11.22.2023
220515	Basic Piping Materials and Methods	11.22.2023
220523	General Duty Valves for Plumbing Piping	11.22.2023
220529	Hangers and Supports for Plumbing Piping	11.22.2023
220553	Identification for Plumbing Piping and Equipment	11.22.2023
220700	Plumbing Insulation	11.22.2023

	Latest Revision	Original Issue
221100	Water Distribution Piping and Specialties	11.22.2023
221111	Mechanically Joined Plumbing Piping Systems	11.22.2023
221300	Sanitary Drainage and Vent Piping Specialties	11.22.2023
224000	Plumbing Fixtures	11.22.2023
227000	Natural Gas Systems	11.22.2023
227010	Mechanically Joined Natural Gas Piping Systems	11.22.2023

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING

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230015	Electrical Coordination for Mechanical Equipment	11.22.2023
230500	Common Work Results for HVAC	11.22.2023
230510	Basic Piping Materials and Methods	11.22.2023
230513	Common Motor Requirements for HVAC Equipment	11.22.2023
230514	Variable Frequency Drives	11.22.2023
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230593	Testing, Adjusting, and Balancing for HVAC	11.22.2023
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230913	Instrumentation and Control Devices for HVAC	11.22.2023
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233423	HVAC Power Ventilators	11.22.2023
233713	Diffusers, Registers, and Grilles	11.22.2023
237313	Central-Station Air Handling Units	11.22.2023
237433	Dedicated Outdoor-Air Units	11.22.2023
238200	Terminal Heating & Cooling	11.22.2023

DIVISION 26 - ELECTRICAL

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260500	Common Work Results for Electrical	11.22.2023
260502	Equipment Wiring Systems	11.22.2023
260504	Provisions for Electrical Utility Service	11.22.2023
260519	Low-Voltage Electrical Power Conductors and Cables	11.22.2023
260526	Grounding and Bonding for Electrical Systems	11.22.2023
260529	Hangers and Supports for Electrical Systems	11.22.2023
260533	Raceway and Boxes for Electrical Systems	11.22.2023
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262726	Wiring Devices	11.22.2023
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265100	Interior Lighting	11.22.2023

DIVISION 27 – COMMUNICATIONS

270010	General Communications Requirements	11.22.2023
270500	Common Work Results for Communications	11.22.2023

		Latest Revision	Original Issue
271000	Structured Cabling System		11.22.2023
271100	Telecommunications Equipment Room Fittings		11.22.2023
271500	Communications Horizontal Cabling		11.22.2023
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DIVISION 28 - ELECTRONIC ACCESS CONTROL AND INTRUSION DETECTION			
280010	General Electronic Safety and Security Requirements		11.22.2023
280501	Common Work Results for Electronic Security		11.22.2023
281000	Electronic Security Systems		11.22.2023
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284600	Fire Detection and Alarm		11.22.2023

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SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

- A. Intent: The intent of this Section is to provide finish hardware for the proper operation and control of all wood, hollow metal and aluminum doors in the Project. Prior to bidding, notify the Architect of any doors that do not have hardware meeting this intention.
- B. This Section includes items known commercially as finish or door hardware that are required for swinging doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed. This Section includes, but is not necessarily limited to furnishing and installing complete, the following:
 - 1. Finish hardware for proper operation and control of all wood, aluminum and hollow metal doors, including hinges, locks and latch sets, closers, panic devices, auto-flushbolts, electric strikes, magnetic holders, removable mullions, cylinders, keys, miscellaneous stops, flat goods, weatherstripping and thresholds as required.
 - 2. Cylinder for access doors where specified.
- C. Related work in other sections:
 - 1. Hollow metal doors, frames and silencers: Section 081113.
 - 2. Wood doors: Section 081416.
 - 3. Aluminum doors: Section 084113.

1.2 DEFINITIONS

- A. "Finish Hardware" includes items known commercially as finish hardware which are required for swing, and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame.

1.3 ACTION SUBMITTALS

- A. Product Data: Submit manufacturers technical product data for each hardware item. Include information necessary to show compliance with requirements and include instructions for installation and for maintenance of operating parts and finishes.
 - 1. Manufacturer shall submit written certification confirming closers compliance with U.L. 10C.
- B. Hardware Schedule: Submit a hardware schedule in a vertical format (horizontal format not acceptable), organized into sets, including the information below. Designations for door numbers and hardware sets in the schedule shall match those used in the Construction Documents for each opening.
 - 1. Hardware Schedule shall be coordinated with doors, frames, and related work to ensure proper size, thickness, hand function, and finish of door hardware.
 - 2. Catalog cuts of each type of exposed hardware unit, highlighted in color to indicate compliance with the Hardware Schedule.
 - 3. Type, style, function, size and finish of each hardware item.
 - 4. Name and manufacturer of each item.
 - 5. Fastenings and other pertinent information.
 - 6. Explanation of all abbreviations, symbols, codes, etc., contained in schedule.
 - 7. Mounting locations for hardware.
 - 8. Door and frame sizes and materials.
 - 9. Deviations from Specifications shall be noted in cover letter.
- C. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.
- D. Keying Schedule: Submit separate detailed schedule, at the same time as the Hardware Schedule, indicating keying for all locks and how Owner's instructions, on keying of locks has been fulfilled. Keying schedule must be approved before ordering any locks.

- E. Pinning Transcript: Submit detailed schedule indicating each lock cylinder and core.
- F. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.

1.4 QUALITY ASSURANCE

- A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.
- B. Product/Material Qualifications: Manufacturer's product numbers are indicated for convenience in identifying finish hardware items. Unless otherwise indicated, manufacturer's description for indicated product number constitutes minimum standards of quality, design, function and performance required for each item to be incorporated into the Project.
 - 1. It will be the responsibility of the Bidder to furnish with his Bid a list clarifying any deviations from these specifications written or implied, in order that a fair and proper evaluation be made. Those Bidders not submitting a list of deviations will be presumed to have Bid as specified.
- C. Supplier Qualifications: A recognized Architectural Finish Hardware Supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years. Supplier shall be or employ an experienced Architectural Hardware Consultant (AHC) who is certified by and member of the Door and Hardware Institute. The Architectural Hardware Consultant shall be available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.
 - 1. Supplier shall meet with the Owner to finalize keying requirements and obtain final instructions in writing.
- D. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Pamphlets No. 80, No. 101 and of authorities having jurisdiction requirements. Provide only hardware which has been tested and listed by UL, FM or Warnock Hersey for types and sizes of doors required and complies with requirements of door and door frame labels.
 - 1. Where emergency exit devices are required on fire-rated doors, (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL or FM label on exit devices indicating "Fire Exit Hardware".
- E. Standards: Comply with the requirements of the latest edition of the following standards, unless indicated otherwise:
 - 1. American National Standards Institute (ANSI) Publications:
 - 1. A115 Series - Door and Frame Preparation.
 - 2. A156 Series - Hardware.
 - 2. Builders Hardware Manufacturers Association (BHMA) Publications:
 - 1. 1201 - Auxiliary Hardware.
 - 2. 1301 - Materials and Finishes.
 - 3. Door and Hardware Institute (DHI) Publications:
 - 1. Keying - Procedures, Systems, and Nomenclature.
 - 2. Abbreviations and Symbols.
 - 3. Hardware for Labeled Fire Doors.
 - 4. Recommended Locations for Builder's Hardware for Standard and Custom Steel Doors and Frames.
 - 5. Wood Door Standards W1, W2, WDHS-2, WDHS-3.
 - 4. National Fire Protection Association (NFPA) Publications:
 - 1. NFPA Pamphlet No. 80 - Standards for Fire Doors and Windows.
 - 5. International Building Code - current edition adopted.
 - 6. Americans with Disabilities Act (ADA).
- F. Keying Conference: Conduct conference in accordance with Section 013100. In addition to Owner, Construction Manager, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 - 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.

G. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Section 013100 as follows:

1. Architectural Finish Hardware supplier (AFHS) shall conduct the preinstallation conference at the site. The AFHS shall instruct finish hardware installer on proper installation, adjustment and troubleshooting for each operable item of finish hardware specified. The AFHS shall observe the installation and adjustment of the first three locksets, closers and exit devices.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Package each hardware item in separate containers with all screws, wrenches, installation instructions and installation templates. Mark or tag each box with hardware heading and door number according to approved hardware schedule.
- B. Packaging of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.
- C. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation. Provide a complete packing list showing items, door numbers and hardware headings with each shipment.
- D. Store hardware in shipping cartons above ground and under cover to prevent damage.
 1. Provide secure lockup for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.
- E. Aluminum Door Hardware: If required by door manufacturer deliver hardware for aluminum doors as directed by the door supplier for factory installation.

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control system, security system, and building control system, as applicable.

1.7 MAINTENANCE

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

PART 2 - PRODUCTS

2.1 HARDWARE - GENERAL

- A. Provide the materials or products indicated by trade names, manufacturer's name, or catalog number.
- B. Provide manufacturer's standard products meeting the design intent of this Specifications, free of imperfections affecting appearance or serviceability.
 1. Base Metals: Produce hardware units of basic metal and forming method indicated using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units for finish designations indicated.

2. Provide hardware complete with all fasteners, anchors, instructions, layout templates, and any specialized tools as required for satisfactory installation and adjustment.
 3. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
 4. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated or approved. Finish screws exposed under any condition to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as
 5. Finish all other hardware in accordance with the BHMA finish as follows, unless otherwise indicated in manufacturers screws to secure hardware.
 6. Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work, except where indicated otherwise or where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex bolt fasteners.
 7. Provide factory pinned cylinders and cores.
- C. Hardware is specified in the hardware schedule by set, type, and functions which have been selected as best meeting the application requirements. Acceptable products for each category are specified under PART 2 of this Specification.

2.2 SPECIAL REQUIREMENTS

- A. Hinges:
1. Provide non-removable pins for all exterior doors and out-swinging corridor doors. Use nonrising pins for all other doors.
 2. Pre-drill pilot holes for hinge fasteners at factory to suit hinge type.
 3. Provide continuous hinges where specified.
- B. Locksets:
1. Locksets shall meet or exceed ANSI A156.13-94, Grade 1 requirements.
- C. Panic Devices:
1. All panic devices shall have touchbars made of stainless steel, provide devices in stainless finish where specified.
 2. All latchbolts are to be deadlatching.
 3. Panic devices shall be through-bolted, using sex bolt fasteners.
 4. Exit devices are to incorporate a flush and tapered end cap.
 5. Hardware mullions are to be of the same manufacturer as the panic device. Provide keyed mullions unless otherwise specified. Provide mullion storage kits where specified.
 6. Except on fire-rated doors, or unless specified otherwise, provide panic devices with hex key dogging device to hold latch bolt open on doors with closers.
 7. Devices incorporating plastic dogging components will not be allowed.
 8. Provide electrical options as specified.
- D. Closers:
1. Comply with manufacturer's recommendations for unit size based on door size, weather exposure and usage.
 2. Through-bolt all closer units, using sex bolt fasteners.
 3. Provide parallel arms for all overhead closers, except as otherwise indicated.
 4. All surface closers shall exceed ANSI A156.4 Grade 1 requirements in all aspects as called for below. All closers shall have certification by an independent testing laboratory of 10,000,000 cycles without failure. Provide special rust inhibitive primer (SRI) where specified.
 5. Furnish all brackets, drop plates and any other necessary hardware required to insure proper installation.
- E. Stops
1. Provide heavy duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide overhead stop for interior doors that swing more than opens against equipment, casework, sidelights, and where conditions do not allow wall stop.
- F. Thresholds and Gasketing
1. Provide thresholds, weatherstripping (including door sweeps, seals, astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.

2. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
3. Gasketing and astragals on aluminum frames by door manufacturer.

G. Silencers

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

2.3 KEYING

- A. Standard Lock Cylinders: BHMA A156.5; Grade 1 cylinders; face finished to match lockset.
- B. Key all locks separately, or alike, as directed by the Owner's representative and Architect. Provide keys as follows:
 1. Change Keys: Two (2) per lock.
 2. Master Keys: Six (6) required (per system).
- C. Existing Key System: Key cylinders to Owners existing master key system.
- D. All exterior doors to be keyed to Schlage Primus, interior doors to match existing keyway.
- E. Provide Schlage cylinders with large format interchangeable construction cores on all exterior openings.

2.4 KEY CONTROL SYSTEM

- A. Fire Department Access Boxes:
 1. Provide key lock boxes designed for storage of 2-5 keys. Manufactured by Knox Company or equal.
 2. Provide one lock box at exterior and provide one near elevators, if applicable.
 3. Locate in accordance with architectural detail. Where not specifically indicated, locate as directed by Architect.
 4. Provide surface mounted or recessed based on direction from Architect.

2.5 HARDWARE FINISHES

- A. Provide matching finishes for hardware units at each door to the greatest extent possible, unless otherwise indicated. In general, match items to the finish for the latch, lock or push-pull unit for color and texture.
 1. Product description or schedule:
 - 1) 626 satin chrome-plated.
 - 2) 630 satin stainless steel.

2.6 HARDWARE PRODUCTS

- A. Hinges:
 1. Specified manufacturer: IVES Hardware; an Allegion Company.
 2. Acceptable substitutions:
 1. Hager Companies.
 2. McKinney Products Company; an ASSA ABLOY Group company.
 3. Stanley Commercial Hardware; Div. of The Stanley Works.
- B. Continuous Gear-Type Hinges:
 1. Specified manufacturer: IVES Hardware; an Allegion Company.
 2. Acceptable substitutions:
 1. Hager Companies.
 2. McKinney Products Company; an ASSA ABLOY Group company.
 3. Select Products Limited.
- C. Locksets:
 1. Specified manufacturer: Schlage Commercial Lock Division; an Allegion Company.
 2. Substitutions: Not allowed. Products to match District standard.
- D. Exit Devices:
 1. Specified manufacturer: Von Duprin; an Allegion Company

2. Substitutions: Not allowed. Products to match District standard.
- E. Closers:
 1. Specified manufacturer: LCN Closers; an Allegion Company.
 2. Substitutions: Not allowed. Products to match District standard.
- F. Flatgoods:
 1. Specified manufacturer: Ives Hardware; an Allegion Company.
 2. Acceptable substitutions:
 1. Burns.
 2. Rockwood.
- G. Stops:
 1. Specified manufacturer: Ives Hardware; an Allegion Company.
 2. Acceptable substitutions:
 1. Burns Manufacturing Incorporated.
 2. Hager Companies.
 3. Rockwood Manufacturing Company.
 4. Trimco
- H. Overhead stops:
 1. Specified manufacturer: Glynn-Johnson; an Allegion Company.
 2. Acceptable substitutions:
 1. Architectural Builders Hardware Mfg., Inc.
 2. Door Controls International.
 3. Ives Hardware; an Allegion Company.
 4. Rixson Specialty Door Controls; an ASSA ABLOY Group.
- I. Thresholds:
 1. Specified manufacturer: Zero International
 2. Acceptable substitutions:
 1. Pemko Manufacturing Co.
 2. Reese Enterprises.
 3. National Guard Products.
- J. Door Gasketing/Weatherstripping:
 1. Specified manufacturer: Zero International
 2. Acceptable substitutions:
 1. Pemko Manufacturing Co.
 2. Reese Enterprises.
 3. National Guard Products.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Carefully inspect doors, frames, and conditions under which hardware will be installed. Notify the Architect of any conditions that would adversely affect the installation or subsequent door operations. Do not proceed until unsatisfactory conditions are corrected.
 1. Frames shall be verified, inspected, and confirmed by General Contractor as being plumb and true.
- B. Refer to Sections 081113, 081416, and 084113 for additional installation requirements.
- C. Prior to hardware installation, the Hardware Supplier shall meet with the Owner's Representative, Architect, and Hardware Installer to ensure the Installer has and understands the manufacturers' installation requirements for all hardware items.
 1. The Supplier shall observe the installation of the first lockset, closer and panic device.

3.2 INSTALLATION

- A. Mount Hardware units at heights indicated in respective DHI Standards, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.

- B. Install each hardware item in compliance with the manufacturer's instructions and written recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be field finished, coordinate removal, storage and reinstallation or application of surface protections with finishing work. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
 - 1. Special care shall be taken to avoid damaging surrounding surfaces.
- D. Provide fasteners and anchoring devices of suitable size, quantity, and type to secure hardware in proper position for heavy use and long life.
 - 1. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Adjust door closers immediately upon installation. Adjust in exact conformance with manufacturer's printed instructions. Advance backcheck to eliminate shock at dead stop. Set latching speed to assure unassisted positive latching.
 - 1. Degrees of swing of doors for self-limiting closers shall be maximum available.
- F. Install each protection plate with a thinly-spread spot of mastic at its center to assure even contact before fastening with screws. Install all such plates on visual centers of closed doors. Set bottom edges of all such plates flush with door bottom.
- G. Cut and fit thresholds to door frame profiles. Prepare thresholds for the attachment of strikes and clearance for spindles as required. Set thresholds in a continuously laid bed of polyisobutylene mastic sealant to completely fill voids and exclude moisture from every source.
- H. Seal weather protection components attached to the exterior sides of doors and frames, such as drip caps and weatherstripping, in place with clear silicone caulk in such a manner as to ensure a continuously filled seam throughout the joinery.
- I. Cut and fit weatherstripping accurately to provide the greatest possible continuity of the contact element. Adjust closer templating as required.
- J. At exterior doors, obtain satisfactory operation of the installation, then apply a thin layer of clear silicone caulk under hinge leaves, and outside lock trim. Remove excess caulk after torqueing fasteners.

3.3 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
 - 1. Clean adjacent surfaces soiled by hardware installation.
- B. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.4 INSTRUCTION AND INSPECTION

- A. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.
- B. After hardware is installed and adjusted, the Supplier shall inspect the job with the Architect and the Contractor to determine if the hardware is functioning properly.
 - 1. Maintain the instruction sheets, layout templates, and any supplementary literature regarding hardware in a readable condition. Transmit all such items to the Owner's Representative, together with all spare parts, specialized tools, other accessories supplied with the hardware, and a copy of the approved hardware schedule at the time of instruction.
- C. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative of the latch and lock manufacturer, shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult

with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units at no cost to the Owner. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

HARDWARE SETS

HARDWARE SET: 1

DOOR NUMBER:

1B201

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	EU STOREROOM LOCK	ND80LDEU RHO RX CON 12V/24V DC	626	SCH
1	EA	K-I-L CYLINDER	23-065	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30 SRT	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 SRT	689	LCN
1	EA	DOOR CONTACT	BY OWNER	BLK	SCE
1	EA	POWER SUPPLY	BY OWNER		
1		CARD READER	BY ACCESS CONTROL PROVIDER		

OPERATION: DOOR NORMALLY CLOSED AND LOCKED. ACCESS VIA VALID CARD READ OR REMOTE RELEASE AT DESK. ALWAYS FREE EGRESS.

HARDWARE SET: 2

DOOR NUMBER:

1B221A

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80LD RHO	626	SCH
1	EA	K-I-L CYLINDER	23-065	626	SCH
1	EA	OH STOP	90S (AT D-A111 ONLY)	630	GLY
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	BLK	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 3

DOOR NUMBER:

1B112

1B113

1B210

1B214

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	ND70LD RHO	626	SCH
1	EA	K-I-L CYLINDER	23-065	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	488SBK PSA	BK	ZER

HARDWARE SET: 4

DOOR NUMBER:

1B202 1B203 **1B204** 1B211

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50LD RHO	626	SCH
1	EA	K-I-L CYLINDER	23-065	626	SCH
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 5

DOOR NUMBER:

1B112A 1B206A 1B209

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	KEYED PRIVACY W/INDICATOR	L9056L 06A L583-363 L283-722	626	SCH
1	EA	MORTISE CYLINDER	20-001	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	488SBK PSA	BK	ZER

HARDWARE SET: 6 - NOT USED

HARDWARE SET: 7

DOOR NUMBER:

1B208

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	PRIVACY LOCK	ND40S RHO	626	SCH
		NOTE	REMAINDER OF HARDWARE EXISTING		

HARDWARE SET: 8

DOOR NUMBER:

1B206

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	ENTRANCE/OFFICE LOCK	ND50LD RHO	626	SCH
		NOTE	REMAINDER OF HARDWARE EXISTING		

DOOR/HARDWARE SET INDEX

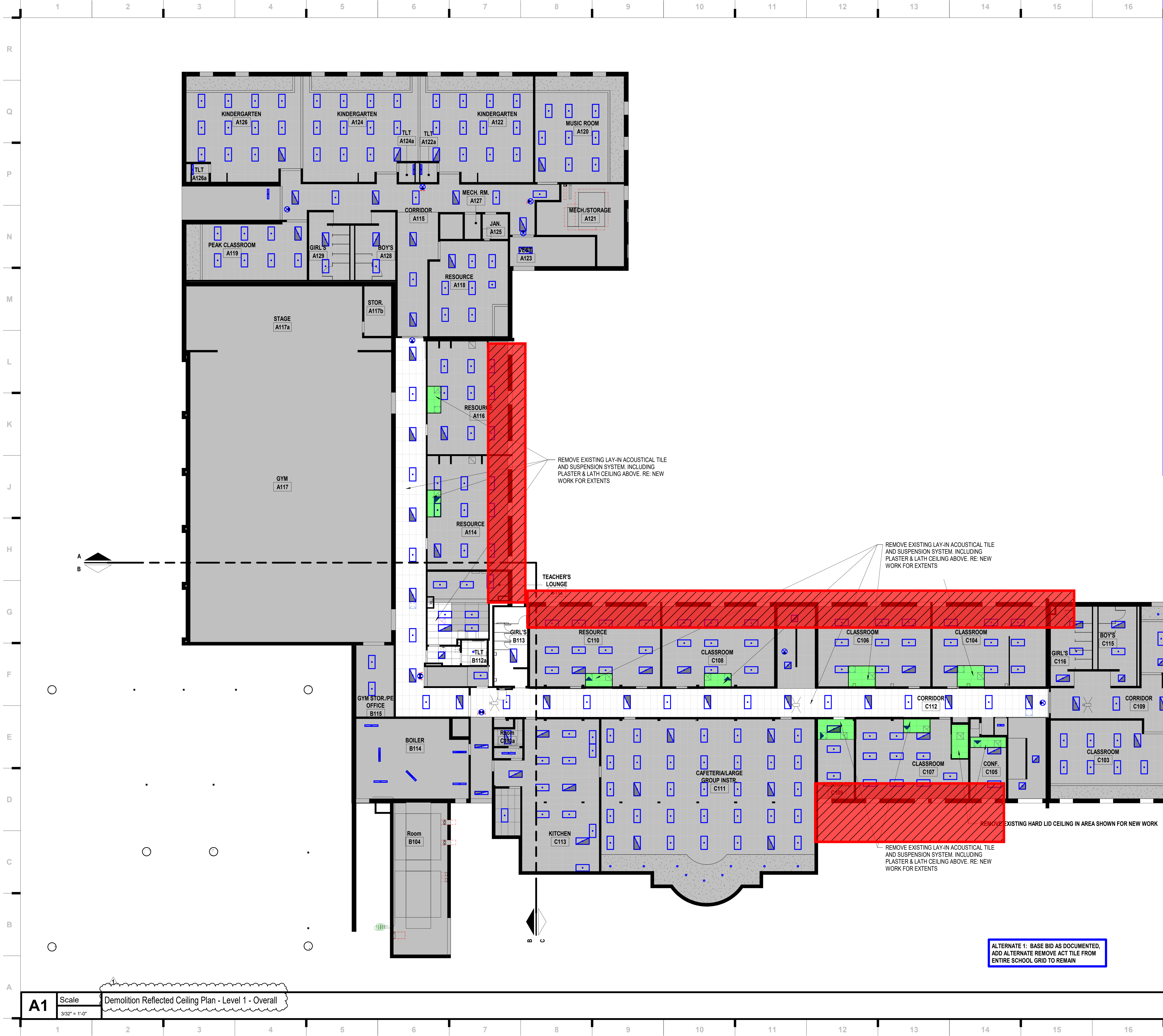
DOOR #	HwSet #
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1B112A	5
1B113	3
1B201	1
1B202	4
1B203	4

