SUPPLEMENT NO. 2

COVER SHEET

Florida State University
Bio Unit One – 2nd Floor Teaching Labs

Bid Packages
All Remaining

This supplement is a part of the contract documents.

This supplement consists of Item 1:

Item 1	-	Addendum #1

End of Supplement Number 2
Dated this 28th of August 2025.

CHILDERS
CONSTRUCTION CO.

Addendum 01

Date:	08/25/2025	Project:	FSU Bio Unit One, Teaching Labs
AD#:	01	Architect's Proj. No.:	23055
To:	Wallis Walker, Project Manager Childers Construction 3472 Weems Road Tallahassee, FL 32317	Owner:	Mary Jo Spector, Director of Research Facilities, Design, Construction, and Maintenance Florida State University Mendenhall A 969 Learning Way Tallahassee, FL 32306

This Addendum is issued to the Bidders on the above referenced project to modify or interpret previously issued documents and is incorporated into the project Contract Documents.

Description: Revisions to CONSTRUCTION DOCUMENTS, dated 08/12/2025, as described below.

AD-1.1. **SPECIFICATION: 00 0110 / TABLE OF CONTENTS:** Revise this section as follows:
- **a.** Add DIVISION 11 – EQUIPMENT section 11 5314 – Fume Extractors to the TOC.

AD-1.2. **SPECIFICATION: 09 3000 / TILING:** Revise this section as follows:
- **a.** Revise grout color.

AD-1.3. **SPECIFICATION: 11 5314 / FUME EXTRACTORS:** Add this specification section to the Contract Documents.
- **a.** Added missing specification for proposed snorkels.

AD-1.4. **DRAWING: A122 / LEVEL 2 PARTITION PLAN:** Replace this sheet in its entirety with the attached revised sheet.
- **a.** Added and revised plan dimensions.

AD-1.5. **DRAWING: A132 / LEVEL 2 CEILING PLAN:** Replace this sheet in its entirety with the attached revised sheet.
- **a.** Adjusted ceiling layouts in all classrooms, the office break/conference area, the study/huddle area, and corridor 2000B. This revision may have altered the light fixture count in some rooms.
- **b.** Changed the GWB soffits in Animal Diversity (2015) and Comparative Anatomy (2013) to the Axiom transition system and adjusted the grid to align with student table arrangement.
- **c.** Changed the central ceiling height in Comparative Anatomy (2013) to 8'-8".
- **d.** Added Axiom transition system to the south side of teaching lab (2007) and general biology (2011).

AD-1.6. **DRAWING: A140 / ROOF PLAN:** Replace this sheet in its entirety with the attached revised sheet.
- **a.** Relocate new steel framing to align with new fan position.

AD-1.7. **DRAWING: A240 / ROOF DETAILS:** Replace this sheet in its entirety with the attached revised sheet.

a. Revised detail 2.

AD-1.8. **DRAWING: S101 / GENERAL STRUCTURAL NOTES AND ROOF PLAN:** Replace this sheet in its entirety with the attached revised sheet.

a. Revised location of new steel framing.
b. Revised plan notes.

AD-1.9. **DRAWING: S102 / SECTIONS AND DETAILS:** Replace this sheet in its entirety with the attached revised sheet.

a. Revised detail 3 notes.
b. Added new details 6 & 7.

AD-1.10. **DRAWING: M102 / LEVEL 2 MECHANICAL DUCT PLAN:** Replace this sheet in its entirety with the attached revised sheet.

a. a. Diffusers and grilles realigned for updated RCP.

AD-1.11. **DRAWING: M700 / AHU 2-1 MECHANICAL CONTROLS DIAGRAM:** Replace this sheet in its entirety with the attached revised sheet.

a. Relocated outside air damper downstream of energy recovery coil (ERC).
b. Identified fail positions for outside air and return air dampers.
c. Added fire alarm shutdown relay to VFD control points and associated keynote #3.
d. Clarified verbiage on keynote #1.
e. Clarified verbiage in control sequence relating to Cooling Coil Temperature Control and Cooling Coil Temperature Setpoint Reset Control.
f. Added setpoint column to controls pointlist table.
g. Added table note (4) to controls pointlist table.

AD-1.12. **DRAWING: M800 / MECHANICAL DETAILS:** Replace this sheet in its entirety with the attached revised sheet.

a. Revised coil branch pipe sizes on Detail #2.
b. Removed strainer from Energy Recovery Coil Piping detail (Detail #4).
c. Replace swing valve with shut-off valve on In-Line Booster Pump detail (Detail #6).

AD-1.13. **DRAWING: M801 / MECHANICAL DETAILS:** Replace this sheet in its entirety with the attached revised sheet.

a. Revised Roof Duct Supports detail (Detail #1) and added Vertical Fire Damper Installation detail (Detail #2).
b. Revised AHU 2-1 Component Detail (Detail #4).
c. Corrected LEF 2-1,2 Component Detail (Detail #5) to show combination roof curb.
d. Revised AHU 2-2 Component Detail (Detail #6).
e. Removed makeup line and associated accessories and detail keynote for Expansion Tank detail (Detail #8).

AD-1.14. **DRAWING: M900 / MECHANICAL SCHEDULES:** Replace this sheet in its entirety with the attached revised sheet.

a. Revised scheduled performance values and/or modified schedule notes for the following schedules:
i. Semi-Custom Air Handling Units
ii. Return Fans
iii. Laboratory Exhaust Fans,
iv. Supply Air Terminal Devices

v. Variable Volume Laboratory Air Terminals
vi. Energy Recovery Coils
vii. Energy Recovery Pump

AD-1.15. **DRAWING: E102 / ELECTRICAL LIGHTING PLAN:** Replace this sheet in its entirety with the attached revised sheet.

a. Lighting realigned for updated RCP.

AD-1.16. **DRAWING: E703 / FIRE ALARM RISER DIAGRAM, DETAILS, AND MATRIX:** Replace this sheet in its entirety with the attached revised sheet.

a. Removed Fire alarm smoke damper control detail.

AD-1.17. **DRAWING: E900 / ELECTRICAL SCHEDULES:** Replace this sheet in its entirety with the attached revised sheet.

a. Changed LEF 2-2 CB to match design.
b. GEF 2-1 controls by div. 23.
c. Updated ERP 2-1 load per mechanical.

Best Regards,

Ken Lutz, RA
Senior Architect

SECTION 00 0110
TABLE OF CONTENTS

END OF SECTION

SECTION 09 3000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Cementitious backer board as tile substrate.

D. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017.

B. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship; 2019.

E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.

F. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.

G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.

H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2024).

I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.

J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).

K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

L. ANSI A108.12 - Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Modified Dry-Set Mortar; 2023.

M. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2021).

N. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.

O. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.

P. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.

Q. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2019.

R. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

S. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2014 (Reaffirmed 2019).

T. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).

U. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2019.

V. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

W. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2021.

X. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

Y. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2021.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, trim, and accessories. Include instructions for using grouts and adhesives.

C. Sustainable Design Submittals:
   1. Environmental Product Declaration (EPD): For each product.
   2. Health Product Declaration: For each product.
   3. Product Data: Provide manufacturer's data sheets on adhesives indicating VOC content.
   4. Laboratory Test Reports: Indicate compliance with requirements for low-emitting materials, including adhesives and sealers.