DOOR #	HwSet #
1B204	4
1B206	8
1B206A	5
1B208	7
1B209	5
1B210	3

DOOR #	HwSet #
1B211	4
1B214	3
1B221A	2

END OF SECTION 087100

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GENERAL DEMOLITION NOTES

- DEMOLITION INCLUDES THE REMOVAL OF EXISTING CONSTRUCTION WHICH CONFLICTS WITH WORK TO BE BUILT/INSTALLED IN NEW CONSTRUCTION. TRANSITIONS BETWEEN DEMOLITION AND EXISTING TO REMAIN TO BE CAREFULLY COORDINATED
- DASHED LINES INDICATE EXISTING CONSTRUCTION TO BE DEMOLISHED/REMOVED
- HALF-TONE SHADING INDICATES EXISTING CONSTRUCTION TO REMAIN
- EVERY DETAIL OF THE DEMOLITION WORK MAY NOT BE COVERED ON THESE DRAWINGS, BUT THE DEMOLITION CONTRACTOR SHALL COORDINATE WITH THE GC/CM TO ENSURE ALL REQUIRED ITEMS ARE REMOVED IN ORDER FOR NEW WORK TO BE COMPLETED
- IN AREAS SCHEDULED FOR DEMOLITION, ALL ACCESSORIES ATTACHED TO THE CEILINGS, FLOOR AND WALLS ARE TO BE REMOVED, INCLUDING BRACKETS, SCREWS, SIGNAGE, SURFACE MOUNTED ELECTRICAL AND TECHNOLOGY; REMOVE ALL WINDOW COVERINGS; MINI-BLINDS, ROLLER SHADES AND ALL BRACKETS
- THE OWNER WILL IDENTIFY ALL ITEMS TO BE SALVAGED PRIOR DEMOLITION STARTING. CONTRACTOR SHALL SALVAGE AND TURN OVER TO THE OWNER ALL EQUIPMENT IDENTIFIED. ALL REMAINING ITEMS SHALL BE REMOVED BY THE DEMOLITION CONTRACTOR
- DO NOT DISTURB SOIL UNDER EXISTING FOOTINGS AND/OR FLOOR SLABS NOTED TO REMAIN
- COORDINATE THE REMOVAL OF ALL PORTIONS OF LOAD BEARING ELEMENTS WITH THE STRUCTURAL ENGINEER PRIOR TO REMOVAL. PROVIDE TEMPORARY SHORING AS REQUIRED
- REFER TO MEP DEMOLITION SHEETS FOR EXISTING MECHANICAL, ELECTRICAL AND PLUMBING TO BE REMOVED

= Phase 2 Scope of Work
(Not included in this Bid Package)

SHEET NOTES

- REFER TO SHEET G000 FOR SHEET INDEX
- DO NOT SCALE THIS DRAWING
- INTERIOR DIMENSIONS ARE TO THE FOLLOWING, UNLESS NOTED OTHERWISE:
 - TO FACE OF STUD
 - TO FACE OF MASONRY UNIT
 - TO FACE OF DOOR AND WINDOW ROUGH OPENINGS
- COORDINATE LOCATIONS WHERE BACKING REQUIRED FOR TOILET ACCESSORIES
- HALF-TONE SHADING INDICATES EXISTING CONSTRUCTION TO REMAIN

= Demo/salvage and re-install existing ceiling grid, tile, & lights

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Missouri #E-556D
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Ridgeview Elementary School
Liberty Public Schools
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Liberty, MO 64068

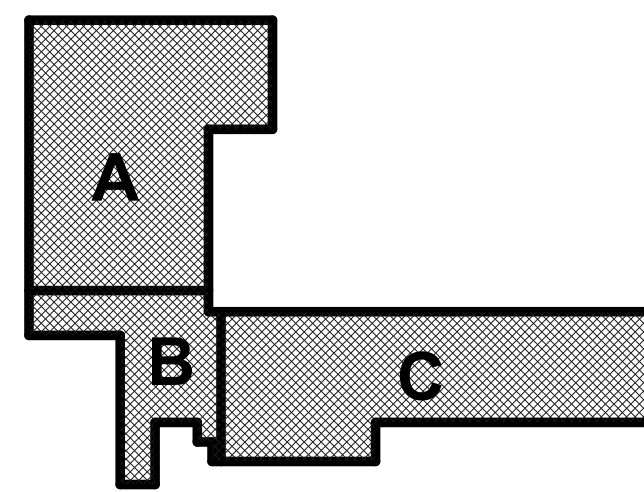
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1	Addendum 1	12.8.23



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DATE: 11.22.2023

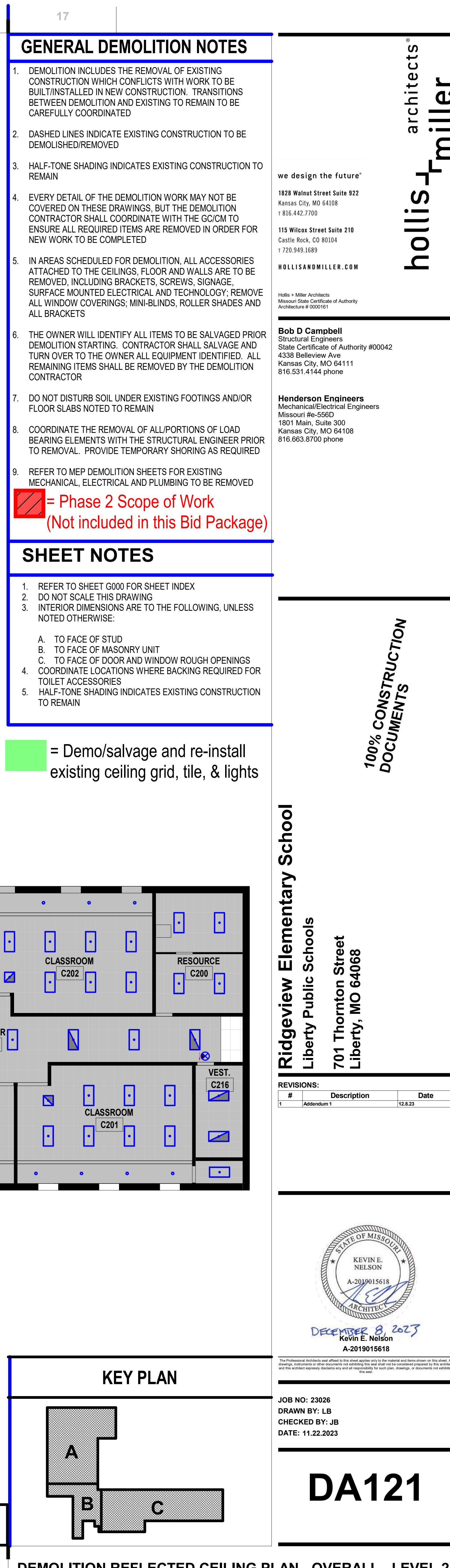
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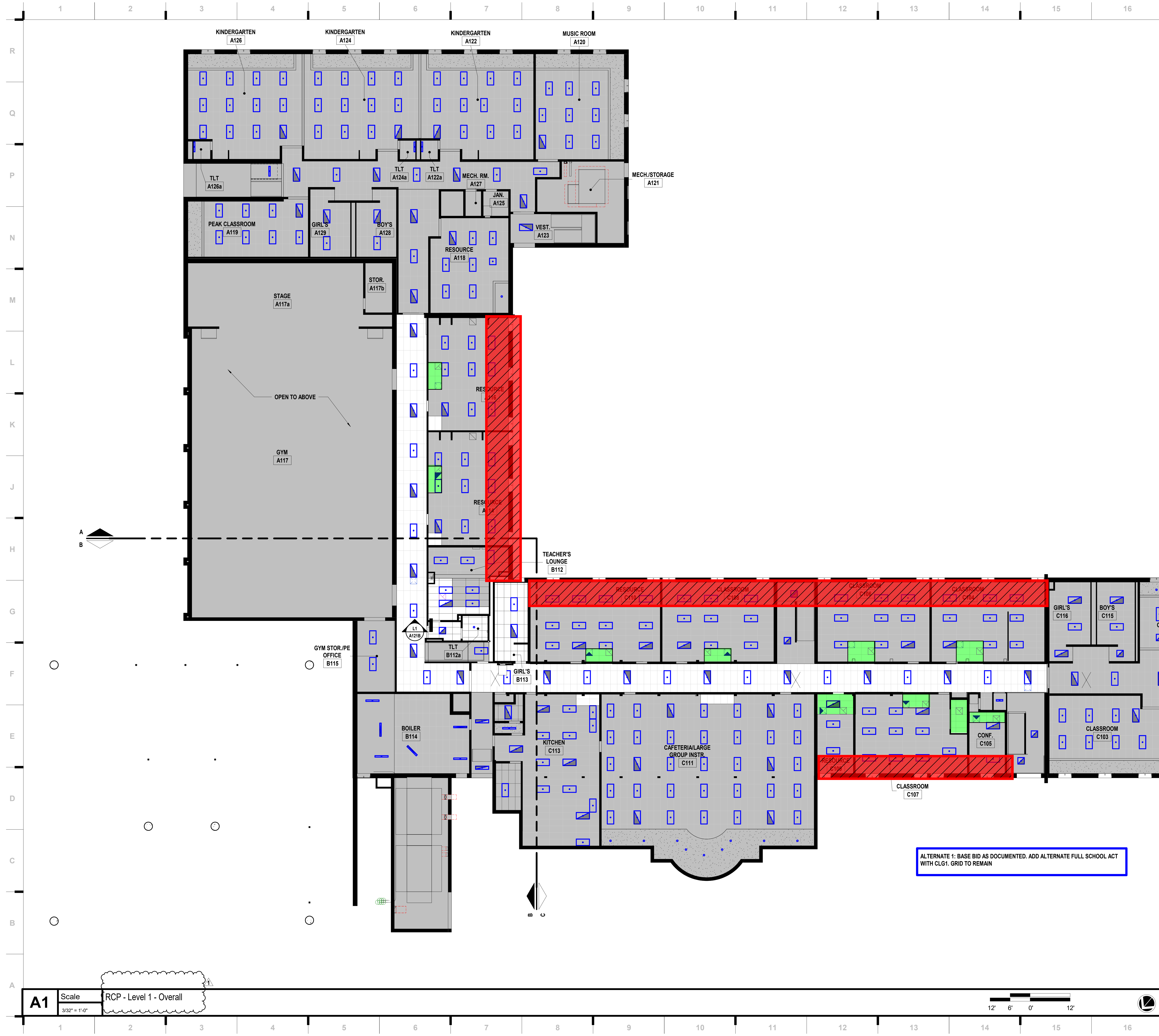
KEY PLAN



DEMOLITION REFLECTED CEILING PLAN - OVERALL - LEVEL 1

Please consider the environment before printing this.





SHEET NOTES

- REFER TO SHEET G000 FOR SHEET INDEX
- REFER TO MEP AND TECHNOLOGY SHEETS FOR SPECIFIC CEILING MOUNTED DEVICES
- ALL ACT GRID TO BE CENTERED IN ROOM UNLESS NOTED OTHERWISE
- HALF-TONE SHADING INDICATES EXISTING CONSTRUCTION TO REMAIN

= Phase 2 Scope of Work
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= Demo/salvage and re-install existing ceiling grid, tile, & lights

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#	Description	Date
1	Addendum 1	12.8.23

REVISIONS:

#	Description	Date
1	Addendum 1	12.8.23

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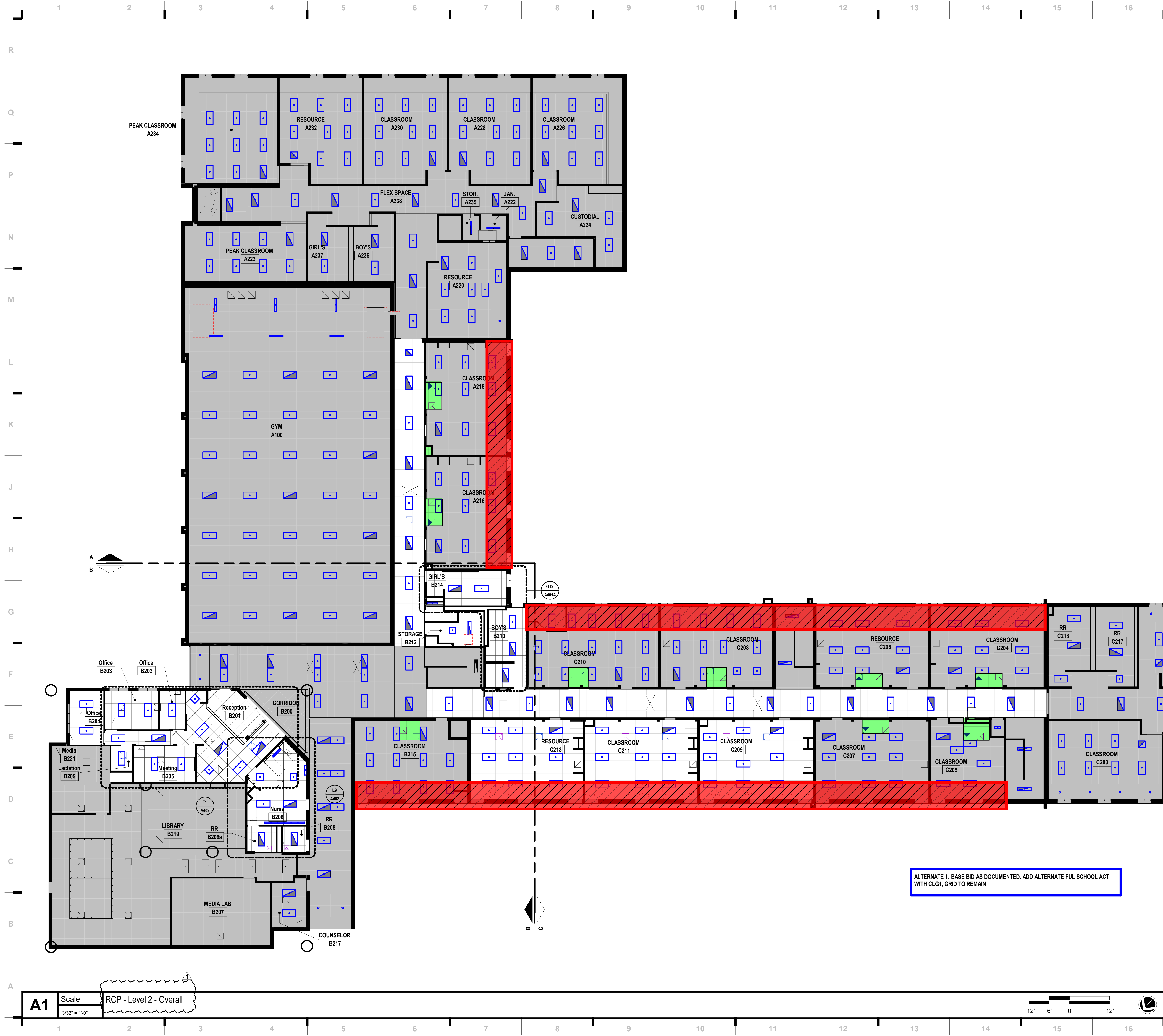
A120

KEY PLAN

REFLECTED CEILING PLAN - OVERALL - LEVEL 1


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SHEET NOTES

- REFER TO SHEET G000 FOR SHEET INDEX
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1	Amendment 1	12.23.23



DECEMBER 8, 2023
Kevin E. Nelson
A-2019015618

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A121

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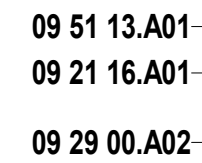
A121A

ID	MATERIAL	COLOR/FINISH
C1a	Carpet	Speak in Color Black 00500
C1b	Carpet	Precious Metal 40810
C1C	Carpet	
CLG1	Ceiling	WHITE (WH), 24X48
F1	Fabric	006 INHALE
FT2	Floor (Poured) Topping	MATCH EXISTING
HP1	High Performance Coating	SW 7636 ORIGAMI WHITE
P1	Paint	SW 7636 ORIGAMI WHITE
P1A	Paint	MATCH EXISTING COLOR
P2	Paint	SW 6246 NORTH STAR
RT1	VCT	51874, GRAYED BLUE
TR1	Trim	
TR2	Trim	3/4", MWCL75, ANODIZED ALUMINUM
WF1	Window Film	OPAQUE WHITE




The diagram shows a stepped profile. Region A is a shaded square at the top left. Region B is a white rectangular area directly below region A. Region C is a white rectangular area to the right of region B, forming a horizontal extension. The profile has several steps and changes in height and width.


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DATE: 11.22.2023



L1	Scale
	1 1/2" = 1'-0"

1. REFER TO SHEET G000 FOR SHEET INDEX
2. REFER TO MEP AND TECHNOLOGY SHEETS FOR SPECIFIC CEILING MOUNTED DEVICES
3. ALL ACT GRIDS TO BE CENTERED IN ROOM UNLESS NOTED OTHERWISE

 = Phase 2 Scope of Work
(Not included in this Bid Package)

 = Demo/salvage and re-install
existing ceiling grid, tile, & lights

ID	MATERIAL	COLOR/FINISH
C1a	Carpet	Speak in Color Black 0050
C1b	Carpet	Precious Metal 40810
C1C	Carpet	
CLG1	Ceiling	WHITE (WH), 24X48
F1	Fabric	006 INHALE
FT2	Floor (Poured) Topping	MATCH EXISTING
HP1	High Performance Coating	SW 7636 ORIGAMI WHITE
P1	Paint	SW 7636 ORIGAMI WHITE
P1A	Paint	MATCH EXISTING COLOR
P2	Paint	SW 6246 NORTH STAR
RT1	VCT	51874, GRAYED BLUE
TR1	Trim	
TR2	Trim	3/4", MWC175, ANODIZED ALUMINUM
WF1	Window Film	OPAQUE WHITE

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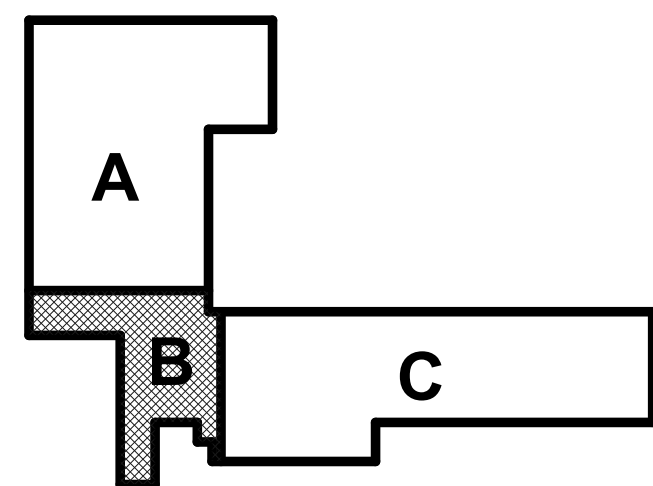
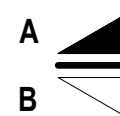
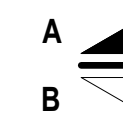
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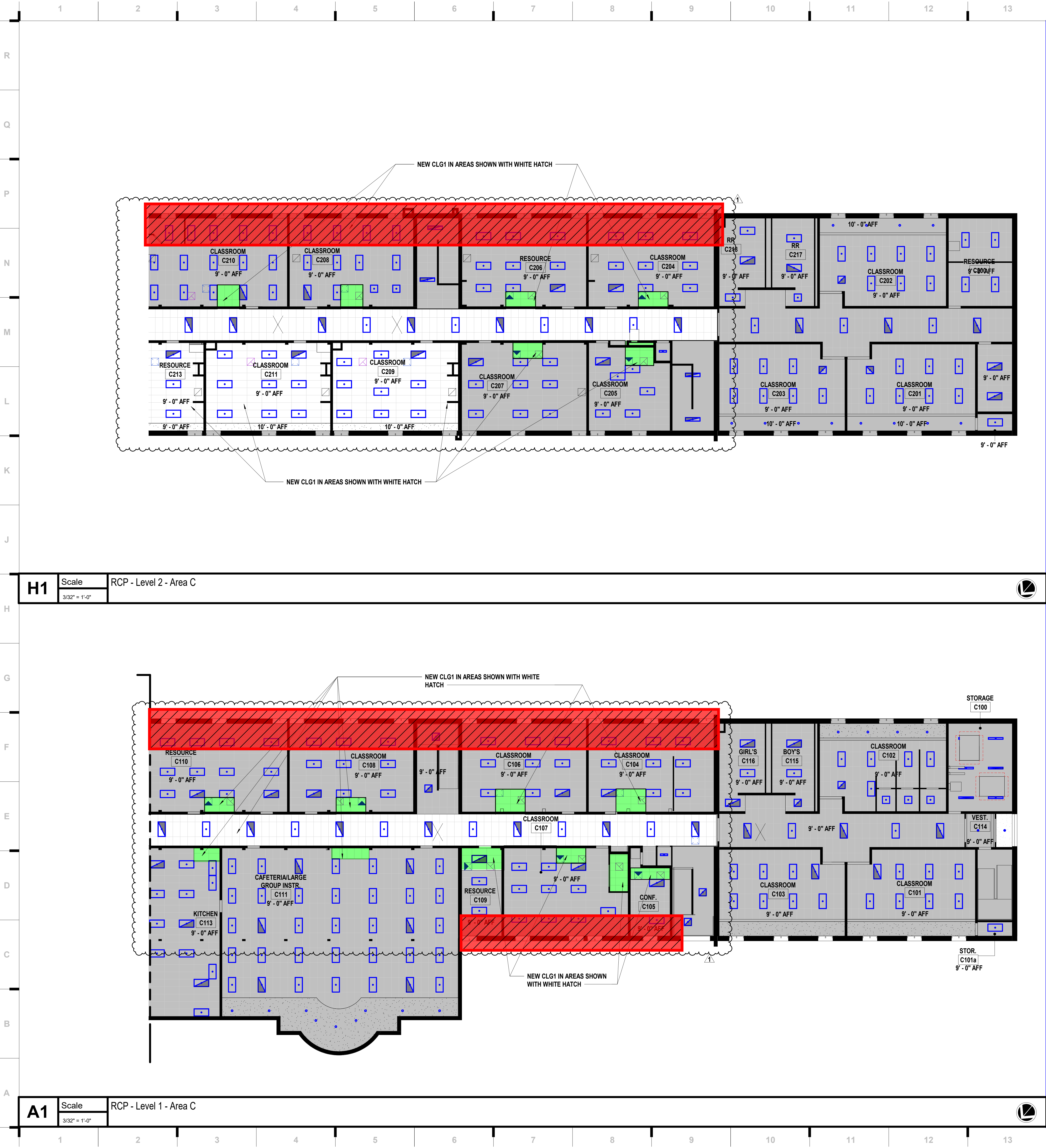
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A121B

12/6/2023 10:45:25 AM



RCP MATERIAL LEGEND		
ID	MATERIAL	COLOR/FINISH
C1a	Carpet	Speak in Color Black 00500
C1b	Carpet	Precious Metal 40810
C1C	Carpet	
CLG1	Ceiling	WHITE (WH), 24X48
F1	Fabric	006 INHALE
FT2	Floor (Poured) Topping	MATCH EXISTING
HP1	High Performance Coating	SW 7636 ORIGAMI WHITE
P1	Paint	SW 7636 ORIGAMI WHITE
P1A	Paint	MATCH EXISTING COLOR
P2	Paint	SW 6246 NORTH STAR
RT1	VCT	51874, GRAYED BLUE
TR1	Trim	
TR2	Trim	3/4", MWCL75, ANODIZED ALUMINUM
WF1	Window Film	OPAQUE WHITE

- ### SHEET NOTES
- REFER TO SHEET G000 FOR SHEET INDEX
 - REFER TO MEP AND TECHNOLOGY SHEETS FOR SPECIFIC CEILING MOUNTED DEVICES
 - ALL ACT GRIDS TO BE CENTERED IN ROOM UNLESS NOTED OTHERWISE
- = Phase 2 Scope of Work (Not included in this Bid Package)
- = Demo/salvage and re-install existing ceiling grid, tile, & lights

KEY PLAN

A121C

hollis + miller architects

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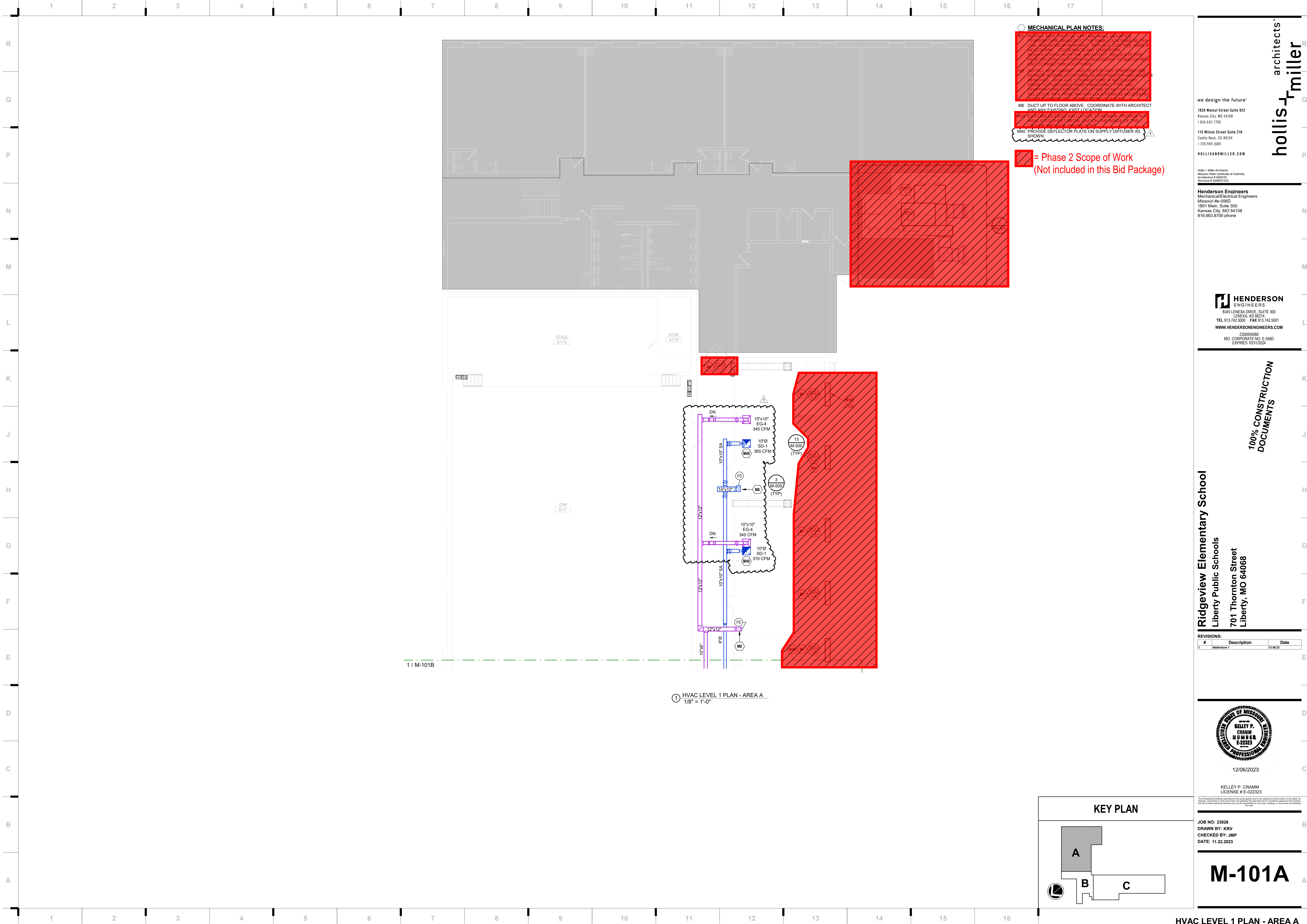
#	Description	Date
1	Amendment 1	12.8.23

Kevin E. Nelson
A-2019015618
DECEMBER 8, 2023

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KELLEY P. CRAMM



MECHANICAL PLAN NOTES:

TEMPERATURE SENSORS IN THE SAME LOCATION AS ANY COIL AND SENSORS REMOVED. REPLACE CONTROL WIRE IF NECESSARY. COORDINATE ANY NECESSARY PENETRATIONS WITH THE ARCHITECT. RELOCATE PIPE PENETRATIONS LOCATION AS NECESSARY TO MATCH NEW ANY CONFLICTS OR CLASHES.

M6 INSTALL NEW SENSIT. IN THE HEATER AND SENSIT. WIRE SENSIT. IN SAME LOCATION AS THE HEATER AND SENSIT. REMOVED. REPLACE CONTROL WIRE IF NECESSARY. COORDINATE ANY NECESSARY PENETRATIONS WITH THE ARCHITECT. RELOCATE PIPE PENETRATIONS LOCATION AS NECESSARY TO MATCH EXISTING. REPLACE CONTROL WIRE IF NECESSARY. COORDINATE ANY NECESSARY PENETRATIONS WITH THE ARCHITECT. RELOCATE PIPE PENETRATIONS LOCATION AS NECESSARY TO MATCH EXISTING.

M6 DUCT UP TO FLOOR ABOVE. COORDINATE WITH ARCHITECT AND ANY EXISTING DUCT LOCATION.

M40 PROVIDE DEFLECTOR PLATE ON SUPPLY DIFFUSER AS SHOWN.

**= Phase 2 Scope of Work
(Not included in this Bid Package)**

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MO CORPORATE NO. E-5560
EXPIRES 10/31/2024

100% CONSTRUCTION DOCUMENTS

Ridgeview Elementary School
Liberty Public Schools
701 Thornton Street
Liberty, MO 64068

REVISIONS:		
#	Description	Date
1	Addendum 1	12.08.23

KELLEY P. CRAMM
LICENSE # E-022323

12/06/2023

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LICENSE # E-022323

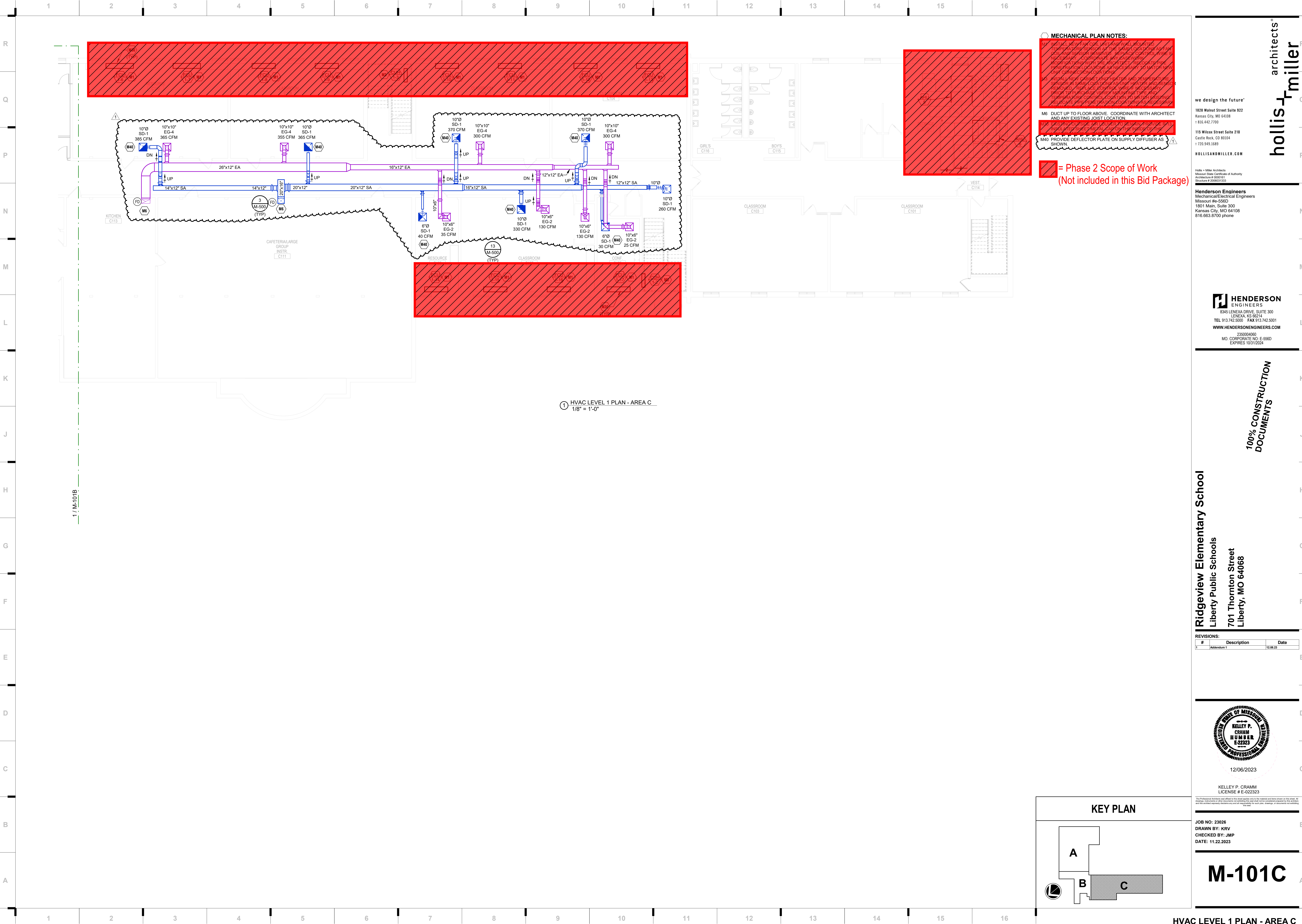
This Professional Addendum was added to the above documents to be applied to the original and hereby signed by the owner. All drawings, specifications and other documents are hereby approved and shall be a part of the contract between the architect and the owner. The architect agrees to accept any and all responsibility for each plan, drawing, or document up and including this addendum.

JOB NO: 23026
DRAWN BY: KRV
CHECKED BY: JMP
DATE: 11.22.2023

M-101A

HVAC LEVEL 1 PLAN - AREA A

12/6/2023 10:55:23 AM
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MECHANICAL PLAN NOTES:

1. INSTALL NEW EXISTING UNIT AND ALL MOUNTED TO THE EXISTING STRUCTURE AT THE SAME LOCATION AS EXISTING. DO NOT REMOVE. REPLACE CONTROL WIRE IF NECESSARY. COORDINATE ANY BASEMENT PENETRATIONS WITH THE ARCHITECT. RELOCATE PIPE PENETRATIONS LOCATIONS AS NECESSARY TO MATCH NEW UNIT CONNECTION LOCATIONS.

2. ASKUL UNIT: REMOVE ANY TEMPERATURE AND HUMIDITY SENSOR IN SAME LOCATION AS UNIT HEATER AND SENSOR REMOVED. REPLACE CONTROL WIRE IF NECESSARY. ASKUL UNIT: REMOVE ANY TEMPERATURE AND HUMIDITY SENSOR IN SAME LOCATION AS UNIT HEATER AND SENSOR REMOVED. REPLACE CONTROL WIRE IF NECESSARY. ASKUL UNIT: REMOVE ANY TEMPERATURE AND HUMIDITY SENSOR IN SAME LOCATION AS UNIT HEATER AND SENSOR REMOVED. REPLACE CONTROL WIRE IF NECESSARY.

3. EXISTING DUCTS ARE TO REMAIN. PROVIDE BATHS AND VESTIBULES WITH EXISTING DUCTWORK.

4. M40 PROVIDE DEFLECTOR PLATE ON SUPPLY DIFFUSER AS SHOWN.

5. M6 DUCT UP TO FLOOR ABOVE. COORDINATE WITH ARCHITECT AND ANY EXISTING JOIST LOCATION.

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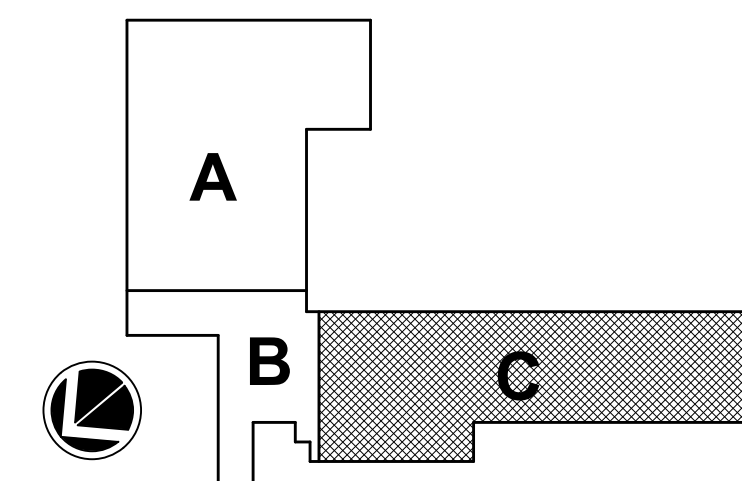


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M-101C

KEY PLAN



HVAC LEVEL 1 PLAN - AREA C

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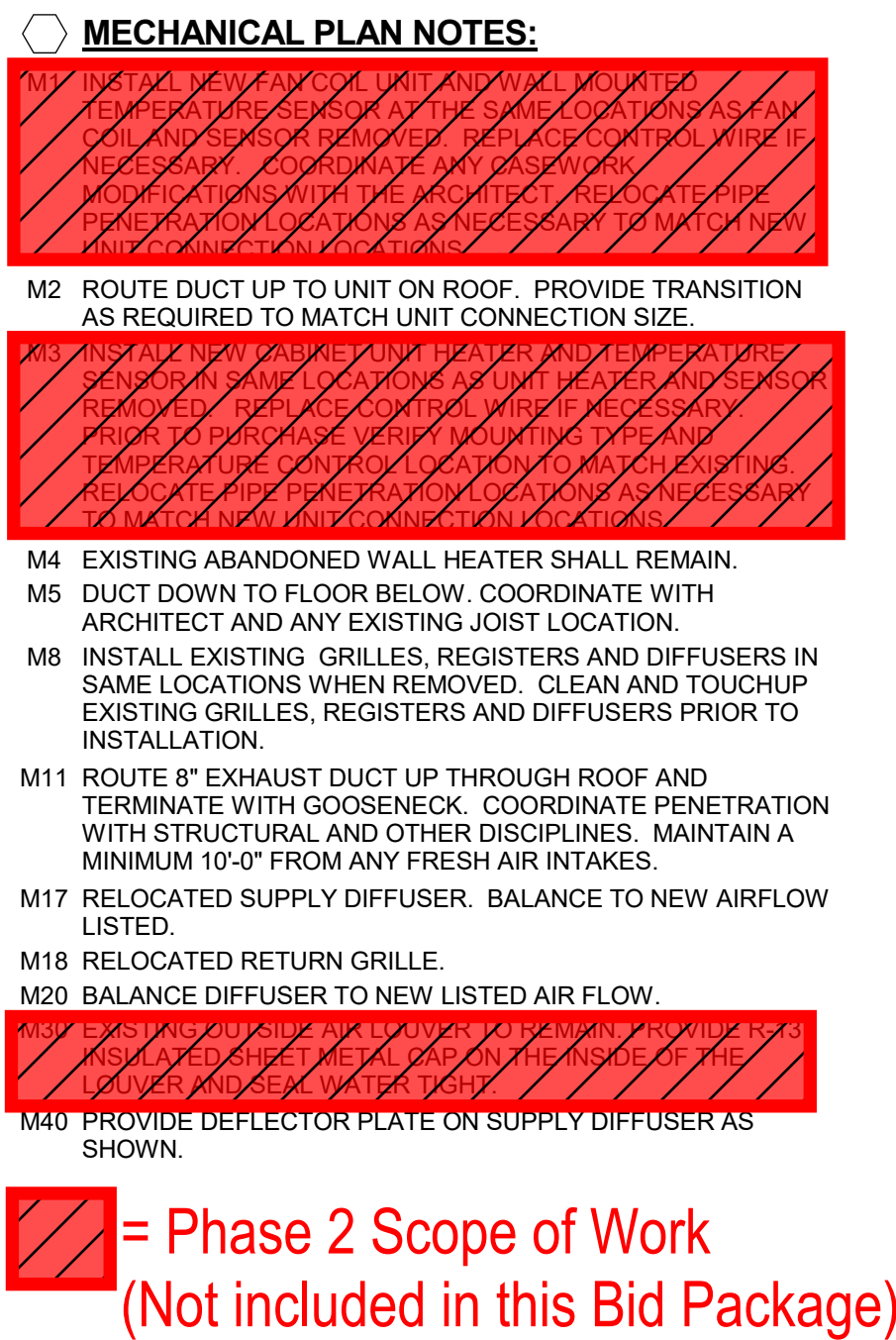
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Liberty, MO 64068**

M-102A

The diagram shows a stepped profile with three regions: A (hatched), B (white), and C (white). A circular inset shows a magnified view of the corner between regions A and B, highlighting the hatching pattern.

C LEVEL 2 PLAN - AREA A



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C

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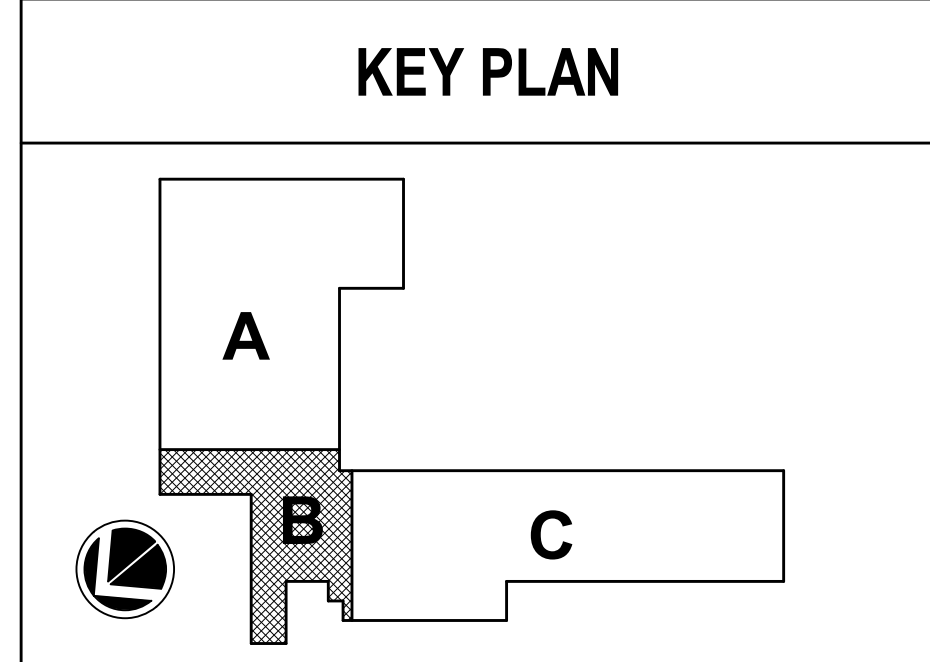
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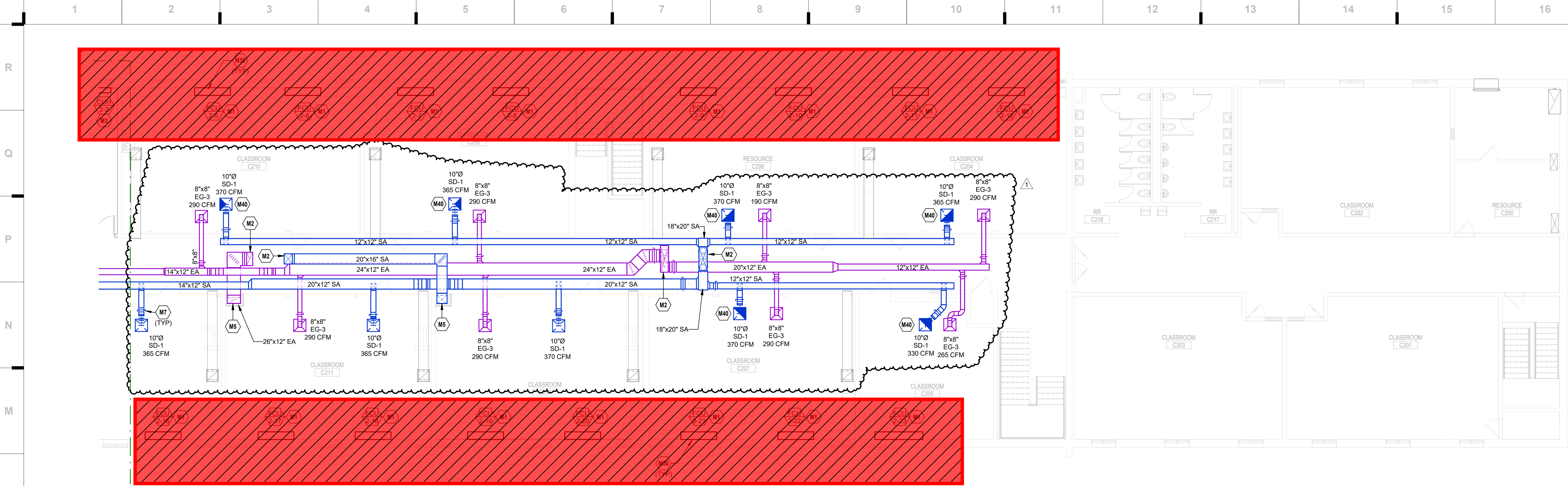
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M-102B A