D. Shop Drawings: Indicate tile layout, patterns, junctions with dissimilar materials, control, contraction, isolation and expansion joints, setting details, and non-ceramic trim locations.

E. Samples for Verification:
   1. Minimum 6 by 6 inch sample of each type and composition of tile for each color and finish required.

F. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Tile: 1 percent of each size, color, and surface finish combination.
   3. Extra Grout: 3 percent of amount installed for each type, composition and color indicated.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
   1. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
      a. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
   2. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
      a. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
      b. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.
   3. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
      a. Cementitious backer units.
      b. Metal edge strips.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.
   2. Accredited Five-Star member of the National Tile Contractors Association (NTCA) or Trowel of Excellence member of the Tile Contractors' Association of America (TCAA).
   3. Installer Certification:
      a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).
      b. Apprenticeship Program: Installer has achieved Journeyworker status through an apprenticeship from the International Union of Bricklayers and Allied Craftworkers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
      c. Advanced Certifications for Tile Installers (ACT): Certification in the installation of membranes, mortar bed (mud) floors, mortar (mud) walls, shower receptors, large format tile, and grouts.
      d. International Masonry Training and Education Foundation (IMTEF): Supervisor Certification Program (SCP).

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

D. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products of each type by the same manufacturer.
   1. Substitutions: See Section 01 6000 - Product Requirements.

B. Glazed Wall Tile, Type T1: ANSI A137.1 standard grade.
   1. Manufacturer: Garden State Tile

2. Product: Uptown
3. Size: 4 by 16 inch, nominal.
4. Surface Finish: Matte glaze.
   Color: Vintage Grey.
5. Pattern: as indicated in Drawings.
6. Bond Coat Type: Latex-Portland Cement.
7. Grout Color: Mapei, 5077 Frost
8. Grout Joint: 1/8"

C. Glazed Wall Tile, Type T3: ANSI A137.1 standard grade.
1. Manufacturer: Garden State Tile
2. Product: Outfit Hexagon
3. Size: 6 by 7, nominal.
4. Surface Finish: High gloss.
   Color: Smoke.
5. Bond Coat Type: Latex-Portland Cement.
6. Grout Color: Mapei, 5103 Cobblestone
7. Grout Joint: 1/8"

D. Quarry Tile, Type T4: ANSI A137.1 standard grade.
1. Manufacturer: Metropolitan Ceramics
2. Product: Quarry Basics
3. Size: 8 by 8 inch, nominal.
4. Surface Finish: Unglazed.
5. Color(s): 710 Raven.
6. Pattern: Grid.
7. Bond Coat Type: Latex-Portland Cement.
8. Grout Color: _____
9. Grout Joint: 1/8"
10. Trim Units: Matching cove base shapes in sizes coordinated with field tile.

E. Porcelain Tile, Type T2: ANSI A137.1 standard grade.
1. Manufacturer: Garden State Tile
2. Product: Bestow
3. Size: 24 by 48 inch, nominal.
4. Surface Finish: Textured.
5. Color(s): Arku Warm Gray.
6. Installation Pattern: As indicated in Drawings.
7. Bond Coat Type: Improved Latex-Portland Cement.
8. Grout Color: ~~[Mapei, 5027 Silver]~~Mapei, 5107 Iron
9. Grout Joint: 1/8"
10. Trim Units: Matching bullnose shapes in sizes coordinated with field tile.

2.02 TRIM AND ACCESSORIES

A. Non-Ceramic Trim: Brushed stainless steel, style and dimensions to suit application, for setting using tile mortar or adhesive.
1. Applications:
   a. Open edges of wall tile.
      1) Product: Schluter Jolly Profile
      2) Accessories: Outside Corner
      3) Material and Finish: Stainless Steel Type 304
   b. Wall corners, outside~~.~~:
      1) Product: Schluter Jolly Profile
      2) Accessories: Outside Corner
      3) Material and Finish: Stainless Steel Type 304

c. Transition between floor finishes:
1) Product: Schluter Reno-U
2) Material and Finish: Stainless Steel Type 304
2. Manufacturers:
a. Schluter-Systems: www.schluter.com/#sle.
b. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SETTING MATERIALS

A. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
1. Products:
a. Mapei ; Ultraflex 1
b. Substitutions: See Section 01 6000 - Product Requirements.

B. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
1. Products:
a. Mapei ; Ultraflex 3
b. Substitutions: See Section 01 6000 - Product Requirements.

2.04 GROUTS

A. Manufacturers:
1. Mapei
2. Substitutions: See Section 01 6000 - Product Requirements.

B. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout
1. Applications: Floor and Typical floor and floor wall base, unless otherwise indicated.
2. Color(s): As indicated.
3. Products:
a. Mapei, Kerapoxy CQ
b. Substitutions: See Section 01 6000 - Product Requirements.

2.05 ACCESSORY MATERIALS

A. Waterproofing and Crack Isolation Membrane: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
1. Crack Resistance: No failure at 1/16 inch gap, minimum; comply with ANSI A118.12.
2. Fluid or Trowel Applied Type:
a. Material: Synthetic rubber or Acrylic.
b. Thickness: 25 mils, minimum, dry film thickness.
c. Products:
1) Mapei: Mapelastic AquaDefense
2) ARDEX Engineered Cements; ARDEX 8+9: www.ardexamericas.com/#sle.
3) H.B. Fuller Construction Products, Inc; TEC HydraFlex Waterproofing Crack Isolation Membrane: www.tecspecialty.com/#sle.
4) LATICRETE International, Inc; LATICRETE HYDRO BAN: www.laticrete.com/#sle.
5) Merkrete, by Parex USA, Inc; Merkrete Hydro Guard 1: www.merkrete.com/#sle.
6) Substitutions: See Section 01 6000 - Product Requirements.

B. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 5/8" inch thick; 2 inch wide coated glass fiber tape for joints and corners.
1. Products:
a. Durock
b. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.

D. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

E. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
   1. Test as Follows:
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
   2. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
   3. Follow moisture and alkalinity remediation procedures in Section 09 0561.

F. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.19 , manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install non-ceramic trim in accordance with manufacturer's instructions.

G. Install thresholds where indicated.

H. Sound tile after setting. Replace hollow sounding units.

I. Keep control and expansion joints free of mortar, grout, and adhesive.

J. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

K. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

L. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with grout indicated.
   1. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.

B. Install tile-to-tile floor movement joints in accordance with TCNA (HB) Method EJ171F.

3.05 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.

B. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat.

3.06 CLEANING

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
   1. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION

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SECTION 11 5314
FUME EXTRACTORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fume extractors.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Above-ceiling supports and/or bracing.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.

B. ANSI Z9.5 - Laboratory Ventilation; 2022.

C. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes; 2017.

D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

F. ASTM D5857 - Standard Specification for Polypropylene Injection and Extrusion Materials Using ISO Protocol and Methodology; 2017.

G. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the installation of fume extractors with laboratory casework and general lab exhaust system.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

C. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Fume extractor(s) dimensions and construction, utility and service requirements and locations, reach range diagrams.

C. Shop Drawings: Indicate locations, large scale plans, elevations, cross sections, rough-in dimensions and tolerances, clearances required, locations and types of mounting accessories.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Manufacturer's Installation Instructions: Indicate special installation requirements.