HVAC LEVEL 2 PLAN - AREA B

12/6/2023 10:58:49 AM
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1 HVAC LEVEL 2 PLAN - AREA C
1/8" = 1'-0"

- MECHANICAL PLAN NOTES:**
- M1 INSTALL NEW FAN COIL UNIT AND WALL MOUNTED TEMPERATURE SENSOR AT THE SAME LOCATIONS AS EXISTING FAN COILS AND SENSORS. PROVIDE FAN COILS AND SENSORS WHERE NECESSARY. COORDINATE ANY CRESCENT MODIFICATIONS WITH THE ARCHITECT. BELGRADE PIPE FOR DUCT PENETRATIONS AS NECESSARY TO MATCH EXISTING PENETRATIONS.
 - M2 ROUTE DUCT UP TO UNIT ON ROOF. PROVIDE TRANSITION AS REQUIRED TO MATCH UNIT CONNECTION SIZE.
 - M3 REMOVE EXISTING FAN COIL UNIT AND TEMPERATURE SENSOR IN SAME LOCATIONS AS UNIT HEATER AND SENSOR REMOVED. RE-ROUTE CONTROL WIRE IF NECESSARY. SENSORS TO PROVIDE FAN COILS AND SENSORS WHERE NECESSARY. COORDINATE ANY CRESCENT MODIFICATIONS WITH THE ARCHITECT. BELGRADE PIPE FOR DUCT PENETRATIONS AS NECESSARY TO MATCH EXISTING PENETRATIONS.
 - M4 PROVIDE DEFLECTOR PLATE ON SUPPLY DIFFUSER AS SHOWN.
- = Phase 2 Scope of Work
(Not included in this Bid Package)**

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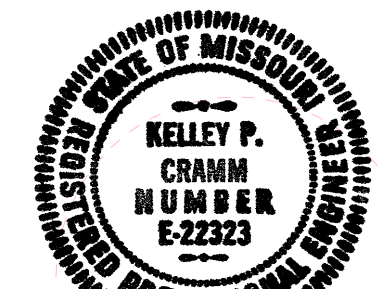
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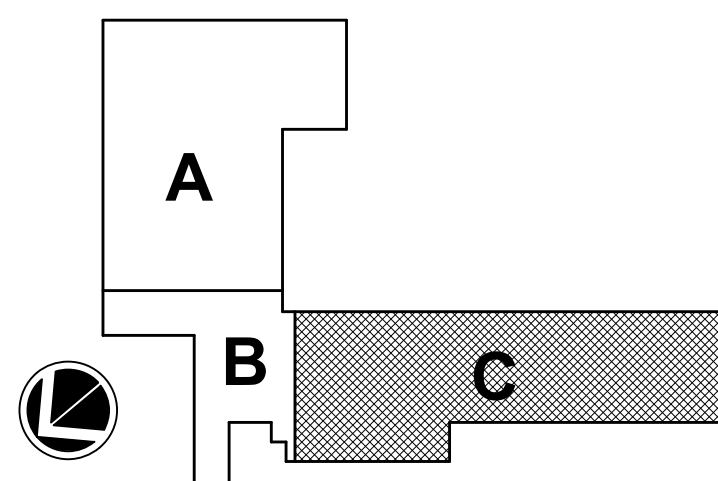
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M-102C

KEY PLAN



HVAC LEVEL 2 PLAN - AREA C

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DEDICATED OUTDOOR AIR SYSTEM - ROOFTOP UNIT W/ ENERGY RECOVERY (DX COOLING, NATURAL GAS HEATING)																																																					
				SUPPLY FAN										EXHAUST FAN						MAX ENERGY RECOVERY PRESS DROP		MIN ENTHALPHY RECOVERY RATIO		SUMMER HEAT RECOVERY						COOLING COIL						WINTER HEAT RECOVERY						GAS FIRED HEAT EXCHANGER						ELECTRICAL					
MARK	MANUFACTURER	MODEL	UNIT TYPE	FAN TYPE	DESIGN CFM	ESP (IN)	TSP (IN)	BHP	NOM HP	VFD (Y/N)	FAN TYPE	DESIGN CFM	ESP (IN)	TSP (IN)	BHP	NOM HP	VFD (Y/N)	MAX ENERGY RECOVERY PRESS DROP (IN)	MIN ENTHALPHY RECOVERY RATIO (%)	OAT (°F DB)	EXHAUST EAT (°F DB)	SUPPLY LAT (°F WB)	TH (°F DB)	SH (°F WB)	EAT (°F DB)	LAT (°F WB)	MAX VEL (FPM)	OAT (°F DB)	EXHAUST EAT (°F DB)	SUPPLY LAT (°F WB)	MIN OUT (MBH)	NOM INPUT (MBH)	MIN EFF (%)	EAT (°F DB)	LAT (°F WB)	MIN NO STAGES	V/PH	MCA	MOCP	DISC TYPE	WEIGHT (LBS)	NOTES											
DOAS1	TRANE	HORIZON B060	100% OA CV	PLENUM	1635	0.50	1.93	0.76	1.00	Yes	PLENUM	1310	0.50	1.27	0.47	1.0	Yes	0.70	0.77	95.6	76.7	75.0	63.0	82.2	69.1	83.3	51.7	82.2	69.1	52.7	52.2	400	0.0	70.0	45.7	40.5	80.0	100.0	80	45.7	90.8	5.1	208 V / 3PH	43.7	60	NF	4000	A-W					
DOAS2	TRANE	HORIZON D017	100% OA CV	PLENUM	3745	0.50	1.70	2.24	3.00	Yes	PLENUM	3000	0.50	1.58	1.22	1.5	Yes	1.09	0.76	95.6	76.7	75.0	63.0	82.4	71.2	106.5	110.7	82.4	71.2	54.9	54.6	400	0.0	70.0	44.6	37.8	202.5	150.0	80	44.6	94.5	10.1	208 V / 3PH	86.4	110	NF	6000	A-W					
DOAS3	TRANE	HORIZON D010	100% OA CV	PLENUM	2050	0.60	2.03	0.95	1.50	Yes	PLENUM	1640	0.50	1.19	0.47	1.0	Yes	0.81	0.77	95.6	76.7	75.0	63.0	82.0	69.7	113.3	67.6	82.0	69.7	51.2	51.2	400	0.0	70.0	45.7	40.9	120.0	150.0	80	45.7	99.7	10.1	208 V / 3PH	60.1	70	NF	6000	A-W					

MODEL NUMBERS AND NOMINAL TONS LISTED SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER, MODEL NUMBERS, OR NOMINAL TONS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

NOTES:

- REFER TO ROOFTOP UNIT CONTROL MATRIX ON M-600 FOR ADDITIONAL UNIT FEATURES, COMPONENTS, MODULES, ACCESSORIES, AND CONTROLS THAT SHALL BE PROVIDED WITH THE EQUIPMENT.
- EQUIPMENT SIZED FOR 100°F AMBIENT TEMPERATURE.
- PROVIDE 2" MERV 13, EFFICIENT PLEATED THROWAWAY AIR FILTERS.
- PROVIDE FACTORY MOUNTED DISCONNECT INSTALLED ON SERVICE SIDE OF UNIT.
- STARTERS FOR ALL MOTORS SHALL BE FURNISHED INTEGRAL WITH UNIT.
- PROVIDE FACTORY MOUNTED VARIABLE FREQUENCY DRIVE TO FACILITATE MODULATING FAN SPEED CONTROL.
- PROVIDE SHUNT GROUNDING SYSTEM ON FAN MOTOR. REFER TO MOTOR SPECIFICATION FOR ADDITIONAL INFORMATION.
- PROVIDE SINGLE POINT POWER CONNECTION.
- COORDINATE SIZE OF CONDUCTOR TERMINATION LUGS WITH CONDUCTOR SIZES SHOWN ON ELECTRICAL DRAWINGS.
- PROVIDE 125 VAC, 20 AMP DUPLEX CONVENIENCE RECEPTACLE MOUNTED TO UNIT READY FOR FIELD WIRING WITH A COVER UL LISTED FOR WET AND DAMPER LOCATIONS WHEN IN USE.
- SPECIFIED FAN ESP ACCOUNTS FOR DUCT LOSSES EXTERNAL TO UNIT.
- SPECIFIED FAN TSP INCLUDES EXTERNAL DUCT AND INTERNAL FILTER, COIL, AND CASING LOSSES. FILTER LOSS IS AT A MAXIMUM OF 400 FPM FACE VELOCITY.
- PROVIDE MOTOR HORSEPOWER TO OVERCOME INTERNAL UNIT STATIC PRESSURE DROP PLUS SPECIFIED EXTERNAL STATIC PRESSURE DROP. NOMINAL MOTOR HP SHALL BE NO LARGER THAN THE FIRST AVAILABLE NOMINAL MOTOR SIZE GREATER THAN THE REQUIRED BHP.
- PROVIDE INSULATED ROOF CURB WITH MINIMUM HEIGHT REQUIRED TO MAINTAIN BOTTOM OF EQUIPMENT A MINIMUM OF 16 INCHES ABOVE FINISHED ROOF SURFACE. PROVIDE SLOPED CURB IF NEEDED TO MATCH ROOF SLOPE. COORDINATE WITH ROOF INSULATION THICKNESS AND ROOF TAPER AT INSTALLED LOCATION. COORDINATE CURB TYPE WITH DRAWINGS.
- SCHEDULED WEIGHT IS THE MAXIMUM ALLOWABLE OPERATING WEIGHT OF THE EQUIPMENT, CURB, AND FILL.
- COOLING COIL LAT IS LEAVING AIR TEMPERATURE OF COIL.
- COOLING COIL SHALL BE CAPABLE OF MODULATING CAPACITY WITHOUT THE USE OF HOT GAS BYPASS. PROVIDE VARIABLE SPEED OR DIGITAL SCROLL LEAD COMPRESSOR FOR CAPACITY CONTROL.
- PROVIDE HEATER TO MEET OR EXCEED SCHEDULED MINIMUM MBH OUTPUT. NOMINAL INPUT IS BASED ON LISTED MANUFACTURER'S STANDARD PRODUCT. COORDINATE EQUIPMENT GAS LOAD WITH PLUMBING CONTRACTOR IF DIFFERENT FROM THAT SCHEDULED. MEET MINIMUM EFFICIENCY SCHEDULED.
- SELECT EQUIPMENT FOR ELEVATION OF 1000 FEET ABOVE SEA LEVEL.
- PROVIDE GUARDS TO PROTECT CONDENSER COIL FROM HAIL OR OTHER DAMAGE.
- PROVIDE BYPASS DAMPERS AROUND THE ENERGY RECOVERY DEVICE. SIZE ENERGY RECOVERY DEVICE FOR DESIGN SUPPLY CFM.
- PROVIDE WITH RETURN AIR PATH AND RETURN AIR DAMPER SO DOAS CAN BE UTILIZED FOR BUILDING WARMUP.
- PROVIDE MODULATING HOT GAS REHEAT COIL CAPABLE OF PROVIDING LEAVING AIR TEMPERATURE OF 75 °F AT DESIGN AIRFLOW.

CABINET UNIT HEATER SCHEDULE (HYDRONIC)

MARK	MANUFACTURER	MODEL	MIN/OUR (MBH)	EAT (°F)	LAT (°F)	FLOW (GPM)	CV	EW1 (°F)	EW2 (°F)	MAX WED (°F)	CFM	HP	VPH	RSE TYPE	NOTES
CUH-1	TRANE	FORCEFLO	10.2	70.0	90.0	0.70	0.46	193	170	4.54	295	2.04	115 V / 1PH	NF	A-E
CUH-1E	TRANE	FORCEFLO	17.1	70.0	90.0	1.24	0.84	194	170	4.19	295	2.04	115 V / 1PH	NF	A-E
CUH-1S	TRANE	FORCEFLO	11.1	70.0	90.0	1.32	0.55	193	170	4.10	295	2.04	115 V / 1PH	NF	A-E
CUH-2	TRANE	FORCEFLO	10.2	70.0	90.0	0.97	0.44	193	170	4.50	295	2.04	115 V / 1PH	NF	A-E
CUH-2S	TRANE	FORCEFLO	10.2	70.0	90.0	0.91	0.44	193	170	4.50	295	2.04	115 V / 1PH	NF	A-E

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

NOTES:

- VERTICAL FLOOR MOUNTED UNIT.
- NEW TEMPERATURE SENSOR FOR UNIT SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR.
- PROVIDE RUBBER ISOLATION AND ALL-THREAD HANGING RODS.
- PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
- PROVIDE FACTORY MOUNTED DISCONNECT SWITCH INSTALLED ON SERVICE SIDE OF UNIT.
- PROVIDE TWO-WAY CONTROL VALVE.

FAN SCHEDULE

MARK	SERVICE DESCRIPTION	MANUFACTURER	MOUNTING	MODEL	CFM	ESP (IN)	FAN RPM	ELECTRICAL		MCA	MOCP	ELECTRICAL		WEIGHT (LBS)	NOTES
								DRIVE (BELT/DIRECT)	V/PH			DISC TYPE	STARTER TYPE		
EF 1	EA	GREENHECK	CEILING	SP-A90	80	0.16	900	DIRECT	115 V / 1PH	0.2	15	NF	FV	15	A-C
EF 2	EA	GREENHECK	CEILING	SP-A90	80	0.16	900	DIRECT	115 V / 1PH	0.2	15	NF	FV	15	A-C

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

NOTES:

- PROVIDE RUBBER IN SHEAR ISOLATION AND ALL-THREAD HANGING RODS.
- PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
- PROVIDE WITH MANUFACTURER'S FAN SPEED CONTROLLER FOR BALANCING PURPOSES.

GRILLE, REGISTER AND DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	CONSTRUCTION TYPE	FACE TYPE	MOUNTING LOCATION	BORDER TYPE	FACE SIZE (IN)	MAX NC	MAX PRESS DROP (IN W.C.)	NOTES
EG-2	TITUS	46F	STEEL	EGGCRATE	CEILING	LAY-IN	24"x24"	20	0.08	B,C,F,G
EG-3	TITUS	46F	STEEL	EGGCRATE	CEILING	LAY-IN	24"x24"	20	0.08	B,C,F,G
EG-4	TITUS	46F	STEEL	EGGCRATE	CEILING	LAY-IN	24"x24"	20	0.08	B,C,F,G
RG-1	TITUS	46F	ALUMINUM	EGGCRATE	CEILING	LAY-IN	24"x24"	20	0.05	B,C,F,G
RG-2	TITUS	46F	ALUMINUM	EGGCRATE	CEILING	LAY-IN	24"x12"	20	0.05	B,C,F,G
SD-1	TITUS	OMNI	STEEL	PLAQUE	CEILING	LAY-IN	24"x24"	30	0.08	A,B,C,F,G,H
SG-1	TITUS	300RLHD	STEEL	LOUVERED	WALL	FLANGE	REFER TO PLANS	20	0.08	B,C,D,E,F,G

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

NOTES:

- 4-WAY THROW PATTERN UNLESS OTHERWISE INDICATED BY FLOW ARROWS ON DRAWINGS.
- NECK SIZE SHOWN ON DRAWINGS. PROVIDE BRANCH DUCT TO MATCH NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
- BAKED ENAMEL FINISH, WHITE TO MATCH CEILING COLOR.
- FRONT BLADES PARALLEL TO LONG DIMENSION.
- DOUBLE DEFLECTION BARS SHALL BE ADJUSTABLE.
- FRAME TYPE TO MATCH CEILING/WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING/WALL PLAN.
- PAINT ALL INTERIOR SURFACES SLOTS, GRILLES AND PLENUMS FLAT BLACK.
- PROVIDE TITUS OMNI-AA NT WITH DIRECTIONAL BLOW CHIP OR DEFLECTOR PLATE WHERE NOTE M40 INDICATES DEFLECTOR PLATE IS REQUIRED ON PLANS.

PUMP SCHEDULE

MARK	SERVICE	HADO MODEL	SIZE	MOUNTING	DESIGN			MAX		NPSH	NEMA	VFD	V/PH	DISC TYPE	STARTER TYPE	WEIGHT (LBS)	NOTES
					IN/PM	OUT/PM	FLOW (GPM)	HEAD (FT)	PRESS (PSIG)								
PCWP-1	CHILLED WATER	KU-00000	2X3X0.5	IN-LINE	275	275	50	125.00	6.00	5.7	1.5	1795	YAS 208 V / 3PH	VFD	VFD	75.00	A-A
PCWP-2	CHILLED WATER	KU-00000	2X3X0.5	IN-LINE	275	275	60	125.00	8.00	5.7	1.5	1795	YAS 208 V / 3PH	VFD	VFD	75.00	A-A

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

NOTES:

- PROVIDE CONCRETE NON-SKIPPING PAD PER SPECIFICATIONS.
- SUPPORT DUCT FROM CONCRETE SLAB WITH METAL SUPPORTS INDEPENDENT FROM PIPING SUPPORTS TO ALLOW PIPE TO BASS BENEATH.
- DISCONNECT SWITCH PROVIDED BY DIVISION 24 CONTRACTOR.
- VFD FURNISHED BY DIVISION 24 CONTRACTOR.
- FRONT BLADES PARALLEL TO LONG DIMENSION.
- INDICATES THE NET POSITIVE SUCTION HEAD AVAILABLE TO THE PUMP. PUMP AT DESIGN CONDITIONS SHALL HAVE NPSH LESS THAN SPECIFIED VALUE.
- PROVIDE OUTDOOR RATED TURBID WITH TFC MOTOR.
- PROVIDE WITH SECTION OF PIPER WITHOUT STRAINER.

FAN COIL UNIT SCHEDULE (HYDRONIC COILS)

MARK	MANUFACTURER	MODEL	SUPPLY FAN				COOLING COIL				HEATING COIL				ELECTRICAL				NOTES								
			CFM	HP	ESP (IN)	TSP (IN)	FLOW (GPM)	HEAD (FT)	MAX	DESIGN	FLOW (GPM)	HEAD (FT)	MAX	DESIGN	VALUE	HP	DISC	WEIGHT (LBS)									
FCU-1	TRANE	UNITRANE FC10 MODEL-J	690	0.12	14.0	11.4	75.0	26.0	2.37	44	82	7.0	1.1	212	15.2	70.0	90.0	1.24	193	170	5.2	0.58	212	115 V / 1PH	NF	230	A-C
FCU-1S	TRANE	UNITRANE FC10 MODEL-J	690	0.12	14.0	11.4	75.0	26.0	2.37	44	82	7.0	1.1	212	15.2	70.0	90.0	1.32	193	170	5.2	0.58	212	115 V / 1PH	NF	230	A-C
FCU-1S	TRANE	UNITRANE FC10 MODEL-J	695	0.12	13.2	11.1	75.0	26.0	3.43	44	82	7.0	1.1	212	15.2	70.0	90.0	1.32	193	170	5.2	0.58	212	115 V / 1PH	NF	230	A-C
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TELECOMMUNICATIONS AND SECURITY SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED.

STANDARD MOUNTING HEIGHTS

TELECOM BACKBOARD (BOTTOM OF BACKBOARD)	4"
LADDER RACK IN TELECOM ROOMS (BOTTOM OF DEVICE)	8"
CABLE TRAY / CONDUIT AFG (BOTTOM OF PATHWAY)	3"(MIN)
LIGHT FIXTURE IN TELECOM ROOMS (BOTTOM OF DEVICE)	108"(MIN)
TELEPHONE WALL OUTLET (CENTERLINE)	48"
DATA WALL OUTLET	SAME AS ADJACENT DEVICE, UNO
TELEVISION OUTLET	72"
TMBG/TOB (CENTERLINE)	84"
WALL CLOCK (CENTERLINE)	84"
INTERCOM (CENTERLINE)	48"

USE THE DEFAULT MOUNTING HEIGHTS SHOWN ABOVE UNO IN THE CONSTRUCTION DOCUMENTS. MOUNTING HEIGHTS LISTED ARE ABOVE FINISHED FLOOR (AFF) OR ABOVE FINISHED GRADE (AFG) TO BOTTOM OF OUTLET BOX. ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.

ABBREVIATIONS

A	AMPERES	LAN	LOCAL AREA NETWORK
ADA	AMERICANS WITH DISABILITIES ACT	LCC	LIMITED COMBUSTIBLE CABLE
AFC	ABOVE FINISHED CEILING	LEC	LOCAL EXCHANGE CARRIER
AFF	ABOVE FINISHED FLOOR	LED	LIGHT-EMITTING DIODE
AFG	ABOVE FINISHED GRADE	LF	LINEAR FEET
AHJ	AUTHORITY HAVING JURISDICTION	MAN	METROPOLITAN AREA NETWORK
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MA TV	MASTER ANTENNA TELEVISION
AP	ACCESS POINT	MC	MAIN CROSS-CONNECT
AV	AUDIO-VIDEO	MDF	MAIN DISTRIBUTION FRAME
AWG	AMERICAN WIRE GAUGE	MFR	MANUFACTURER
BAS	BUILDING AUTOMATION SYSTEM	MH	MAINTENANCE HOLE
BBC	BACKBONE BONDING CONDUCTOR	MM	MULTIMODE
BD	BUILDING DISTRIBUTOR	MPOE	MAIN POINT OF ENTRANCE
BDF	BUILDING DISTRIBUTION FRAME	MPOP	MAIN POINT OF PRESENCE
BFC	BELOW FINISHED CEILING	MTD	MOUNTED
C	CONDUIT	N/A	NOT APPLICABLE
CAT	CATEGORY	NEC	NATIONAL ELECTRICAL CODE
CATV	COMMUNITY ANTENNA TELEVISION	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CCTV	CLOSED CIRCUIT TELEVISION	NIC	NOT IN CONTRACT
CD	CAMPUS DISTRIBUTOR	nm	NANOMETER
CMP	COMMUNICATIONS PLENUM	NRTL	NATIONALLY RECOGNIZED TESTING LAB
CMR	COMMUNICATIONS RISER JACKET	OC	ON CENTER
DAS	DISTRIBUTED ANTENNA SYSTEM	OC	ON CENTER
dB	DECIBELS	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
DEMO	DEMOLITION	OSP	OUTSIDE PLANT
EC	ELECTRICAL CONTRACTOR	PBB	PRIMARY BONDING BUSBAR
ECIA	ELECTRONIC COMPONENTS INDUSTRY ASSOCIATION	PBX	PRIVATE BRANCH EXCHANGE
EMI	ELECTROMAGNETIC INTERFERENCE	POE	POWER OVER ETHERNET
EMS	ENERGY MANAGEMENT SYSTEM	PON	PASSIVE OPTICAL NETWORK
EMT	ELECTRICAL METALLIC TUBING	POTS	PLAIN OLD TELEPHONE SERVICE
ER	EQUIPMENT ROOM	PSTN	PUBLIC SWITCHED TELEPHONE NETWORK
ETR	EXISTING TO REMAIN	QTY	QUANTITY
FAAP	FIRE ALARM ANNUNCIATOR PANEL	RCDD	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
FACP	FIRE ALARM CONTROL PANEL	RMC	RIGID METAL CONDUIT
FD	FLOOR DISTRIBUTOR	SBB	SECONDARY BONDING BUSBAR
FMC	FLEXIBLE METAL CONDUIT	SCS	STRUCTURED CABLING SYSTEM
FS	FIRE STOP SYSTEM	SF	SQUARE FEET
FLR	FLOOR	SM	SINGLEMODE
FUTP	SCREEN TWISTED PAIR (SHIELDED)	SPECS	SPECIFICATIONS
GC	GENERAL CONTRACTOR	TBB	TELECOMMUNICATIONS BONDING BACKBONE
GYP	GYPSUM BOARD	TBD	TO BE DETERMINED
HC	HORIZONTAL CROSS-CONNECT	TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
HCM	HORIZONTAL CABLE MANAGER	TR	TELECOMMUNICATIONS ROOM
HH	HAND HOLE	TYP	TYPICAL
HZ	HERTZ	UNO	UNLESS NOTED OTHERWISE
IMC	INTERMEDIATE METAL CONDUIT	UL	UNDERWRITER LABORATORIES, INC.
IP	INTERNET PROTOCOL	UPS	UNINTERRUPTIBLE POWER SUPPLY
ISP	INTERNET SERVICE PROVIDER	UUTP	UNSHIELDED TWISTED PAIR (VOLTS)
ISP	INSIDE PLANT CABLE	V	VERTICAL
JB	JUNCTION BOX	WCM	WIRE CABLE MANAGER
J-BOX	JUNCTION BOX	W	WIRE
		WAN	WIDE AREA NETWORK
		WAO	WORK AREA OUTLET
		WAP	WIRELESS ACCESS POINT
		WP	WEATHER PROOF
		WR	WEATHER RESISTANT
		WT	WATERTIGHT
		XP	EXPLOSION-PROOF

ANNOTATION

①	TECHNOLOGY PLAN CALLOUT
1	EQUIPMENT DESIGNATION (OWNER FURNISHED, CONTRACTOR INSTALLED)
⊙	CONNECTION POINT OF NEW WORK TO EXISTING
1 T1	DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER, LOWER NUMBER INDICATES SHEET NUMBER
1 T1	SECTION CUT DESIGNATION
▨	DEDICATED EQUIPMENT ACCESS TILE
☑	ACCESS PANEL

LINETYPE LEGEND

THROUGHOUT THE DRAWINGS DIFFERENT LINE-TYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF THE NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC.

EXISTING	NEW
DEMOLISH	FUTURE

CABLE TYPES

A	CATEGORY 6 CABLE
B	CATEGORY 6A CABLE

PATHWAYS

W"xH	WIRE MESH CABLE TRAY (W="WIDTH, "H"=HEIGHT)
—	VERTICAL CABLE TRAY
(#) D"	UNDERGROUND CONDUIT ("H"=QUANTITY, "D"=CONDUIT DIAMETER)
(#) D"	CONDUIT ("H"=QUANTITY, "D"=CONDUIT DIAMETER)
(#) D"	CABLE SUPPORTS OR J-HOOKS
(#) D"	CONDUIT SLEEVE ("H"=QUANTITY, "D"=CONDUIT DIAMETER)
FS	UL FIRESTOP SYSTEM ASSEMBLY
PB L"xW"xH"	PULL BOX ("L"=LENGTH, "W"=WIDTH, "H"=HEIGHT)
SC	SPLICE

RISER DIAGRAMS

[PATCH PANEL]	PATCH PANEL (4/TN500)
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TELECOMMUNICATIONS OUTLETS

SYMBOL	DESCRIPTION	CABLE(S)		DETAIL
		A	B	
▽ (DEMO)	DATA WALL OUTLET, TO BE DEMOLISHED	-	-	-
▽ (ETR)	DATA WALL OUTLET, EXISTING TO REMAIN	-	-	-
▣ (DEMO)	MULTI-SERVICE FLOOR BOX WITH DATA AND POWER OUTLETS, TO BE DEMOLISHED	-	-	-
⊙ (ETR)	DATA CEILING OUTLET, EXISTING TO REMAIN	-	-	-
▽ 2D	DATA WALL OUTLET	2	0	1,2,4/TN500
▽ 2D.TV	TELEVISION WALL OUTLET	2	0	1,2,4/TN500
▽ 2D	DATA WALL OUTLET, ABOVE COUNTER	2	0	1,2,4/TN500
⊙ 2D.2DA	DATA CEILING OUTLET	2	2	3,4/TN500

ROUGH-IN OUTLETS

ROUGH-IN ONLY SCHEDULE				
SYMBOL	DESCRIPTION	BACK BOX	CONDUIT	
R / FF	FURNITURE FEED, WALL BOX	2-GANG BACKBOX WITH 2" GROMMET	(2) 2" EMT	

TELECOMMUNICATIONS RESPONSIBILITY MATRIX

Description	Furnish		Install	
	Construction Team	Owner	Construction Team	Owner
General Communications				
Hangers and Supports	X		X	
Conduits and Backboxes	X		X	
Cable Trays	X		X	
Surface Raceways	X		X	
Firestops, Conduit Sleeves, and Sleeve Seats	X		X	
Structured Cabling				
Telecom Room Frames and Enclosures	X		X	
Copper Horizontal Cable and Connectivity	X		X	
Data Communications				
Wireless Access Points		X		X
Servers / Storage and Backup		X		X
Laptops / Desktops / Copiers / Printers / Scanners		X		X
Time Clock		X		X
Software		X		X
Electronic Safety and Security				
Conduits and Backboxes for Security systems	X			X

SECURITY SYMBOLS

☒	CEILING MOUNT CAMERA
⊕-CR	WALL MOUNT PROXIMITY CARD READER
⊕-EL	WALL MOUNT ELECTRIFIED LOCKING DEVICE, REQUEST TO EXIT, DOOR POSITION SWITCH, AND LATCH BOLT MONITOR SEE ARCHITECTURAL DOOR HARDWARE SCHEDULE
⊕-RO	REMOTE UNLOCK/OPEN BUTTON

GENERAL NEW WORK NOTES

1. READ THE SPECIFICATIONS AND REVIEW DRAWINGS OF ALL DIVISIONS OF WORK. COORDINATE THIS WORK WITH ALL OTHER DIVISIONS OF WORK AND ALL SUBCONTRACTORS.
2. ALL WORK SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS (DIVISION 26, DIVISION 27, DIVISION 28, ETC.) AND THE CUSTOMER PRE-ESTABLISHED STRUCTURED CABLING STANDARDS. SHOULD DIFFERENCES EXIST IN THE SPECIFICATIONS RELATING TO TECHNOLOGY AND THE CLIENT'S PRE-ESTABLISHED STANDARDS, THE CONTRACTOR SHALL CONTACT THE LOW VOLTAGE ENGINEER FOR CLARIFICATION THROUGH THE RFI PROCESS.
3. FULLY COORDINATE ALL CABLE TRAY, FIRE STOP CONDUITS / SLEEVES, AND CONDUIT ROUTING WITH STRUCTURAL ELEMENTS. COORDINATE CABLE TRAY AND CONDUIT INSTALLATIONS WITH ARCHITECT, STRUCTURAL ENGINEER, STRUCTURAL CONTRACTOR, AND GENERAL CONTRACTOR PRIOR TO INSTALLATION. ROUTING IN CONCRETE SLAB OR UNDER SLAB (WHERE SLAB WOULD BE ON GRADE) REQUIRES THE USE OF WET LOCATION RATED CABLES.
4. ALL TELECOMMUNICATIONS CONTINUOUS PATHWAYS SHALL BE BONDED TO THE TELECOMMUNICATIONS BONDING BACKBONE. FOR CONDUITS, INSULATION BUSHINGS SHALL BE USED AT THE END OF THE CONDUIT THE FARTHEST AWAY FROM THE SERVING TR. A BONDING BUSHING SHALL BE USED AT THE END CLOSEST TO THE SERVING TR. CONTRACTOR TO REFER TO THE ANSI-STD-J 607 STANDARD FOR ADDITIONAL INFORMATION AS TO THE INSTALLATION OF THE TELECOMMUNICATIONS BONDING BACKBONE.
5. ALL FIRE RATED WALL / FLOOR ASSEMBLIES PENETRATED FOR TELECOMMUNICATIONS CABLING PATHWAYS SHALL BE FIRE STOPPED WITH THE APPROVED FIRE STOP SYSTEMS (FS). ALL FIRESTOP SYSTEMS SHALL BE INSTALLED AS DIRECTED BY THE MANUFACTURER AND AS SPECIFIED IN DIVISION 07 07 84 00 - "FIRESTOPPING". FIRE STOP ASSEMBLY LOCATIONS ARE TO BE COORDINATED WITH CABLE TRAY PATHWAY TO TELECOMMUNICATIONS ROOM.
6. BACK BOXES AND CONDUIT LOCATIONS IN PRECAST CONCRETE WALLS SHALL BE COORDINATED WITH ARCHITECT, STRUCTURAL ENGINEER, AND GC PRIOR TO ORDERING THE PRECAST WALLS.
7. ROUTING OF CABLES SHALL BE CONCEALED. CABLES SHALL BE ROUTED IN CONDUIT IN EXPOSED AREAS. MINIMIZE AMOUNT OF EXPOSED CONDUIT BY EMBEDDING CONDUIT IN SLAB WHEN POSSIBLE. EMBEDDED CONDUITS AND PENETRATIONS OF STRUCTURE SHALL FOLLOW DETAILS IN STRUCTURAL DRAWINGS. WHEN CONDUITS CAN ONLY BE INSTALLED EXPOSED, NOTIFY ARCHITECT PRIOR TO START OF INSTALLATION OF CONDUITS. CABLES SHALL BE ROUTED IN CONDUIT WHEN ABOVE HARD CEILINGS. CONDUITS FOR ELEVATOR PHONES AND FIRE ALARM CONTROL PANEL SHALL BE CONTINUOUS (HOMERUN) FROM THE TELECOMMUNICATIONS ROOM TO THE APPLICABLE BOX / CABINET. CONTRACTOR SHALL SIZE AND PROVIDE CONDUITS TO MEET ITA-569.
8. TELECOMMUNICATIONS ROOMS SHALL BE DEDICATED FOR INFORMATION TECHNOLOGY USE (I.E. NO SHARED SPACE WITH A JANITOR, FIRE ALARM SYSTEM, ETC.) NO SERVICES SHALL PASS THROUGH THE SPACE UNLESS DEDICATED TO THE SPACE (NO PLUMBING, MECHANICAL, ELECTRICAL, FIRE, ETC.)

GENERAL DEMOLITION NOTES

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE FACILITY, INCLUDING PATHWAY LOCATIONS AND ELEVATIONS. REVIEW THE GENERAL NOTES AND ALL OTHER TRADE DRAWINGS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS, INCLUDING ALL DEMOLITION AND NEW WORK DOCUMENTS. NOTIFY ARCHITECT, ENGINEER OR OWNER, AS SPECIFIED, OF ANY CONFLICTS OR DISCREPANCIES.
2. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
3. AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION. REPAIR DAMAGE CAUSED DURING WORK AT NO EXTRA COST TO OWNER.
4. REMOVE ALL PATHWAYS, CABLING AND ASSOCIATED DEVICES FOR ALL ITEMS INTENDED TO BE REMOVED. ABANDONING UNUSED ELEMENTS WILL NOT BE ACCEPTABLE.
5. REMOVE EXISTING ITEMS AS REQUIRED TO ACCOMMODATE THE GENERAL DEMOLITION SCOPE. ANY SYSTEMS PASSING THROUGH THE SPACE INTENDED TO REMAIN IN SERVICE SHALL BE PROTECTED OR RELOCATED AS REQUIRED TO MAINTAIN SERVICE AND ACCOMMODATE THE GENERAL DEMOLITION AND NEW SCOPE OF WORK.
6. REFER TO ARCHITECTURAL PLANS FOR SCOPE OF AREAS THAT ARE TO BE DEMOLISHED UNDER THIS PHASE OF CONSTRUCTION. NOTE THAT IN SOME CASES, DEMOLITION WORK EXTENDS BEYOND SCOPE OF AREA IDENTIFIED DUE TO EXISTING SYSTEM DESIGN. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO STARTING WORK.
7. COORDINATE THE INTERMEDIATE STORAGE, REMOVAL AND FINAL DISPOSITION OF TELECOMMUNICATIONS SCS COMPONENTS (PATHWAYS, CABLE, TERMINATION COMPONENTS, ETC.) AND THE REQUIRED PROTECTION OF EXISTING SPECIAL SYSTEMS EQUIPMENT WITH OWNER PRIOR TO EXECUTION THAT ARE TO BE REMOVED AS A RESULT OF THE DEMOLITION / RENOVATION WORK.
8. EXISTING TELECOMMUNICATIONS CABLES AND COMPONENTS THAT PASS THROUGH THE CONSTRUCTION ZONE SHALL BE PROTECTED AND REMAIN IN PLACE SO AS TO MAINTAIN SERVICE WHILE ALSO ACCOMMODATING THE GENERAL DEMOLITION AND NEW SCOPE OF WORK. CONTRACTOR SHALL COORDINATE ALL SUCH EFFORTS WITH THE CLIENT PRIOR TO EXECUTION. DAMAGE TO EXISTING AND TO REMAIN IN PLACE TELECOMMUNICATIONS CABLES AND COMPONENTS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IN A TIMELY MANNER AND TO THE WRITTEN SATISFACTION OF THE OWNER AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE CABLE SUPPORTS FOR ANY EXISTING AND REUSED CABLES THAT ARE NOT PROPERLY SUPPORTED.

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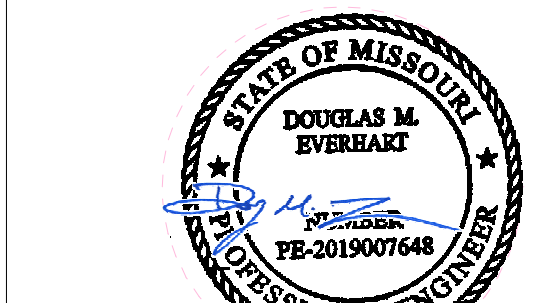
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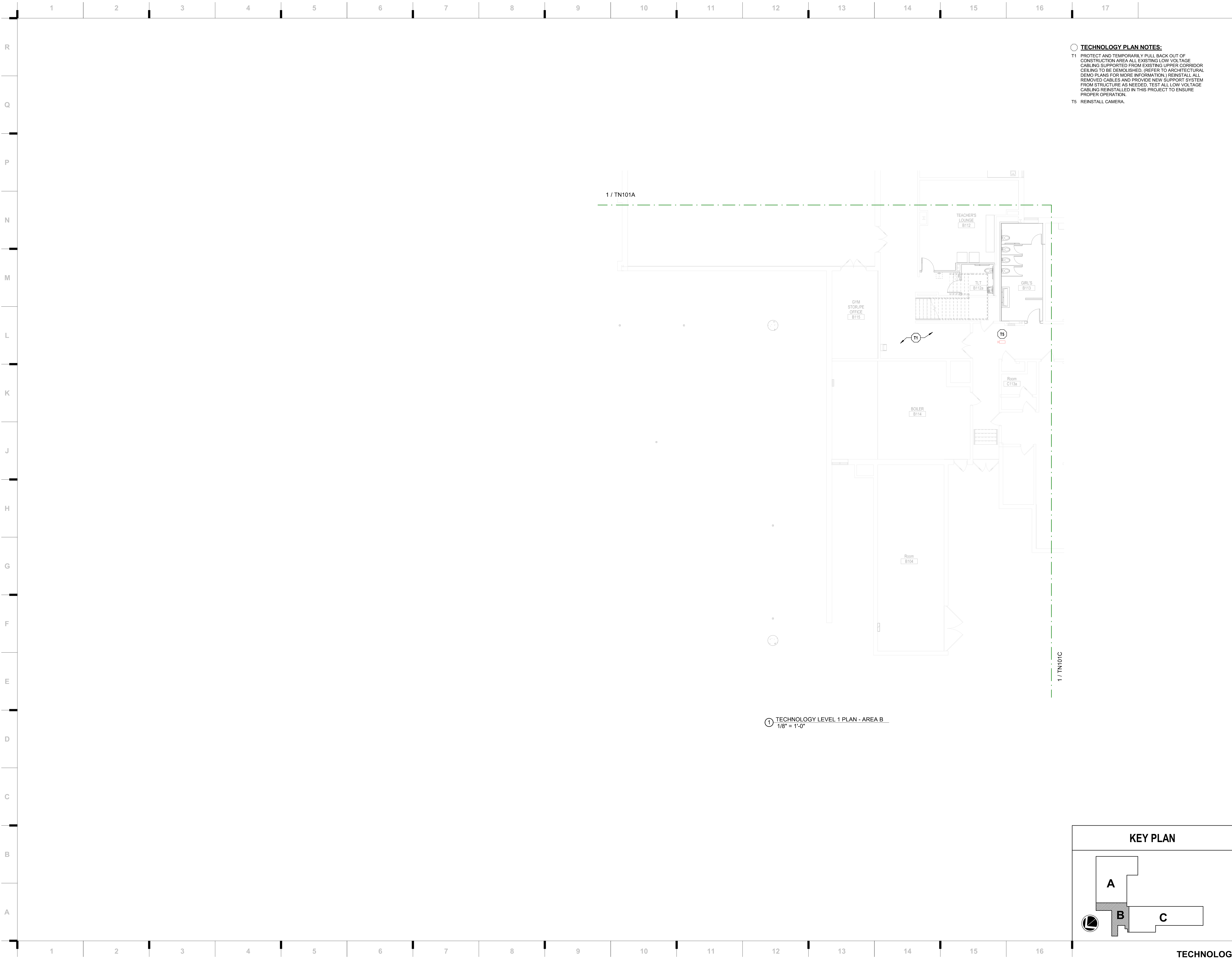


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○ **TECHNOLOGY PLAN NOTES:**
T1 PROTECT AND TEMPORARILY PULL BACK OUT OF CONSTRUCTION AREA ALL EXISTING LOW VOLTAGE CABLING SUPPORTED FROM EXISTING UPPER CORRIDOR CEILING TO BE DEMOLISHED. (REFER TO ARCHITECTURAL DEMO PLANS FOR MORE INFORMATION.) REINSTALL ALL REMOVED CABLES AND PROVIDE NEW SUPPORT SYSTEM FROM STRUCTURE AS NEEDED. TEST ALL LOW VOLTAGE CABLING REINSTALLED IN THIS PROJECT TO ENSURE PROPER OPERATION.
T5 REINSTALL CAMERA.

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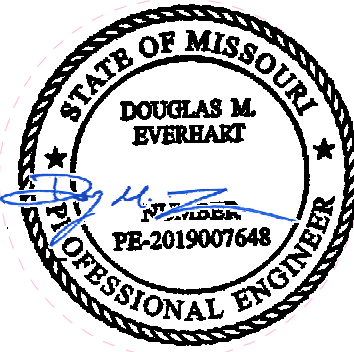
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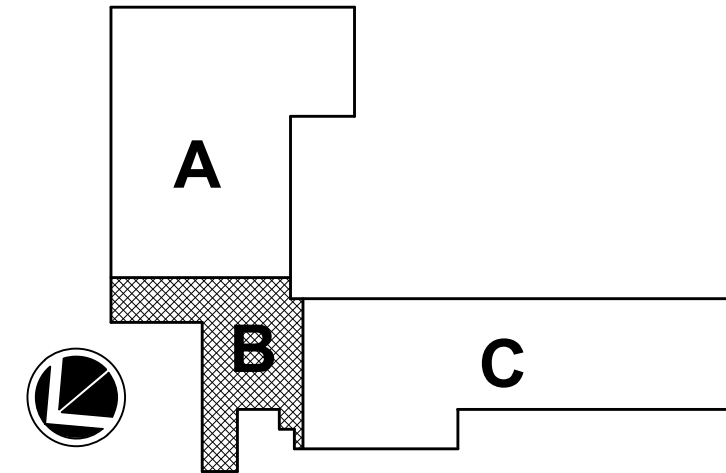


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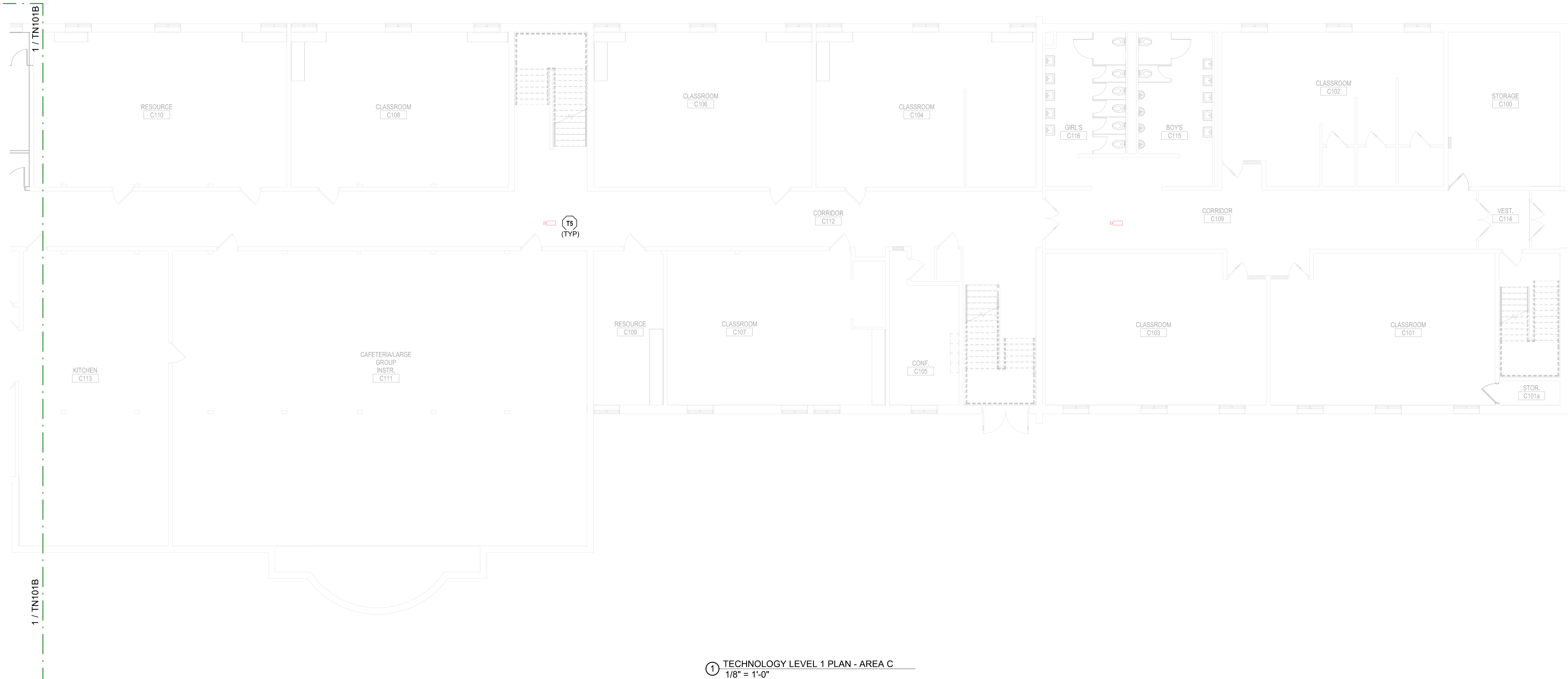
KEY PLAN



TECHNOLOGY LEVEL 1 PLAN - AREA B

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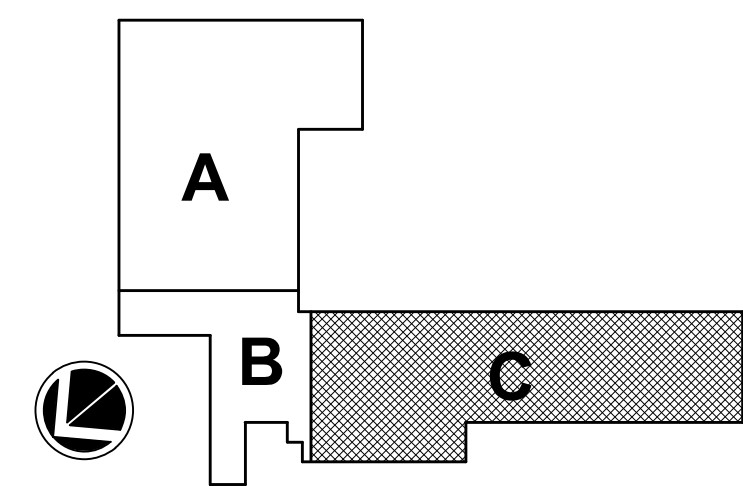
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○ **TECHNOLOGY PLAN NOTES:**
T5 REINSTALL CAMERA.