F. Operation Data: Include description of fume extractor(s) operation and required adjusting and testing.

G. Maintenance Data: Identify system maintenance requirements, servicing cycles, lubrication types required and local spare part sources.

H. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with minimum three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces during handling and installation with protective covering of polyethylene film or another suitable material.

1.08 FIELD CONDITIONS

A. Ambient Conditions: Maintain temperature and relative humidity at occupancy levels during and after installation of fume extractors.

1.09 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Provide two-year manufacturer warranty for manufacturer's standard items (listed by part number in manufacturer's official publication).

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Alsident System A/S - www.alsident.com/#sle.

B. Nederman - www.nederman.com/#sle.

C. Plymovent - www.plymovent.com/#sle.

D. MoveX - www.movexinc.com.

E. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MANUFACTURED UNITS

A. Basis of Design Manufacturer: MoveX - ME STD.

B. Fume Extraction Arms - General: Local exhaust ventilation device connected to facility air exhaust system.
   1. Extraction systems consisting of:
      a. Multiple articulated rigid arms connected with rotating joints.
      b. Fume collection hood.
      c. Mounting connectors and brackets.
   2. System capable of 360 degrees rotation at joints, with a damper at one of the joints, and thumbscrews for fixing the angle of each arm.
   3. Fume Extraction Arm:
      a. Application: Common fumes, no requirements for anti-static or increased chemical resistance.
      b. System Diameter: 2.95 inches.
      c. Exhaust Capacity (Optimal Airflow Range): 65-140 CFM.
      d. Maximum Noise: Noise at maximum airflow: 57 dB(A).
      e. Maximum Fume Temperature: 158 degrees F.
      f. Main System: Three-arms.
         1) Ceiling Connector: Manufacturer's standard, for ceiling mounting.
         2) Ceiling Connector Joint: White.
         3) Upper Arm: Aluminum tube.
         4) Middle Connector Joint: White.
         5) Lower Arm: Aluminum tube.
         6) Joint with Damper: White.
         7) Damper Handle: Manufacturer's standard (if provided).
         8) Collection Hood Arm: Aluminum tube.
         9) Collection Hood: Round, aluminum, with anodized finish.

(a) Size: Round, 7 7/8 inch diameter.

10) Thumbscrews: Knurled head, diameter coordinated with hole in elbow.

g. Accessory components:

1) Ceiling Mounting Bracket: Manufacturer's standard mounting bracket for attaching fume extraction assembly to structure.

2) Extension Column/Arm: Manufacturer's standard extension.

3) Ceiling Cover Plate: Manufacturer's standard cover plate for use at ceiling penetration opening for Extension Column/Arm.

4) Support Collar/Bracket: Manufacturer's standard Collar/Bracket for bracing Upper Arm of system.

5) Ductwork Reducer Kit: Manufacturer's standard reducer, sized as required to connect fume extraction system to building's exhaust air duct.

6) Airflow Alarm: Manufacturer's standard audible and visual alarm, with adjustable airflow velocity alarm setpoint.

2.03 MATERIALS

A. Extruded Aluminum: ASTM B221 ASTM B221M.

1. Finish: Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 clear anodic coating not less than 0.7 mils thick.

B. Polypropylene: ASTM D5857.

1. Polyethylene Terephthalate Glycol (PETG): Transparent, thermo-formed.

C. Stainless Steel:

1. Stainless Steel Bars, Shapes and Moldings: ASTM A276/A276M, Type 316L.
2. Stainless Steel (bolts and thumbscrews): ASTM F593, Group 2 316L Alloy.

PART 3 EXECUTION

3.01 EXAMINATION

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

B. Coordinate locations with laboratory casework. Confirm installed fume extractor will allow opening doors, and access to contents, of adjacent wall (upper) cabinets.

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

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions and shop drawings.

B. Interface With Other Work: Interface with installation of above-ceiling supports and/or bracing, ceilings, laboratory casework, and other types of laboratory ventilation equipment and systems.

C. Systems Integration: Integrate fume extractors into overall exhaust system installation, including controls.

3.03 ADJUSTING

A. Adjust moving parts for smooth, near silent, operation with one hand.

3.04 CLEANING

A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.

B. Clean finished surfaces, touch up as required; and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

B. See Section 01 7900 - Demonstration and Training, for additional requirements.

C. Final Acceptance:

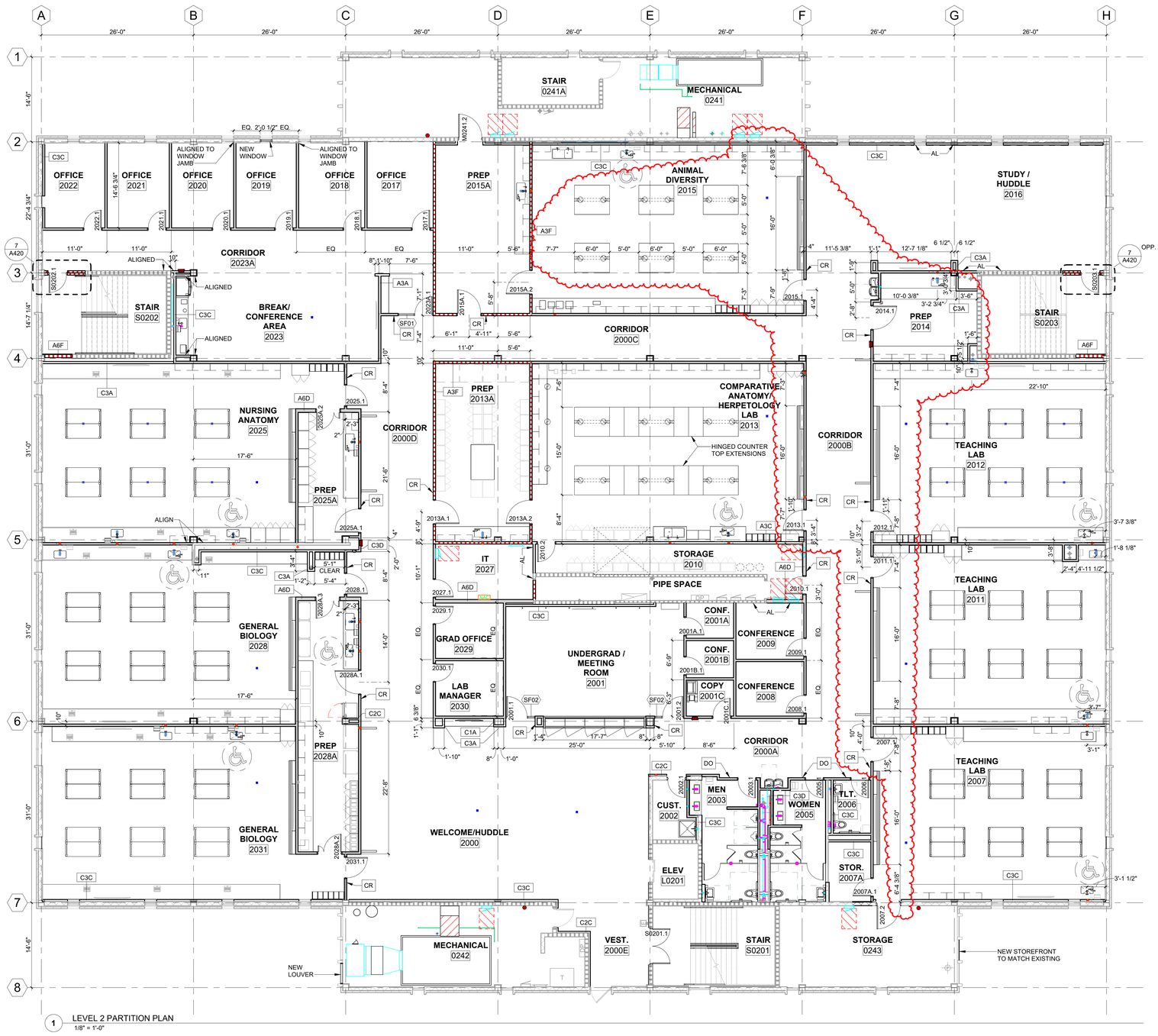
1. Remove labels, fingerprints, and clean all surfaces both inside and out.
2. Repair any marred or damaged surfaces that affect appearance, such as both interior and exterior of extractors in a manner acceptable to Owner.
3. Replace any parts that cannot be repaired in such a manner.

D. Demonstration: Demonstrate operation of fume extractors to Owner's personnel.
1. Use operation and maintenance data as reference during demonstration.
2. Briefly describe function, operation, and maintenance of each component.

3.06 PROTECTION

A. Protect installed local fume extractors from subsequent construction operations.

END OF SECTION



1 LEVEL 2 PARTITION PLAN
1/8" = 1'-0"

PARTITION PLAN SHEET NOTES

1. SEE WALL SECTIONS FOR EXTERIOR WALL ASSEMBLY INFORMATION.
2. SEE SHEET A152 FOR FLOOR SLAB PENETRATION COORDINATION.
3. SEE SHEET A400 FOR PARTITION TYPES AND DETAILS.
4. INTERIOR PARTITIONS ARE TYPE A3D UNLESS OTHERWISE INDICATED.
5. PROVIDE HEADERS TO STRUCTURE ABOVE AT INTERIOR STOREFRONT PARTITIONS.
6. PROVIDE IN WALL BACKING FOR WALL MOUNTED ITEMS.
7. PARTITIONS NOT DIMENSIONED ARE GENERALLY LOCATED BY ONE OF THE FOLLOWING CRITERIA:
   A. CENTERLINE - CENTER OF PARTITION ALIGNS WITH A STRUCTURAL GRIDLINE OR OBJECT CENTERLINE (SUCH AS WINDOW MULLION OR COLUMN).
   B. ALIGN - LOCATE PARTITION FLUSH WITH FACE OF GYPSUM BOARD OR OTHER SURFACE INDICATED
   C. MAINTAIN DIMENSIONS NOTED AS "MINIMUM" OR "CLEAR"
8. WHERE DOORS ARE LOCATED IN THE CORNER OF A ROOM WITHOUT A DIMENSION, PROVIDE 5" OF CLEARANCE TO ROUGH OPENING.
9. PROVIDE MINIMUM 1'-0" CLEAR AT PUSH SIDES OF DOORS AND 1'-6" CLEAR AT PULL SIDES OF DOORS UNLESS INDICATED OTHERWISE.
10. MOUNT SINKS AND LAVATORIES WITH A MINIMUM OF 1'-3" FROM THE CENTERLINE OF THE FIXTURE TO THE FINISH SURFACE OF ADJACENT WALLS.
11. WALL PRIORITY: WHERE RATED PARTITIONS INTERSECT OTHER RATED PARTITIONS OR UNRATED PARTITIONS, CONSTRUCT HIGHER RATED PARTITION CONTINUOUS AND ABUT THE LOWER RATED OR UNRATED PARTITION TO THE HIGHER RATED PARTITION.
12. MAINTAIN FIRE RATING INDICATED FOR EXISTING PARTITIONS.
13. WHERE NEW PARTITIONS EXTEND OR ABUT EXISTING PARTITIONS, ALIGN THE FINISH FACE OF THE NEW PARTITION WITH THE EXISTING PARTITION AND PROVIDE A TRANSITION WITHOUT VISIBLE SEAMS OR JOINTS.
14. PROVIDE COMMUNICATIONS ROOM BOARD ON ALL WALLS OF IT 2027, SEE 06 1000. 3/4" THICK AC GRADE PLYWOOD, 8' X 4' PANELS TRIMMED TO FIT WALL LENGTH. MOUNT WITH BOTTOM OF PANEL AT TOP OF WALL BASE. TOP OF PANEL AT 8'-4". INSTALL SMOOTH SIDE OUT. THE PLYWOOD SHALL BE VOID FREE AND PAINTED FRONT, BACK, AND EDGES PRIOR TO INSTALLATION. MOUNT ON TOP OF GYPSUM BOARD, NOT IN LIEU OF GYPSUM BOARD.

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TIMOTHY JAMES WILLIAMS, AIA
LICENSE NO.: AR94953

SUBMITTAL:	ISSUE DATE:
CONSTRUCTION DOCUMENTS	08/12/2025

REVISION	DESCRIPTION	DATE
2	ADDENDUM-01	08/25/2025

FSU BIO UNIT ONE TEACHING LABS

FLORIDA STATE UNIVERSITY,
89 CHIEFTAN WAY,
TALLAHASSEE, FL 32306

KEY PLAN

DRAWING TITLE:

LEVEL 2 PARTITION PLAN

PROJECT NO.:	23055-00	DRAWN BY:	TW
		CHECKED BY:	JMO

A122

1 LEVEL 2 CEILING PLAN
1/8" = 1'-0"

CEILING PLAN SHEET NOTES

1. CEILING ELEMENTS (LIGHTS, GRILLS, ETC...) SHOWN FOR LOCATION AND COORDINATION.
2. COORDINATE LOCATION, SIZE, AND REQUIREMENTS OF CEILING ELEMENTS WITH M/E/P/F DOCUMENTS.
3. SUSPENDED TILE CEILING GRIDS SHALL BE SET WITH EITHER A FULL TILE OR A GRID INTERSECTION OCCURRING AT THE CENTER OF THE CEILING EXPANSE SO AS TO ACHIEVE TILES OF EQUAL WIDTH AT OPPOSING SIDES OF THE CEILING. NO CEILING GRID CONFIGURATION SHALL RESULT IN A TILE AT ANY PERIMETER EDGE OF LESS THAN 4 INCHES IN WIDTH.
4. IMMEDIATELY BRING DISCREPANCIES TO THE ARCHITECT'S ATTENTION.
5. IN ACOUSTICAL PANEL CEILINGS, CENTER CEILING ELEMENTS IN PANELS.
6. IN GYPSUM WALL BOARD CEILINGS ALIGN CEILING ELEMENTS WITH ADJACENT CEILING ELEMENTS.
7. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS (SUCH AS GYPSUM BOARD) WHERE REQUIRED FOR ACCESS TO SERVICEABLE MECHANICAL, ELECTRICAL, OR PLUMBING DEVICES. PROVIDE COORDINATED ACCESS PANEL LOCATION SHOP DRAWING FOR REVIEW AND APPROVAL BY ARCHITECT PRIOR TO INSTALLATION.
8. ACOUSTIC PANEL CEILINGS ARE APC1 AND 8'-0" AFF UNLESS OTHERWISE INDICATED.