① **TECHNOLOGY LEVEL 1 PLAN - AREA C**
1/8" = 1'-0"

KEY PLAN



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TECHNOLOGY LEVEL 1 PLAN - AREA C

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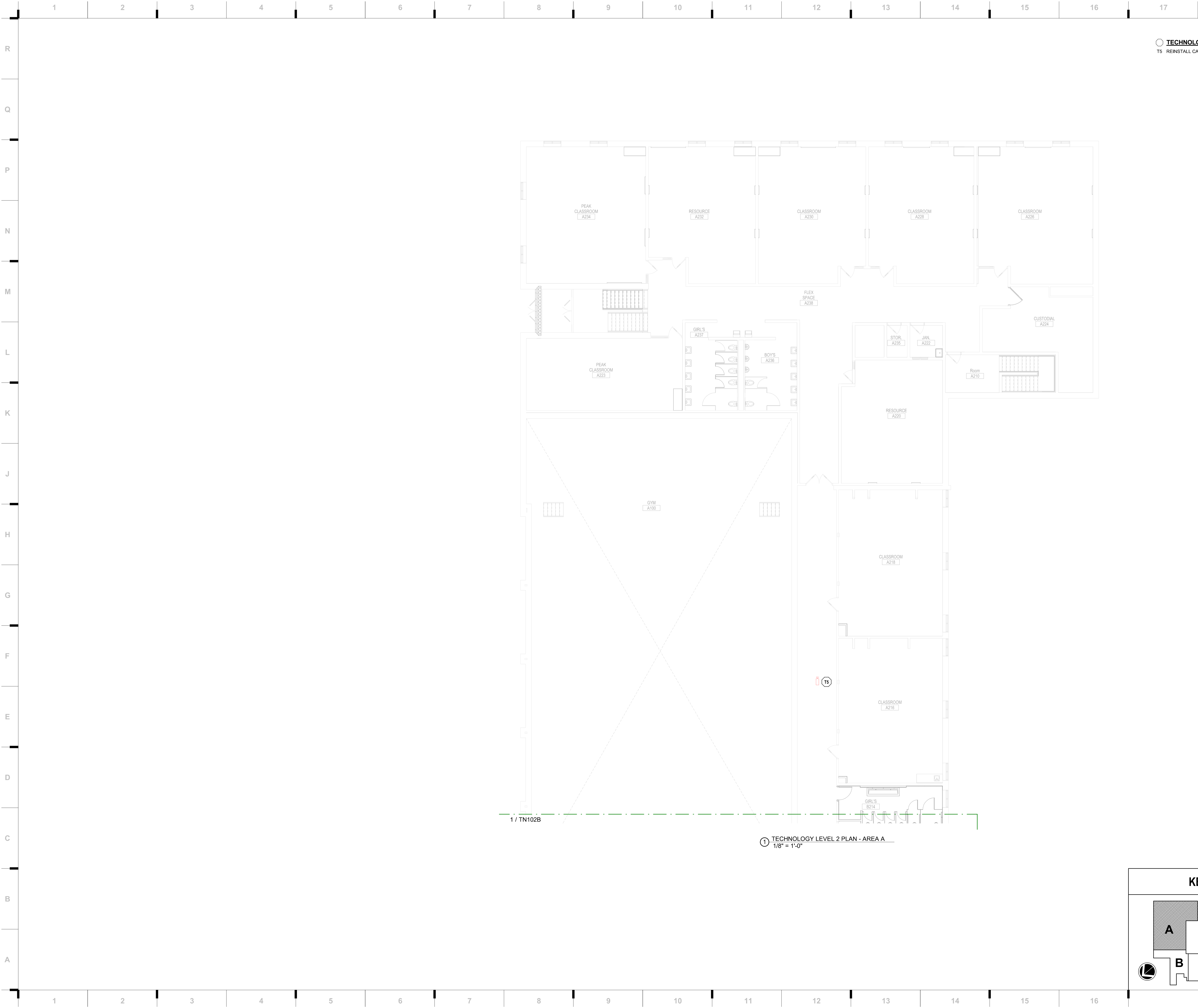
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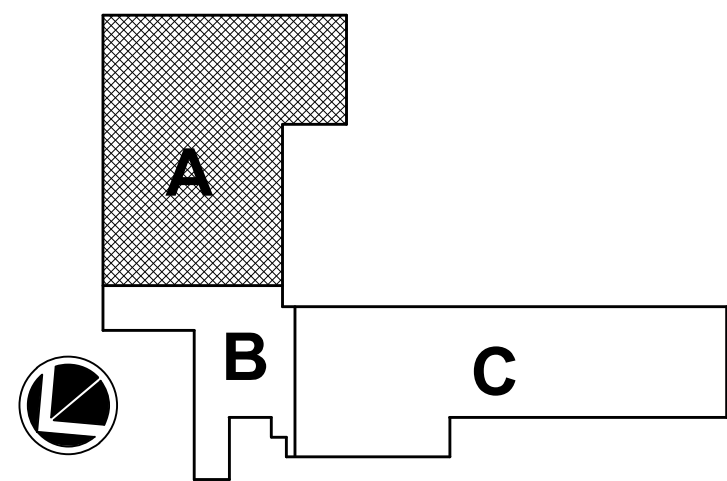
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○ **TECHNOLOGY PLAN NOTES:**
T5 REINSTALL CAMERA.

① **TECHNOLOGY LEVEL 2 PLAN - AREA A**
1/8" = 1'-0"

KEY PLAN



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TECHNOLOGY LEVEL 2 PLAN - AREA A

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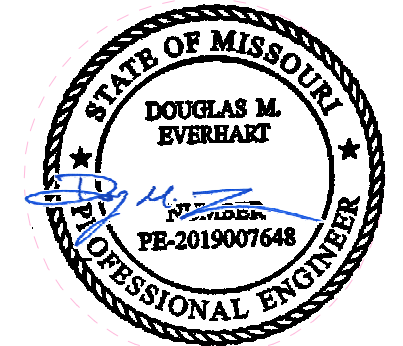
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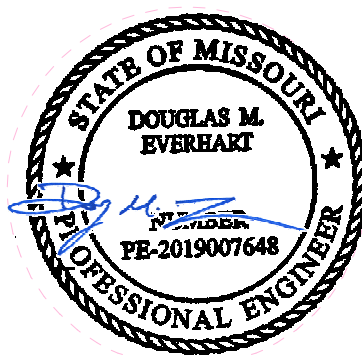
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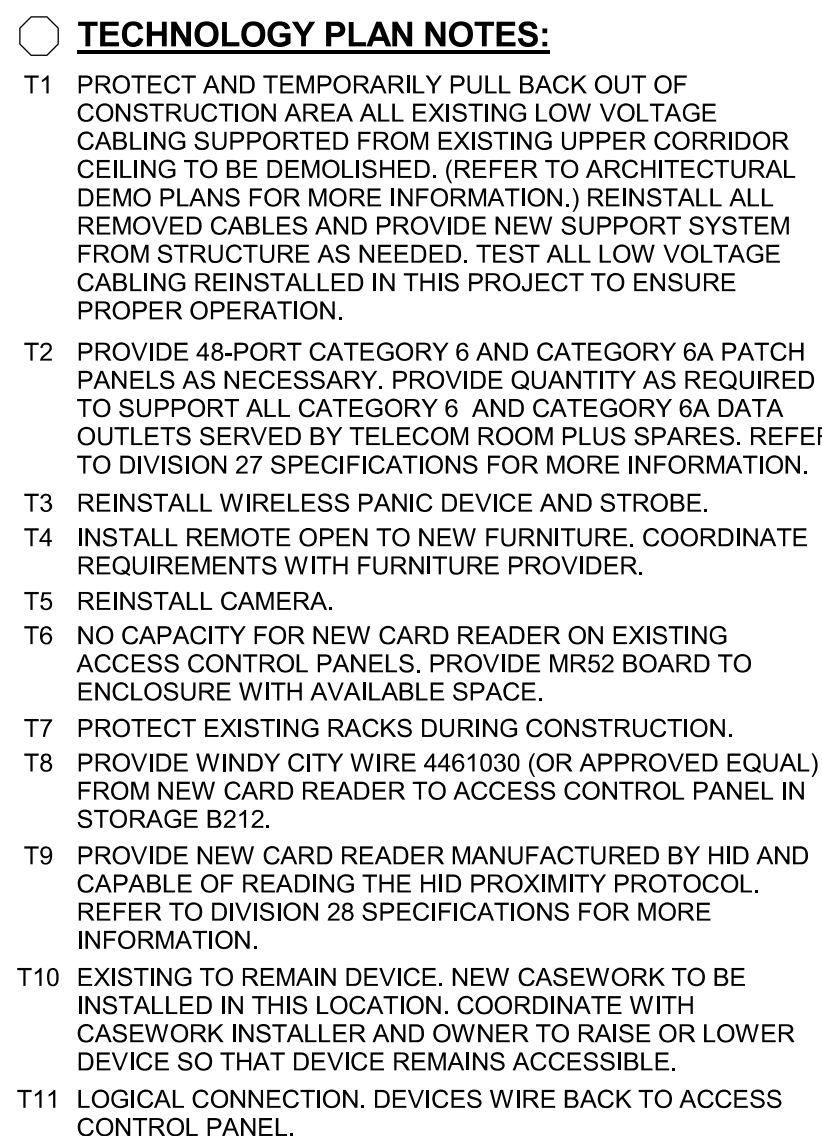
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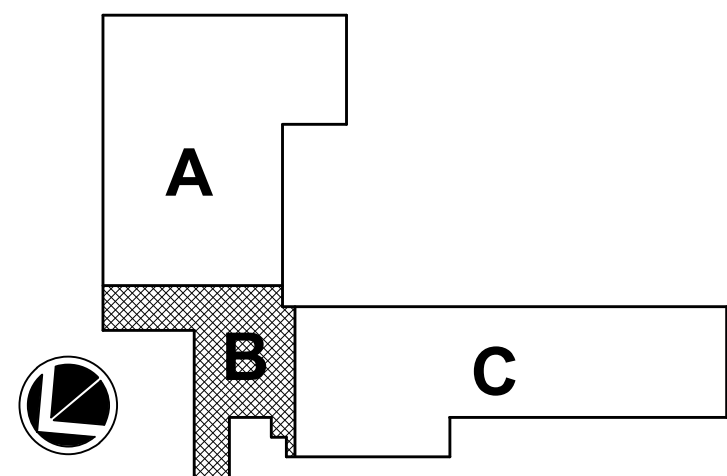
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① TECHNOLOGY LEVEL 2 PLAN - AREA B
1/8" = 1'-0"

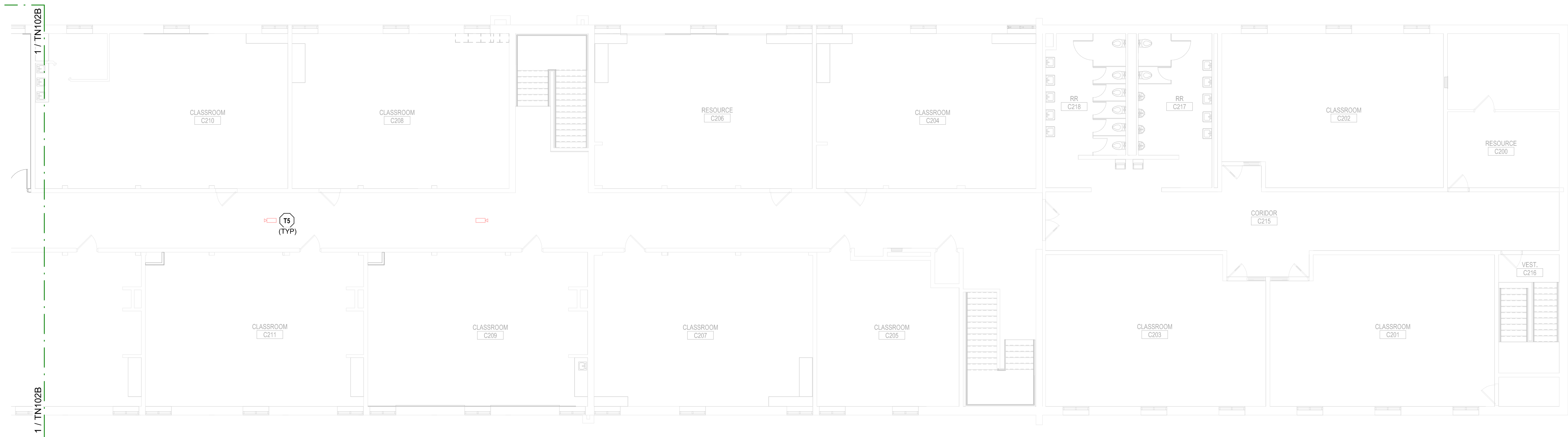
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① TECHNOLOGY LEVEL 2 PLAN - AREA C
1/8" = 1'-0"