CEILING LEGEND

CEILING TAG — APC-1 / 9'-0" — CEILING FINISH / HEIGHT AFF

RECESSED DOWNLIGHTS

1'x4', 2'x4' & 2'x2' RECESSED LIGHT FIXTURE

SUSPENDED LIGHT FIXTURE

RECESSED LINEAR LIGHT FIXTURES

HVAC TERMINALS — SUPPLY, RETURN, EXHAUST

SUSPENDED CEILING GRID, SEE PLAN AND SPECIFICATIONS FOR PANEL SIZES

GWB CEILING

KEYNOTE LEGEND

101 SNORKEL ARM MOUNTED TO STRUCTURE ABOVE. SEE DETAIL 6/A420.
107 COORDINATE NEW DUCT TO ALIGN WITH EXISTING ROOF CURB.
108 BACK-TO-BACK SUSPENDED MONITORS ON POST MOUNTED TO STRUCTURE ABOVE. MONITOR BRACKETS ARE O.F.C.I.

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FSU BIO UNIT ONE TEACHING LABS

FLORIDA STATE UNIVERSITY,
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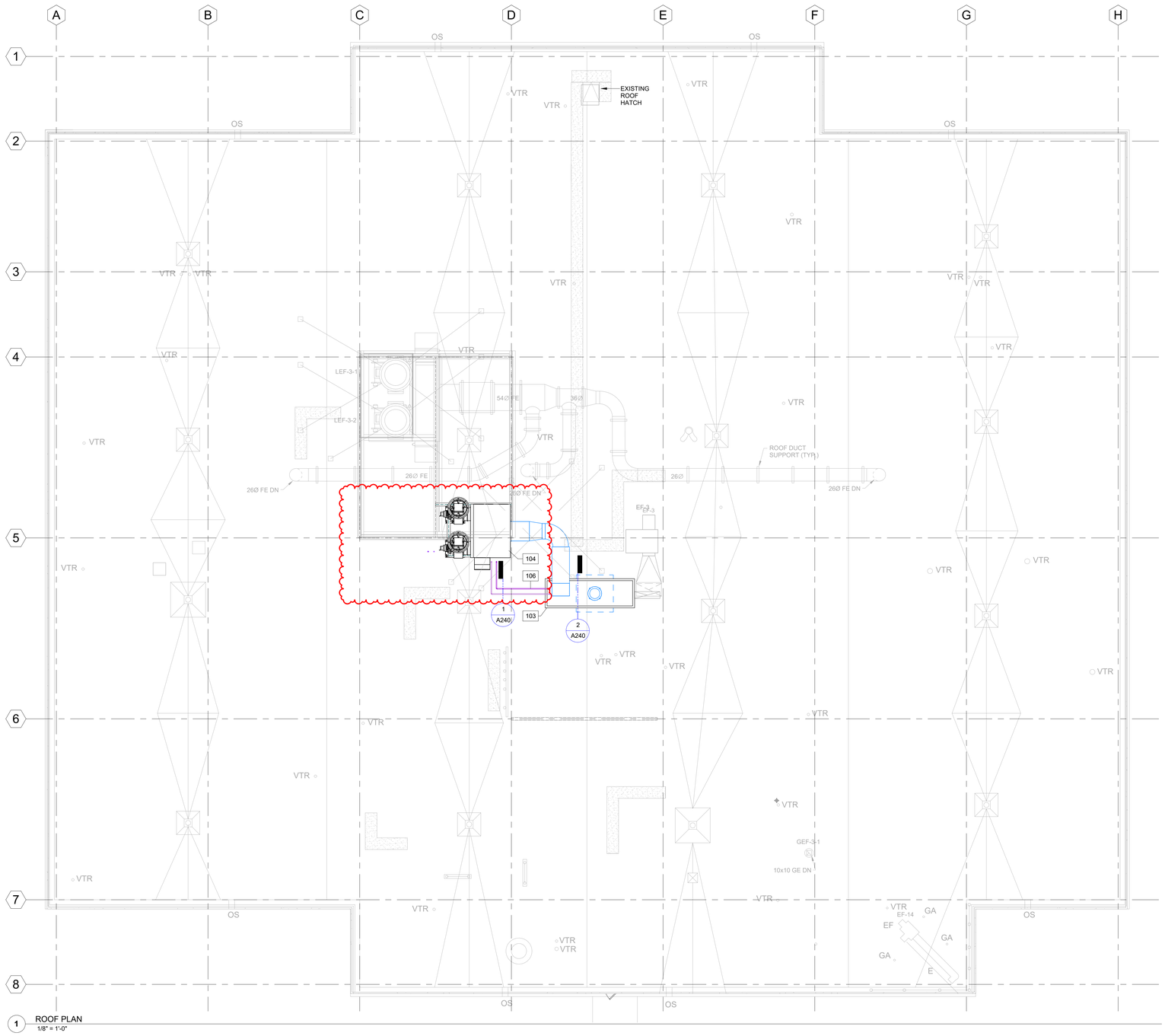
KEY PLAN

DRAWING TITLE:

LEVEL 2 CEILING PLAN

PROJECT NO.: 23055-00 DRAWN BY: JM
CHECKED BY: JMO

A132



1 ROOF PLAN
1/8" = 1'-0"

ROOF PLAN SHEET NOTES

1. COORDINATE ALL EQUIPMENT SHOWN ON THE ROOF PLAN WITH CONSTRUCTION DOCUMENTS ASSOCIATED WITH THEIR RESPECTIVE DISCIPLINES.

KEYNOTE LEGEND

103	REMOVE EXISTING CURB CAP; FABRICATE NEW CURB CAP TO ACCOMODATE NEW DUCT AND FAN; SEE MECHANICAL.
104	PROVIDE ADDITIONAL STEEL FRAMING TO SUPPORT NEW EQUIPMENT; SEE MECHANICAL AND STRUCTURAL SHEETS.
106	BLOCK SUPPORT FOR PIPES.

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FSU BIO UNIT ONE TEACHING LABS

FLORIDA STATE UNIVERSITY,
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TALLAHASSEE, FL 32306

KEY PLAN

DRAWING TITLE:

ROOF PLAN

PROJECT NO.: 23055-00	DRAWN BY:	AH
	CHECKED BY:	JMO

A140

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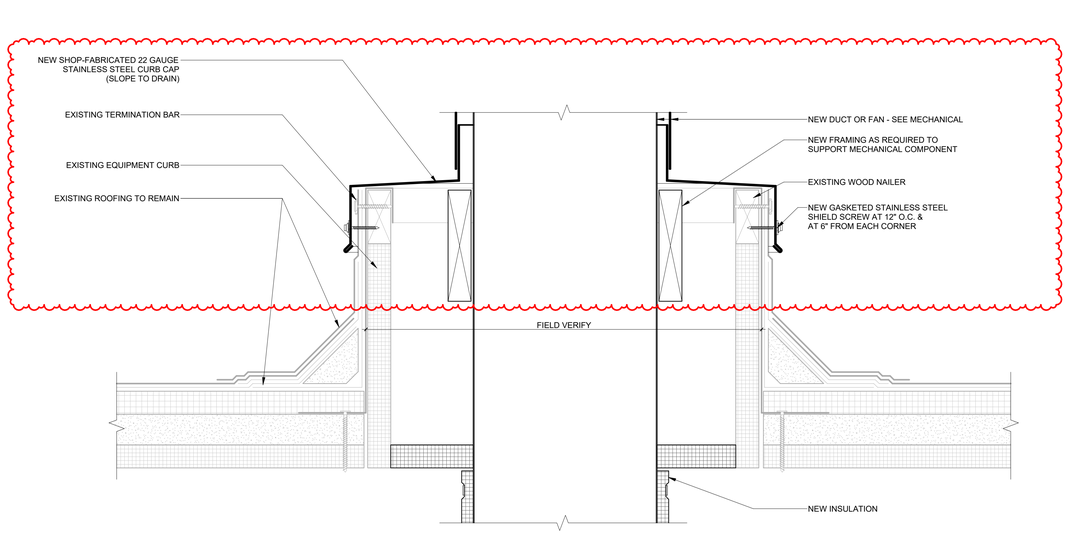
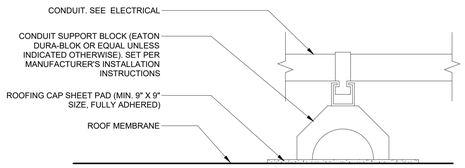


SECTION NOTES:
1. ENSURE WATER PROOFING MEMBRANE REMAINS INTACT.
2. PATCH AND REPAIR ALL MATERIAL DAMAGED DUE TO CONSTRUCTION.

2 DUCT PENETRATION
3" = 1'-0"



1 CONDUIT SUPPORT
3" = 1'-0"

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KEY PLAN

DRAWING TITLE:

ROOF DETAILS

PROJECT NO.:	23055-00	DRAWN BY:	KAL
		CHECKED BY:	TW

A240

GENERAL STRUCTURAL NOTES

PART I - DESIGN CRITERIA

A. GENERAL BUILDING CODE

THE CONTRACT DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE FLORIDA BUILDING CODE - 8TH EDITION (2023).

B. WIND LOADS

1. WIND PRESSURES ARE BASED ON THE PROVISIONS OF THE FLORIDA BUILDING CODE WHICH REFER TO THE AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-22 AND THE FOLLOWING CRITERIA:

   a. ULTIMATE DESIGN WIND SPEED (VULT): 135 MPH (3 SECOND GUST)
   b. NOMINAL DESIGN WIND SPEED (VASD): 105 MPH (3-SECOND GUST)
   c. BUILDING RISK CATEGORY: III
   d. WIND EXPOSURE CATEGORY: B

PART II - STRUCTURAL STEEL

A. MATERIAL

1. HOT ROLLED STRUCTURAL MEMBERS. ALL HOT ROLLED STEEL PLATES, SHAPES, SHEET PILING, AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A6.
2. ASTM SPECIFICATION AND GRADE. CLEARLY MARK THE GRADE OF STEEL ON EACH PIECE, WITH A DISTINGUISHING MARK VISIBLE FROM FLOOR SURFACES, FOR THE PURPOSE OF FIELD INSPECTION OF PROPER GRADE OF STEEL. UNLESS NOTED OTHERWISE ON THE DRAWINGS, STRUCTURAL STEEL SHALL BE AS FOLLOWS:
   a. RECTANGULAR HSS: ASTM A 500, GRADE C (FY=50 KSI)
   b. L-SHAPES. ALL L-SHAPES SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE ON THE DRAWINGS.
      1) ALL CONNECTION MATERIAL, EXCEPT AS NOTED OTHERWISE HEREIN OR ON THE DRAWINGS, INCLUDING BEARING PLATES, GUSSET PLATES, STIFFENER PLATES, FILLER PLATES, ANGLES, ETC. SHALL CONFORM TO ASTM A36 UNLESS A HIGHER GRADE OF STEEL IS REQUIRED BY STRENGTH AND PROVIDED THE RESULTING SIZES ARE COMPATIBLE WITH THE CONNECTED MEMBERS.

B. STRUCTURAL BOLTS AND THREADED FASTENERS

1. A325 BOLTS. ALL BOLTS IN STRUCTURAL CONNECTIONS SHALL CONFORM TO ASTM A325 TYPE 1, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.

C. WELDING

1. UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW), F7XX-EXXX (SAW), ER70S-X (GMAW), OR E7XT-X (FCAW).

PART III - CONCRETE MASONRY

A. SCOPE

1. REFER TO ARCHITECT'S DRAWINGS FOR THE EXTENT OF MASONRY WALLS. NON-LOADBEARING WALLS MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS.
2. PROVIDE ONE-COURSE HORIZONTAL BOND BEAM REINFORCE WITH 1-#5 CONTINUOUS AT EVERY FLOOR LEVEL, ROOF LEVEL, AND PARAPET, MINIMUM.

B. CONCRETE MASONRY UNITS.

1. CONCRETE STRENGTH OF MASONRY UNITS (BASED ON NET AREA) SHALL BE 1,900 PSI MINIMUM.
2. UNITS SHALL CONFORM TO ASTM C 55 OR ASTM C 90 AND SAMPLED IN ACCORDANCE WITH ASTM C 140.

C. MORTAR

1. USE ONLY PORTLAND CEMENT/LIME, TYPE M OR S, MORTAR CONFORMING TO ASTM C 270. PROVIDE AN AVERAGE COMPRESSIVE STRENGTH AT 28 DAYS OF 1,800 PSI MINIMUM.

D. GROUT

1. MIX DESIGNS:
   a. FOR FILLING SPACES 4" OR LARGER IN BOTH DIRECTIONS, USE "COARSE GROUT" WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. THE GROUT SHALL BE TESTED IN ACCORDANCE WITH ASTM C1019. FOR FILLING SPACES LESS THAN 4" IN ONE OR BOTH HORIZONTAL DIRECTIONS, USE "FINE GROUT" PROPORTIONED PER ASTM C 476.
   b. USE 3,000 PSI NORMALWEIGHT CONCRETE FOR FILLING SPACES 10" AND LARGER IN BOTH DIRECTIONS. THE GROUT SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1019.
   c. ALL GROUT MIX DESIGN SUBMITTALS SHALL INCLUDE THE RESULTS OF THE TESTS PERFORMED IN ACCORDANCE WITH ASTM C 1019.
   d. SLUMP RANGE AT POINT OF FINAL DISCHARGE: 8" TO 11".
   e. THE USE OF AIR ENTRAINING ADMIXTURES IS NOT ALLOWED.

E. MINIMUM REINFORCEMENT FOR CONCRETE MASONRY UNITS

1. REINFORCING STEEL IN CONCRETE MASONRY CONSTRUCTION: ASTM A 615, GRADE 60.
2. PROVIDE VERTICAL REINFORCEMENT IN CELLS OF CONCRETE MASONRY UNITS (FULLY EMBEDDED IN GROUT) AS SHOWN ON THE PLANS AND OTHER DETAILS. MINIMUM REINFORCEMENT OF INTERIOR AND EXTERIOR MASONRY SHALL BE AS FOLLOWS:
   a. 1-#5 AT A MAXIMUM SPACING OF 48 INCHES
   b. 1-#5 AT EACH CORNER
   c. 1-#5 AT EACH SIDE OF OPENINGS UP TO 12 FEET WIDE
3. MINIMUM LAP OF ALL REINFORCING STEEL SHALL BE AS FOLLOWS:
   a. #5: 30 INCHES

DO NOT LAP VERTICAL REINFORCEMENT AT INTERSECTING BOND BEAMS. REINFORCEMENT SHALL BE CONTINUOUS THROUGH INTERSECTING BOND BEAMS.