○ TECHNOLOGY PLAN NOTES:
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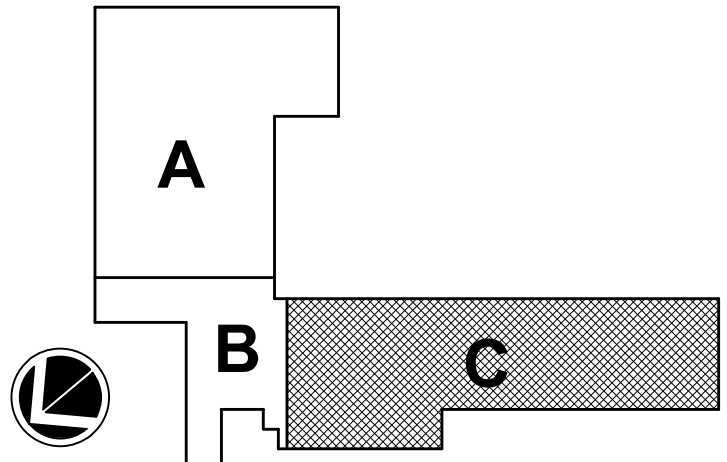
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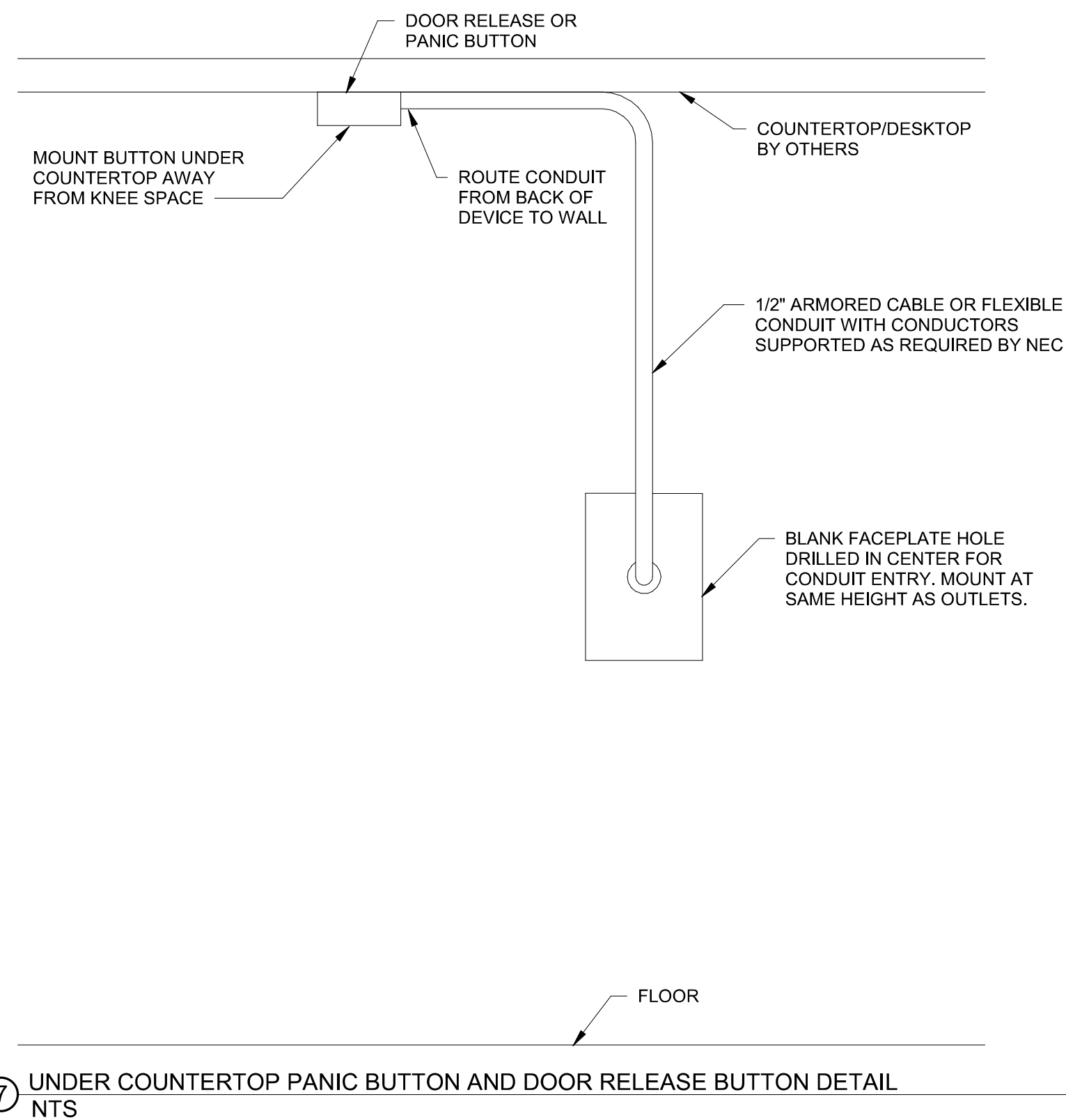
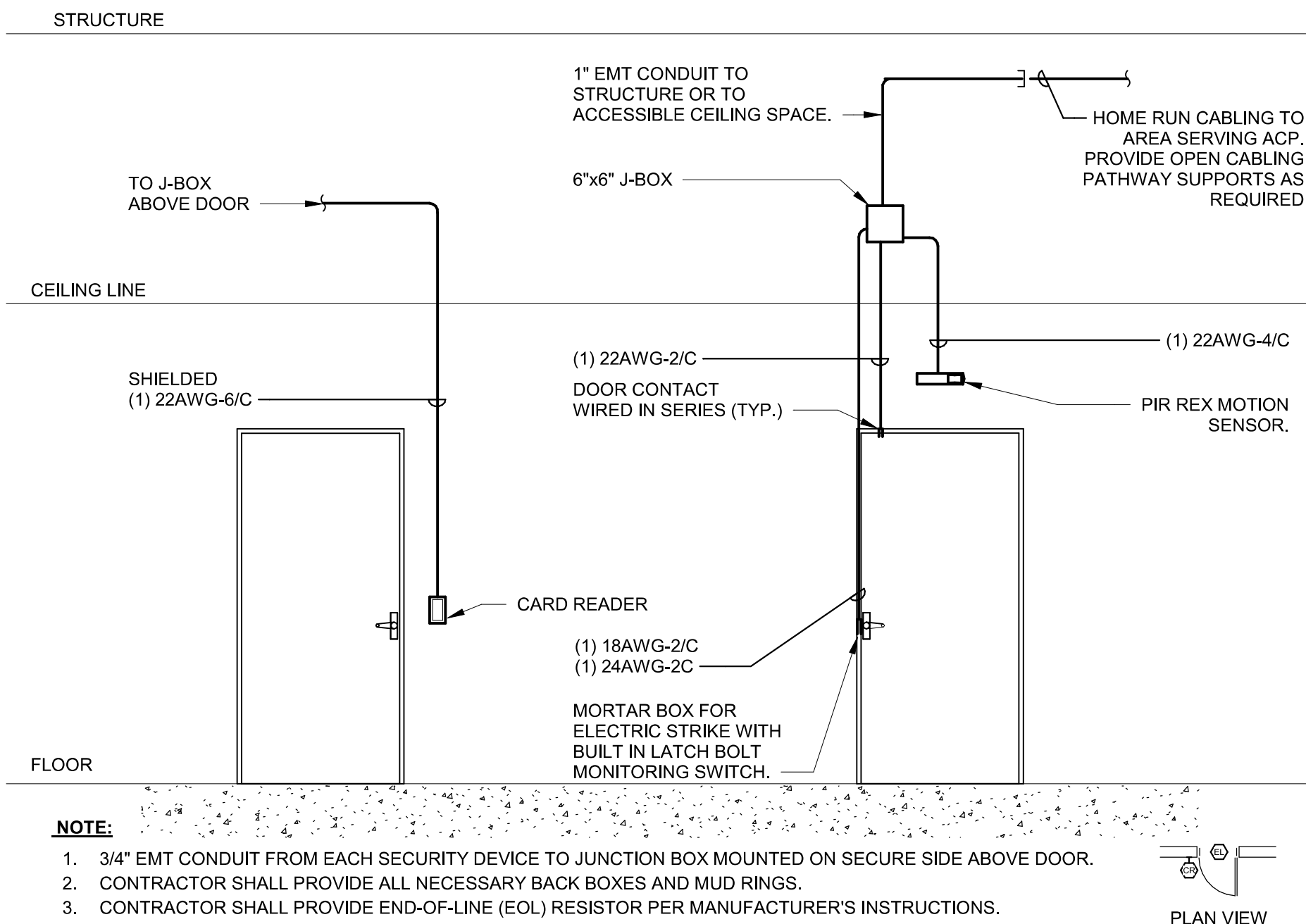
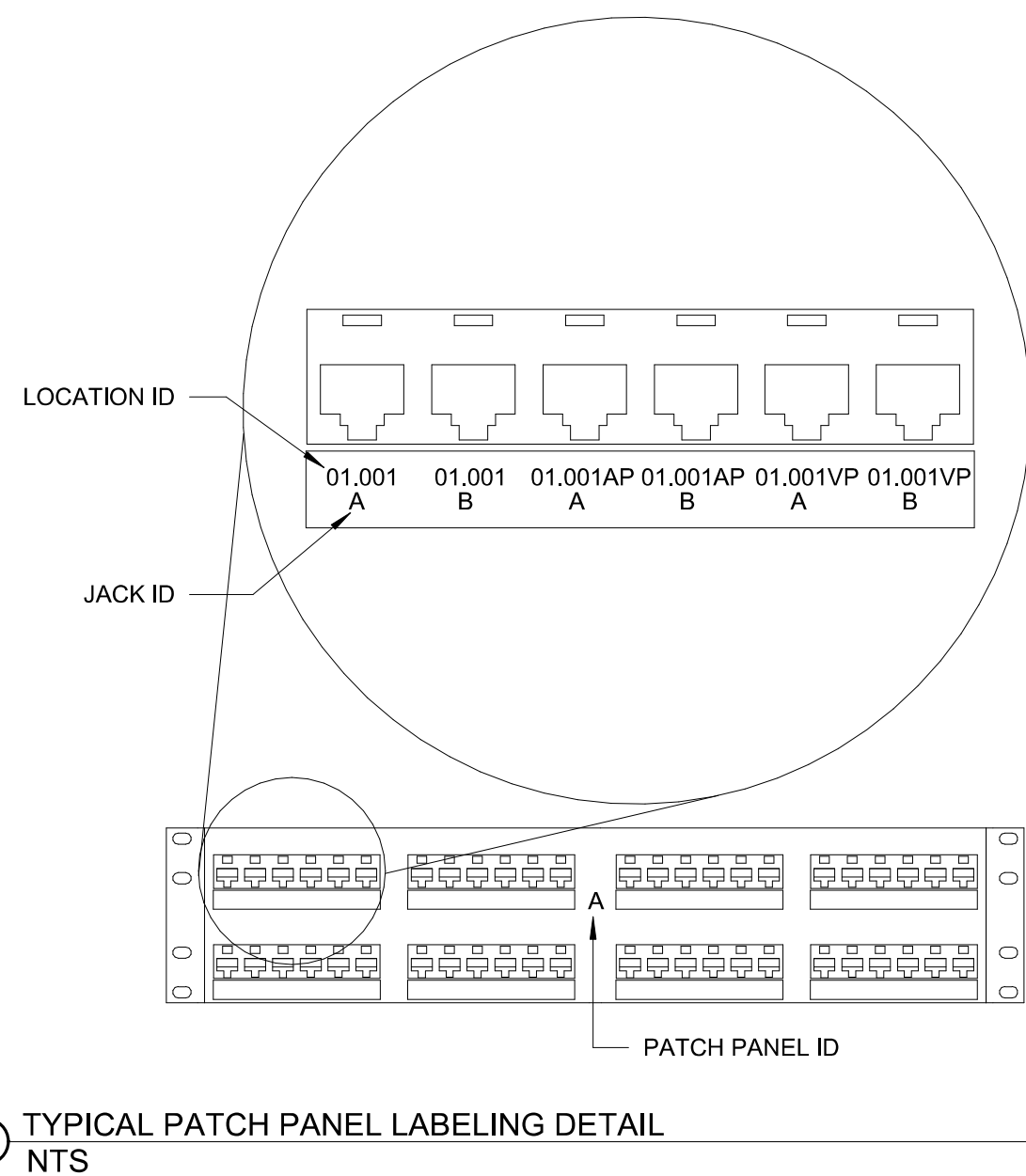
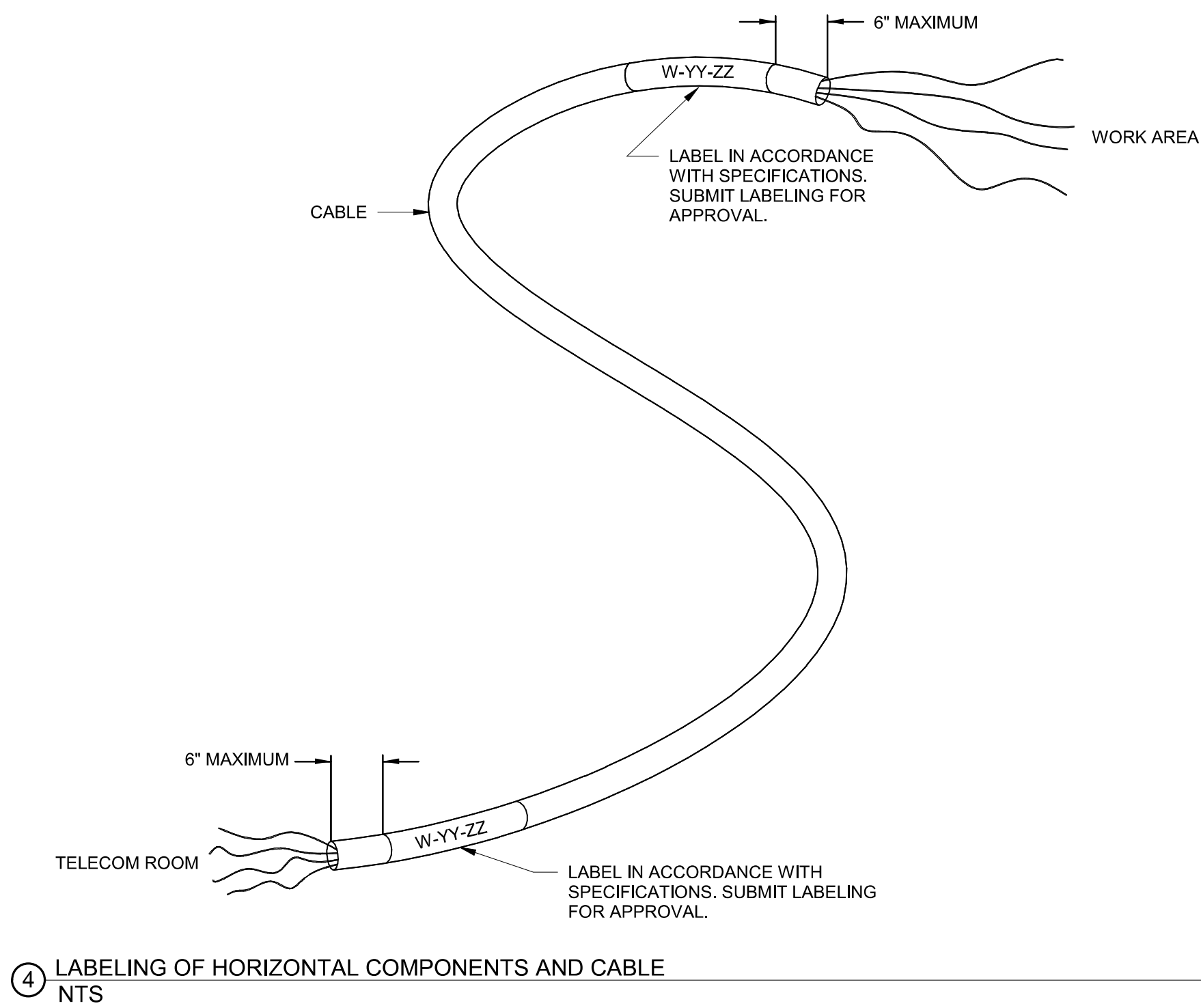
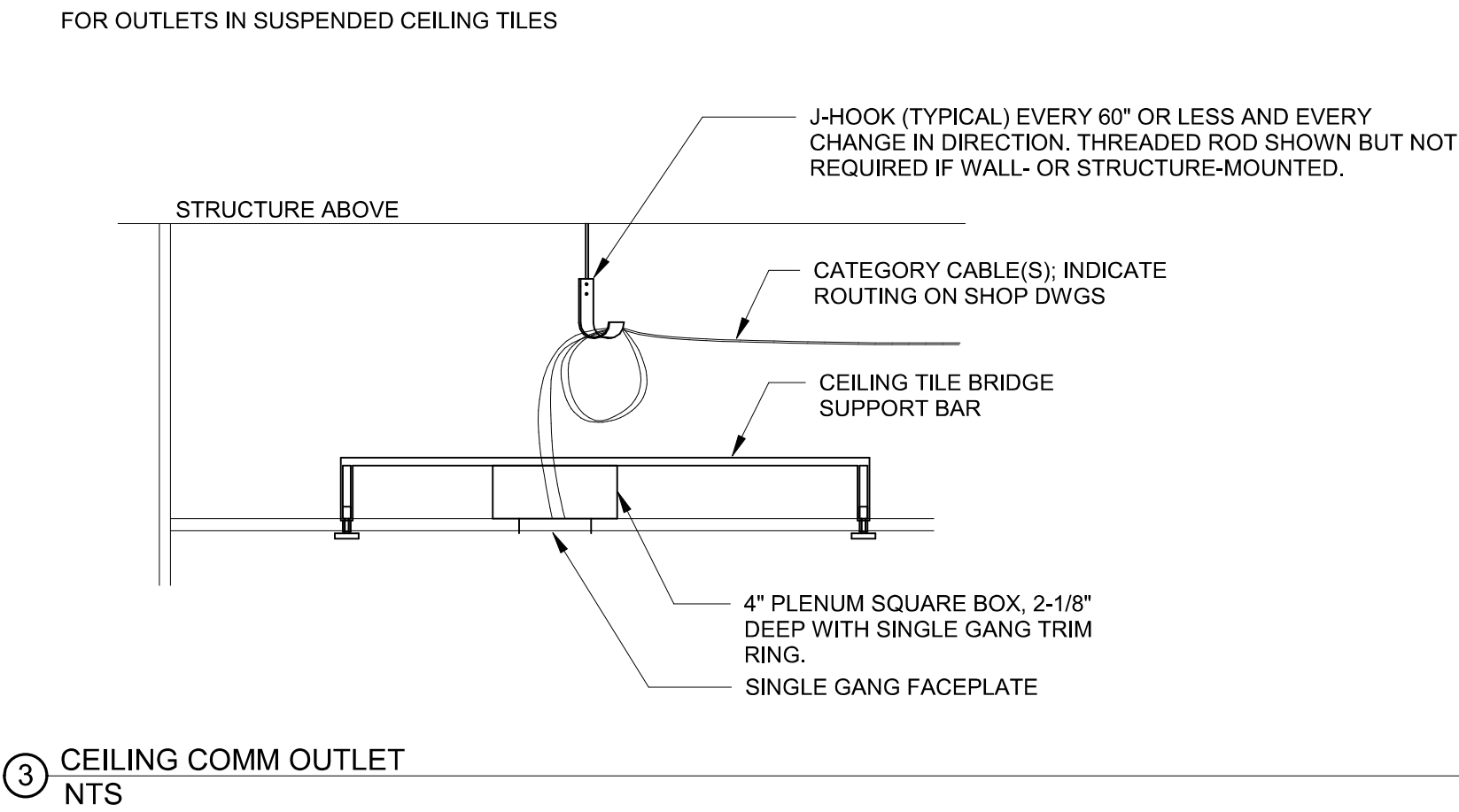
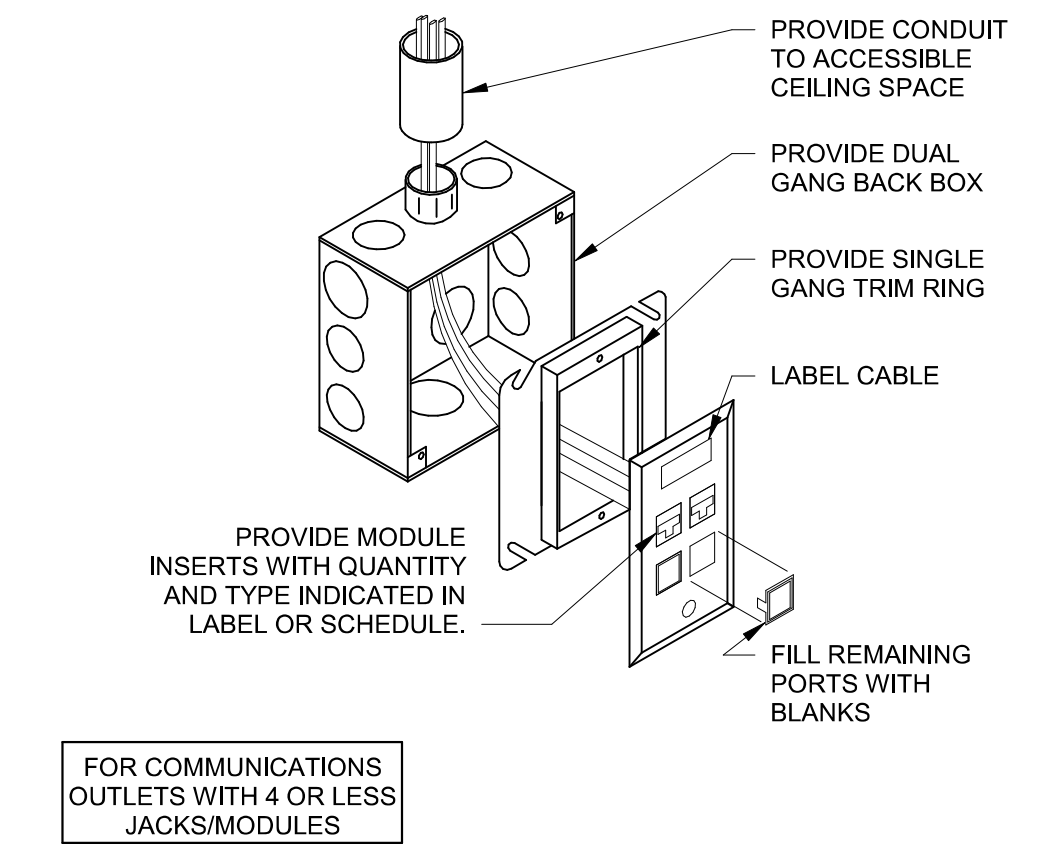
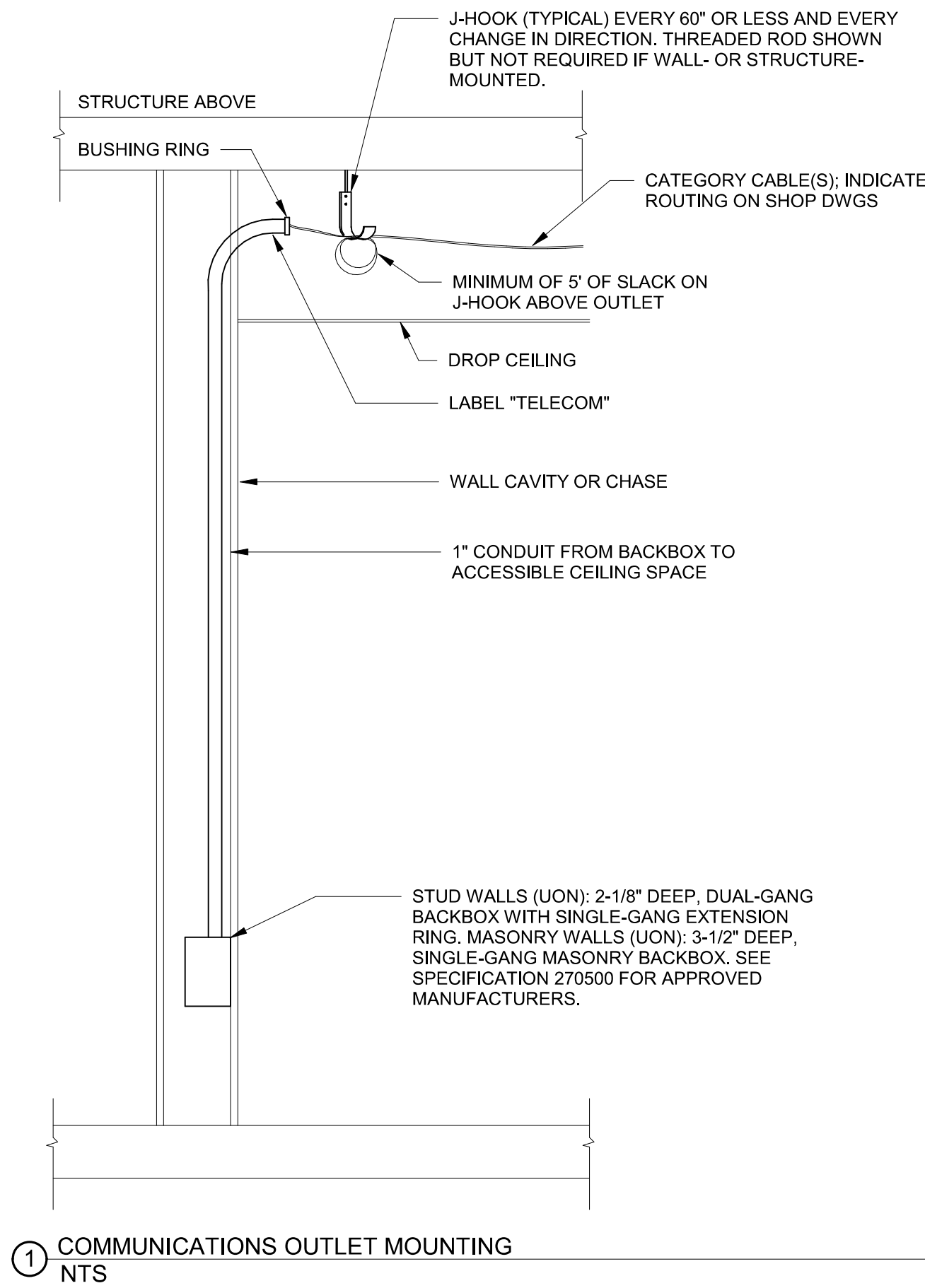
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KEY PLAN



TECHNOLOGY LEVEL 2 PLAN - AREA C



TYPICAL LABELING SCHEME FOR HORIZONTAL COMPONENTS

W - YY - ZZ

COMMUNICATIONS ROOM DESIGNATION (SINGLE LETTER), PROVIDED BY SCHOOL DISTRICT

PANEL# (01, 02, 03, ETC.)

2-DIGIT PORT # (01,02,03,ETC.)

W - IDENTIFIES THE DATA ROOM LETTER FROM WHICH THE OUTLET IS SERVED FROM

YY - IDENTIFIES THE OUTLET LOCATION. BEGIN LABELING WITH 01 IN EACH ROOM AT THE NORTHWEST CORNER INCREMENTING BY 05 EVERY OUTLET IN A CLOCKWISE MANNER AROUND THE ROOM.

ZZ - IDENTIFIES THE INDIVIDUAL OUTLET AND CABLE. BEGIN LABELING WITH 01 IN THE TOP LEFT CORNER OF FACEPLATE AT THE WORK AREA AND INCREMENT BY ONE FOR EVERY PORT OPENING FROM LEFT TO RIGHT AND TOP TO BOTTOM

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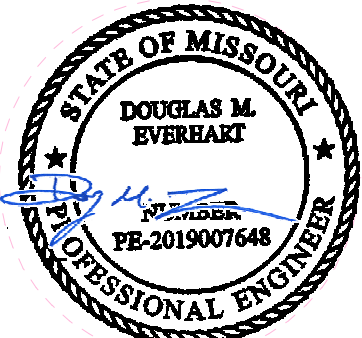
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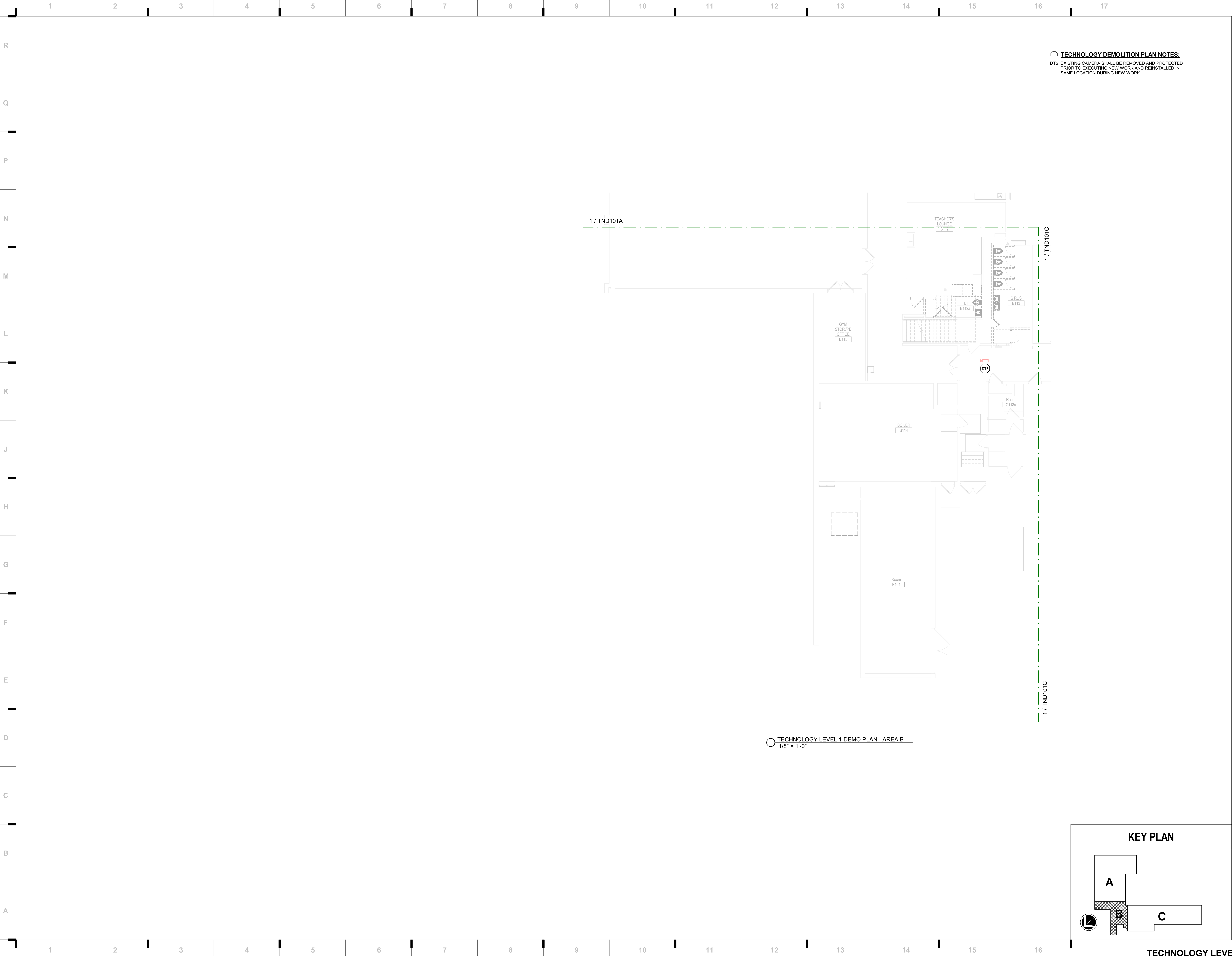


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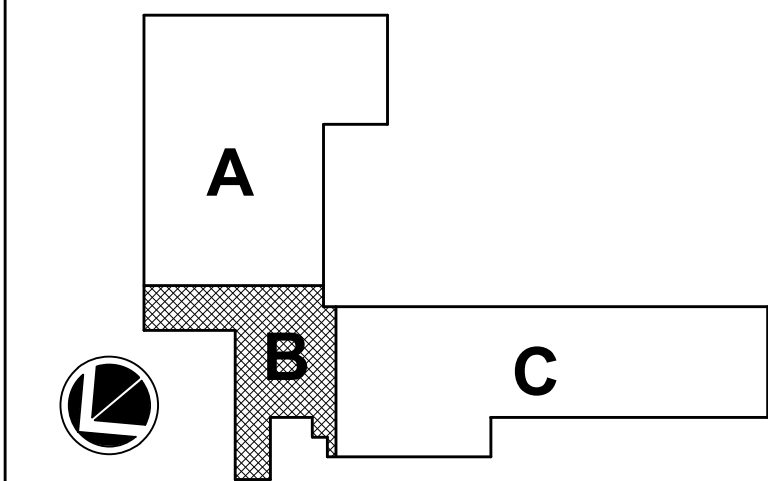
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○ **TECHNOLOGY DEMOLITION PLAN NOTES:**
DTS EXISTING CAMERA SHALL BE REMOVED AND PROTECTED
PRIOR TO EXECUTING NEW WORK AND REINSTALLED IN
SAME LOCATION DURING NEW WORK.