4. TERMINATION OF REINFORCING STEEL:
   a. ALL VERTICAL REINFORCEMENT SHALL HAVE STANDARD HOOK INTO BOND BEAM OR TIE BEAM. TERMINATE AT HIGHEST BOND BEAM IF MASONRY DOES NOT EXTEND TO ROOF OR GROUTED CELL IS NOT CONTINUOUS TO ROOF. HOOK SHALL EXTEND TO THE UPPERMOST HORIZONTAL REINFORCEMENT OF THE BOND BEAM AND HAVE A MINIMUM EMBEDMENT OF 6".
   b. ALL HORIZONTAL REINFORCEMENT AT ENDS OF BOND BEAMS SHALL HAVE STANDARD HOOK INTO VERTICAL GROUTED CELL. PROVIDE CORNER BARS SUCH THAT HORIZONTAL REINFORCEMENT IS CONTINUOUS AROUND CORNERS.

F. REINFORCING STEEL COVERAGE

1. COVER TO REINFORCING STEEL WITHIN MASONRY ELEMENTS SHALL NOT BE LESS THAN THE FOLLOWING:
   a. EXPOSED TO EARTH OR WEATHER: 2" (#6 AND LARGER BARS), 1.5" (#5 AND SMALLER BARS).
   b. NOT EXPOSED TO EARTH OR WEATHER: 1.5"
   c. LONGITUDINAL WIRES OF JOINT REINFORCEMENT SHALL BE FULLY EMBEDDED IN MORTAR OR GROUT WITH A MINIMUM COVER OF 5/8" WHEN EXPOSED TO EARTH AND WEATHER AND 1/2" WHEN NOT EXPOSED TO EARTH OR WEATHER.

PART IV - SUBMITTALS

A. SHOP DRAWINGS

1. THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
   a. STRUCTURAL STEEL, SHOP AND ERECTION DRAWINGS (S&S)
   b. DELEGATED CANOPY SHOP DRAWINGS AND CONNECTIONS (S&s).

B. REPRODUCTION

THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

PART V - MISCELLANEOUS

A. CONTRACT DOCUMENTS

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
2. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE.
3. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMNS LINES OR ARE EQUALLY SPACED BETWEEN LOCATED MEMBERS.

B. DRAWING CONFLICTS

THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.

C. CONFLICTS IN STRUCTURAL REQUIREMENTS

WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES, AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.

D. EXISTING CONDITIONS

1. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE EXISTING BUILDING AT THE JOB SITE AND REPORT ANY DISCREPANCIES FROM ASSUMED CONDITIONS SHOWN ON THE DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND ERECTION OF ANY MEMBERS.
2. EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS . THESE DRAWINGS OF EXISTING CONSTRUCTION ARE AVAILABLE FOR CONTRACTOR USE. HOWEVER, THE AVAILABLE DRAWINGS OF EXISTING CONSTRUCTION ARE NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT INFORMATION.
3. DEMOLITION, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE SO AS NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF ANY ARCHITECTURAL, STRUCTURAL, OR MEP MEMBERS NOT DESIGNATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND APPROVAL OBTAINED PRIOR TO REMOVAL OF THOSE MEMBERS.
4. THE CONTRACTOR SHALL REPAIR ALL DAMAGE CAUSED DURING CONSTRUCTION WITH SIMILAR MATERIALS AND WORKMANSHIP TO RESTORE CONDITIONS TO LEVELS ACCEPTABLE TO THE ARCHITECT.

E. RESPONSIBILITY OF THE CONTRACTOR FOR CONSTRUCTION LOADS

THE STRUCTURE HAS BEEN DESIGNED FOR THE LOADS IDENTIFIED WITHIN THESE STRUCTURAL DRAWINGS THAT ARE ANTICIPATED TO BE APPLIED TO THE FINAL STRUCTURE ONCE COMPLETED AND OCCUPIED. THE CONTRACTOR SHALL NOT OVERLOAD THE STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE ADEQUACY OF THE STRUCTURE TO SUPPORT ANY APPLIED CONSTRUCTION LOADS, INCLUDING THOSE DUE TO CONSTRUCTION VEHICLES OR EQUIPMENT, MATERIAL HANDLING OR STORAGE, SHORING OR RESHORING, OR ANY OTHER CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED VERIFYING THE ADEQUACY OF THE STRUCTURE FOR ANY PROPOSED CONSTRUCTION LOADS THAT ARE IN EXCESS OF THE STATED DESIGN LOADS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE TO DESIGN OR CHECK THE STRUCTURE FOR LOADS APPLIED TO THE STRUCTURE FOR ANY CONSTRUCTION ACTIVITY.

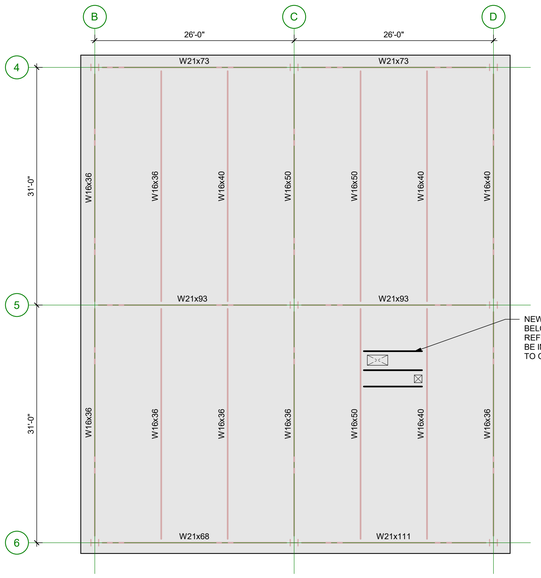
F. CONTRACTOR SUBSTITUTIONS

ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIAL OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE APPROVED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
1. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
2. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CODE COUNCIL (ICC) AND THE ICC REPORT IS SUBMITTED WITH THE REQUEST.

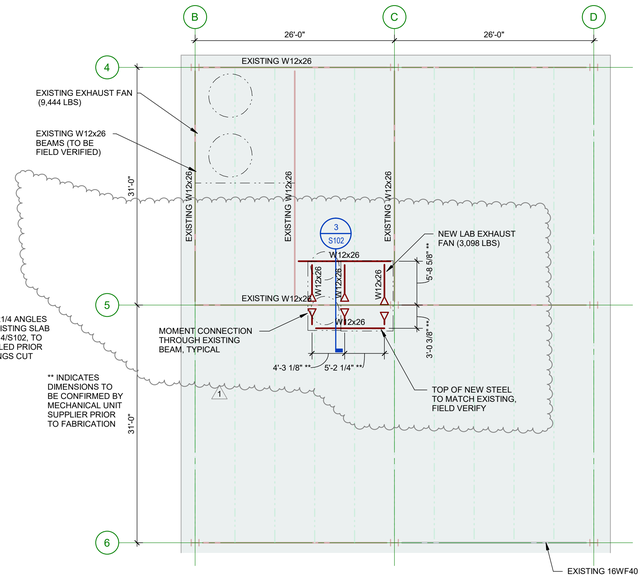
SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED.