① **TECHNOLOGY LEVEL 1 DEMO PLAN - AREA B**
1/8" = 1'-0"

KEY PLAN



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TECHNOLOGY LEVEL 1 DEMO PLAN - AREA B

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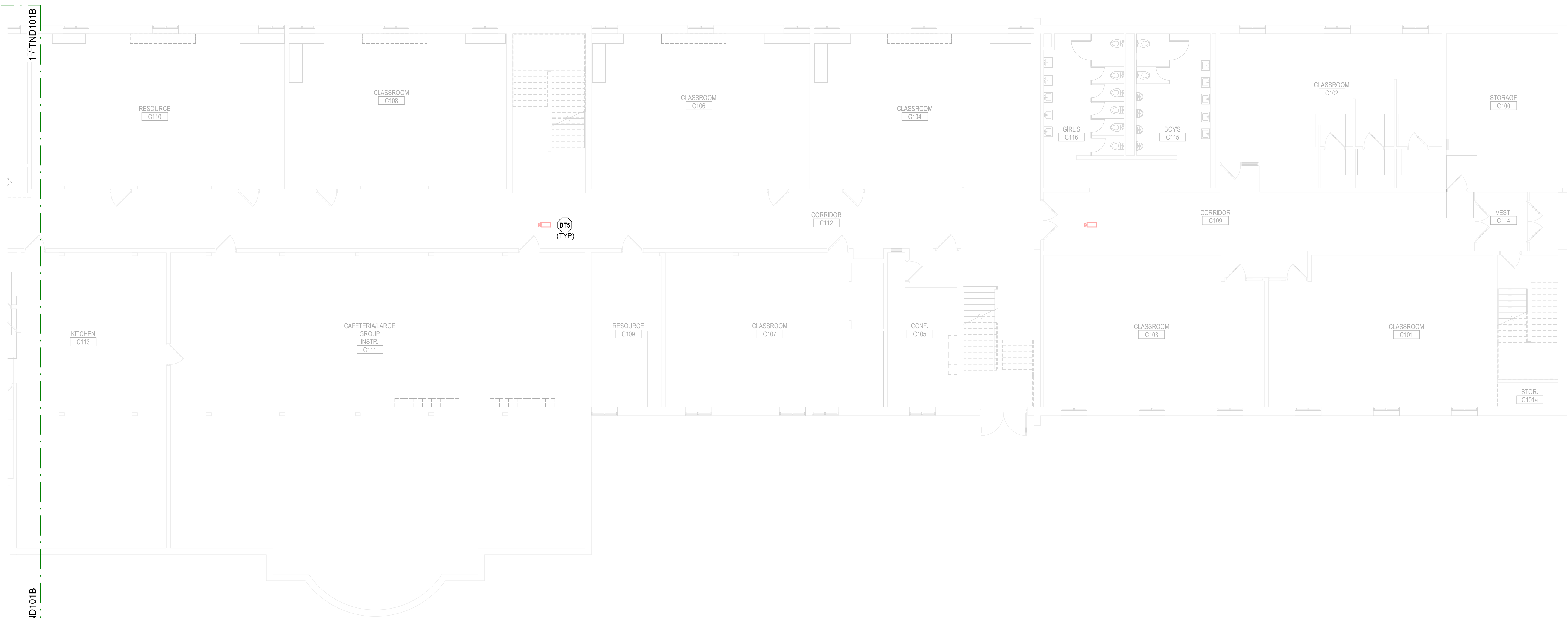
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① TECHNOLOGY LEVEL 1 DEMO PLAN - AREA C
1/8" = 1'-0"

○ TECHNOLOGY DEMOLITION PLAN NOTES:
DT5 EXISTING CAMERA SHALL BE REMOVED AND PROTECTED
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Ridgeview Elementary School

Liberty Public Schools
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Liberty, MO 64068

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#	Description	Date
1	Addendum 1	12.08.23



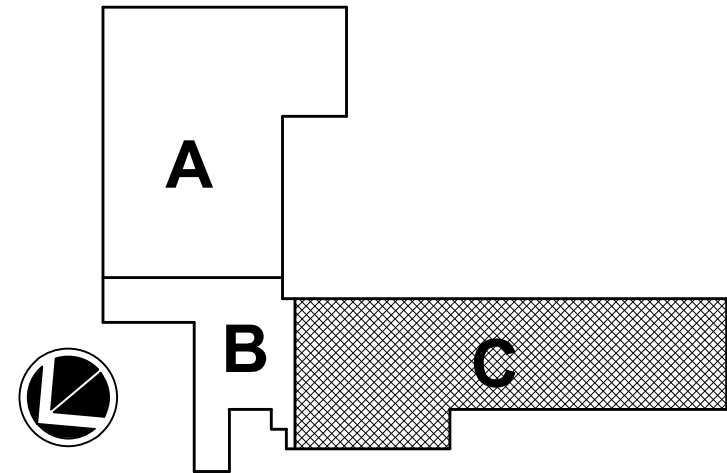
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TECHNOLOGY LEVEL 1 DEMO PLAN - AREA C

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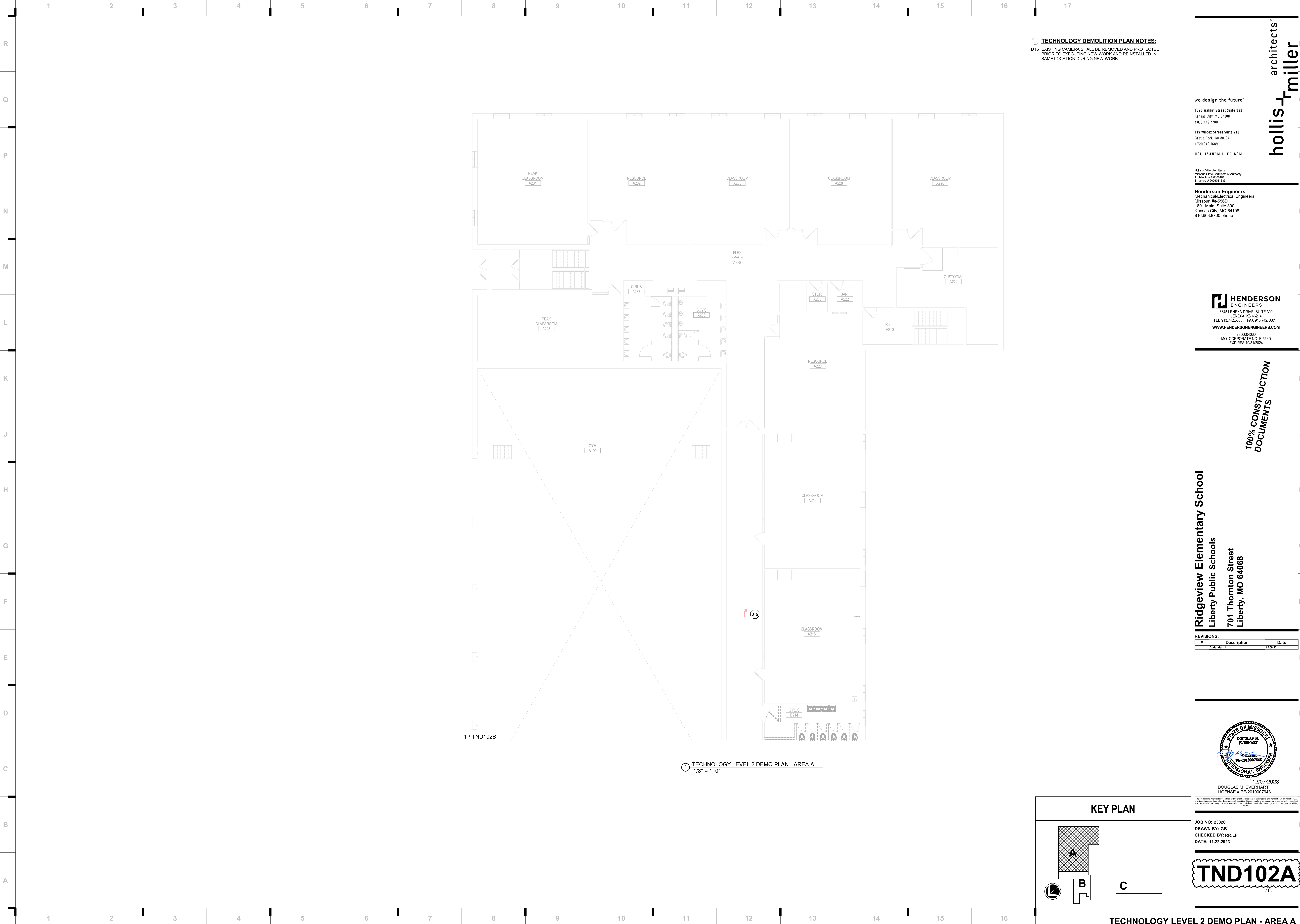
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Mechanical/Electrical Engineers
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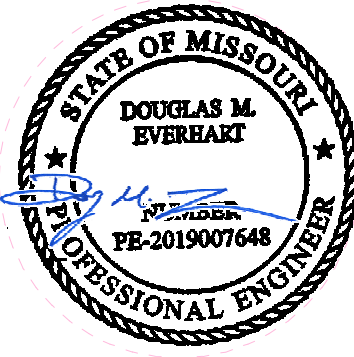
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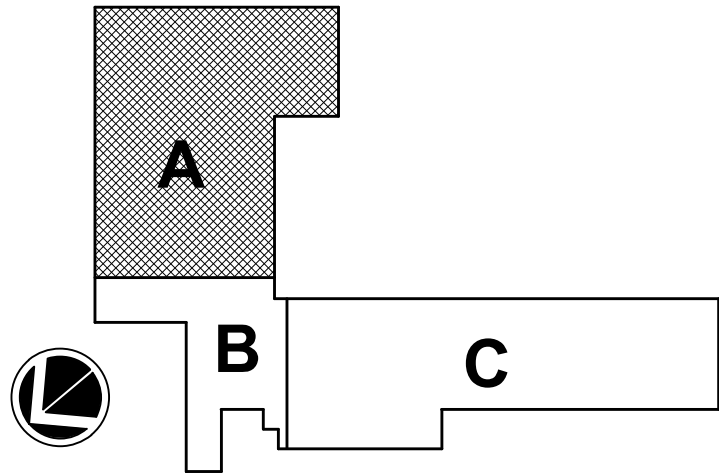
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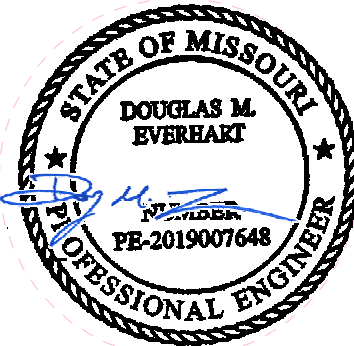


TECHNOLOGY LEVEL 2 DEMO PLAN - AREA A

Ridgeview Elementary School

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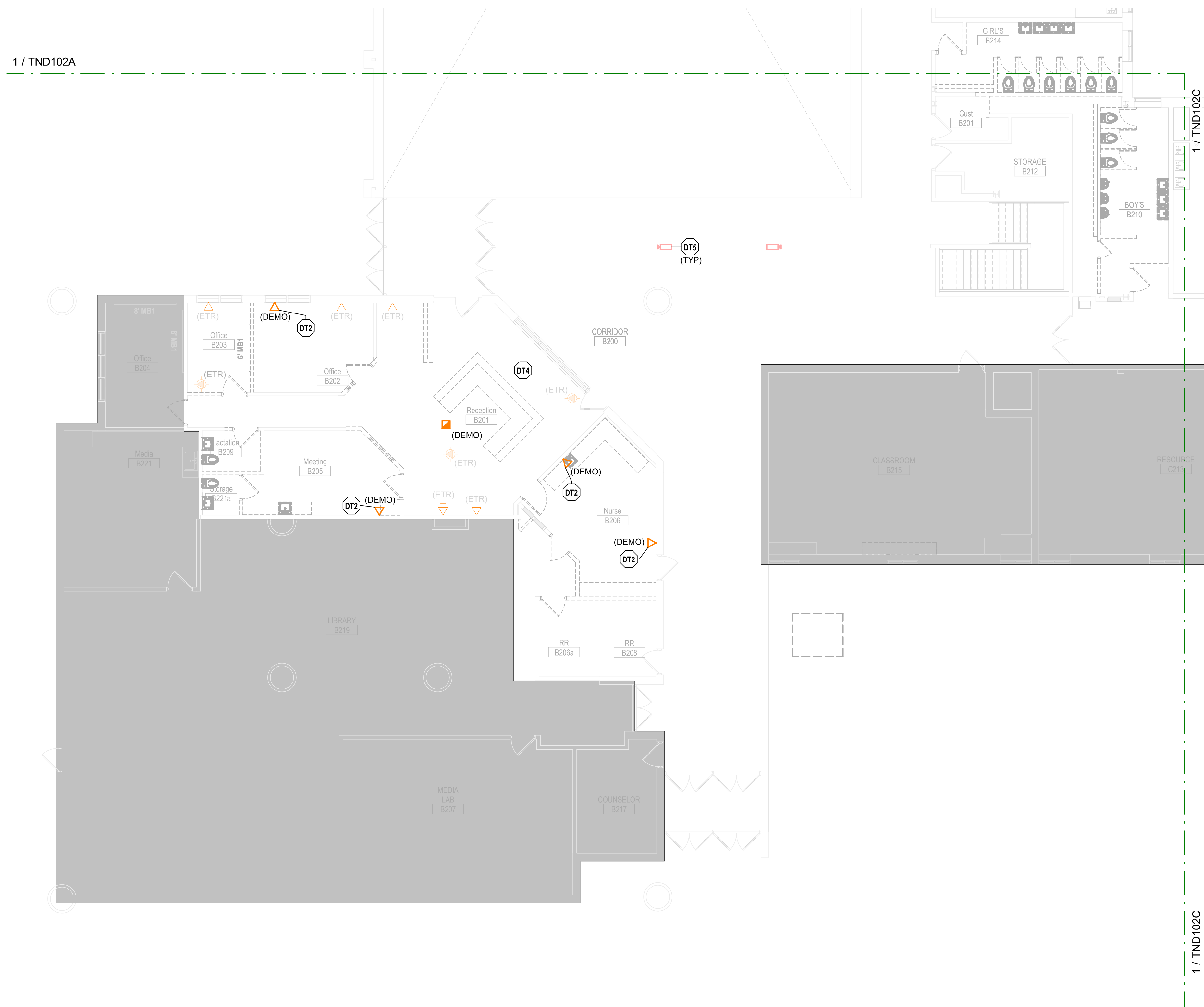
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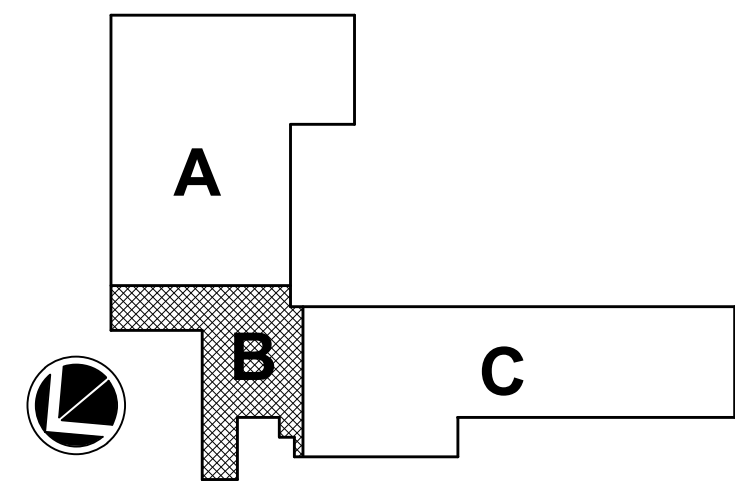
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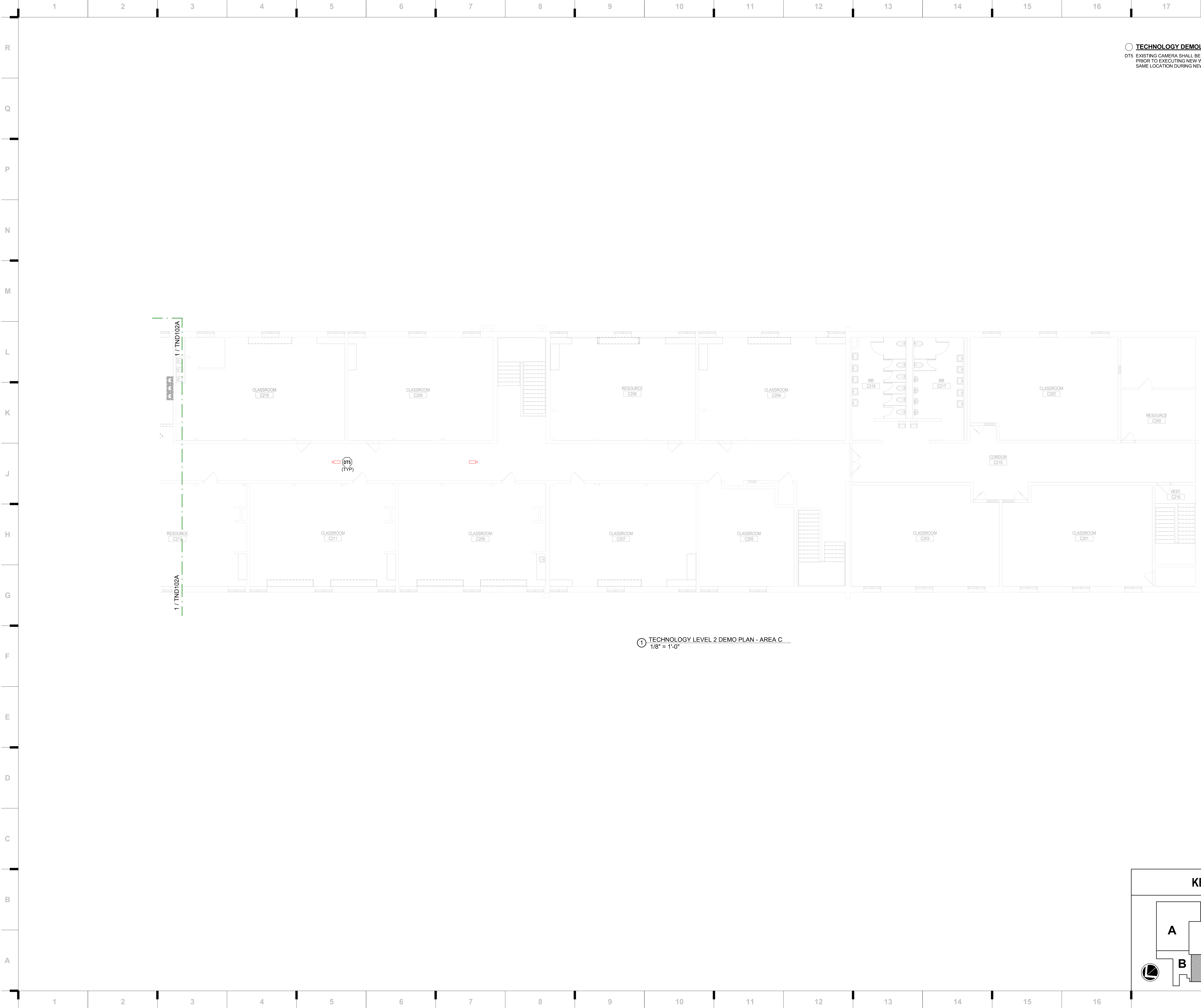
① TECHNOLOGY LEVEL 2 DEMO PLAN - AREA E
1/8" = 1'-0"

KEY PLAN



TECHNOLOGY LEVEL 2 DEMO PLAN - AREA B

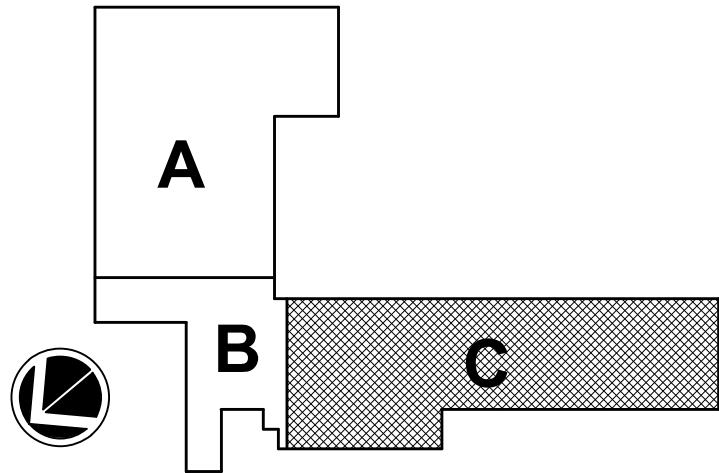
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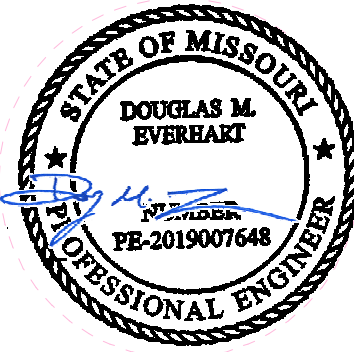
① TECHNOLOGY LEVEL 2 DEMO PLAN - AREA C
1/8" = 1'-0"

KEY PLAN



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