G. MAINTENANCE STATEMENT

ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND TO ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE SUCH ITEMS SUCH AS BUT NOT LIMITED TO PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO A SALT ENVIRONMENT OR OTHER HARSH CHEMICALS.



2 LEVEL 3 FRAMING PLAN
1/8" = 1'-0"

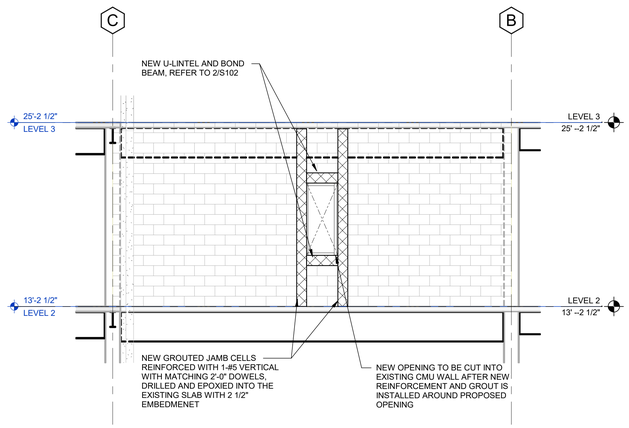


PLAN NOTES

1. BOTTOM OF DECK ELEVATION IS 38'-0" (VIF), UNLESS NOTED OTHERWISE ON PLAN. TOP OF STEEL ELEVATIONS FOR BEAMS AND GIRDERS SHALL BE DETERMINED FROM JOIST SEAT DEPTHS AND BOTTOM OF DECK ELEVATIONS, UNLESS NOTED OTHERWISE.
2. EXISTING ROOF SYSTEM IS ROOF DECK SUPPORTED BY STEEL JOISTS AND BEAMS. ROOF DECK IS 2" DEEP POURED GYPSUM DECK ON 1 1/2" INSULATION FOAM BOARD.
3. PROVIDE A CONTINUOUS 1/4" BENT PLATE AT ALL ROOF EDGES AND OPENINGS, UNLESS NOTED OTHERWISE.
4. ALL STEEL THAT IS PERMANENTLY EXPOSED TO THE EXTERIOR OR IS PERMANENTLY IN UNCONDITIONED SPACE SHALL BE HOT-DIPPED GALVANIZED.
5. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR PENETRATIONS NOT SHOWN.
6. REFER TO TYPICAL DETAILS FOR ADDITIONAL STEEL REQUIREMENTS AT OPENINGS.
7. EXHAUST FAN MANUFACTURER TO PROVIDE ANCHORAGE TO STEEL BEAMS BELOW.
8. REFER TO TYPICAL DETAILS FOR GUY WIRE AND EXHAUST DUCT SUPPORTS.

1

1 ROOF PLAN
1/8" = 1'-0"



3 SECOND FLOOR EXTERIOR ELEVATION - NEW OFFICE WINDOW
1/4" = 1'-0"

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FL LICENSE NO.: 69282

SUBMITTAL:	ISSUE DATE:
CONSTRUCTION DOCUMENTS	08/12/2025

REVISION	DESCRIPTION	DATE
1	ADDENDUM-01	08/25/2025

FSU BIO UNIT ONE TEACHING LABS

FLORIDA STATE UNIVERSITY,
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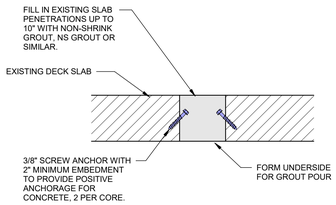
KEY PLAN

DRAWING TITLE:

GENERAL STRUCTURAL NOTES AND ROOF PLAN

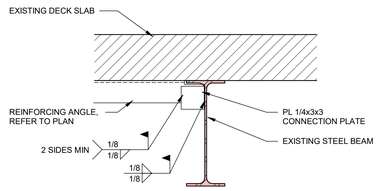
PROJECT NO.: 23055-00 DRAWN BY: Author
CHECKED BY: Checker

S101



5 GROUT EXISTING PENETRAION

1 1/2" = 1'-0"

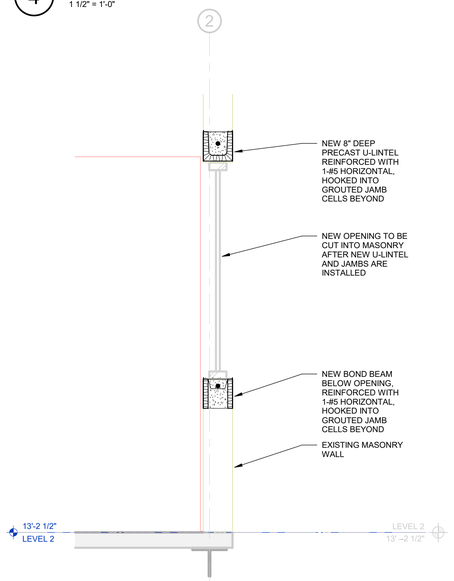


OPENINGS LARGER THAN 10", LESS THAN 2'-0"

NOTE: OPENINGS SMALLER THAN OR EQUIAL TO 10" DO NOT REQUIRE REINFORCEMENT BUT SUBMIT CORE LOCATIONS FOR REVIEW PRIOR TO CONSTRUCTION AND ENSURE EXISTING BEAMS ARENT CONFLICTING.

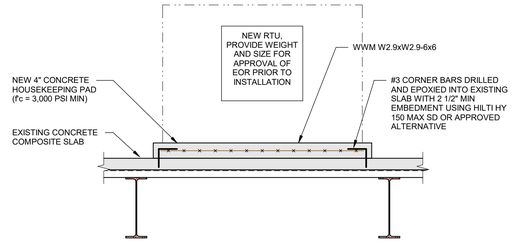
4 ANGLE REINFORCEMENT CONNECTION

1 1/2" = 1'-0"



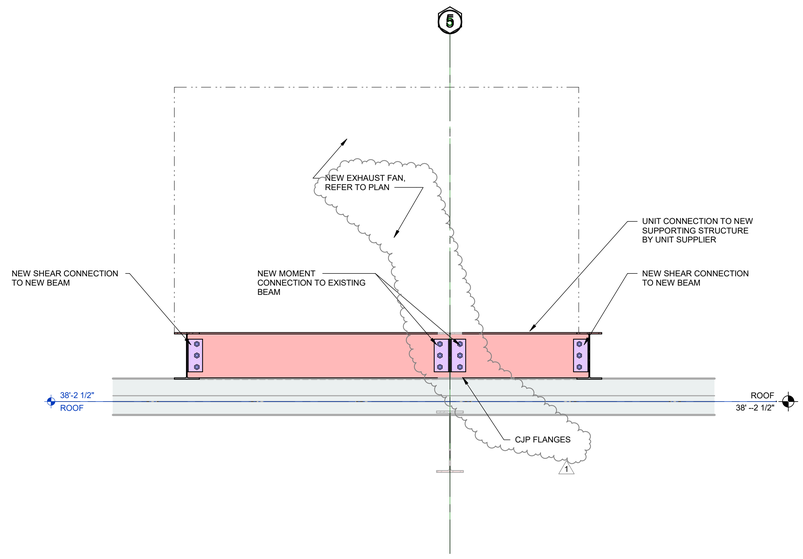
2 NEW MASONRY OPENING

3/4" = 1'-0"



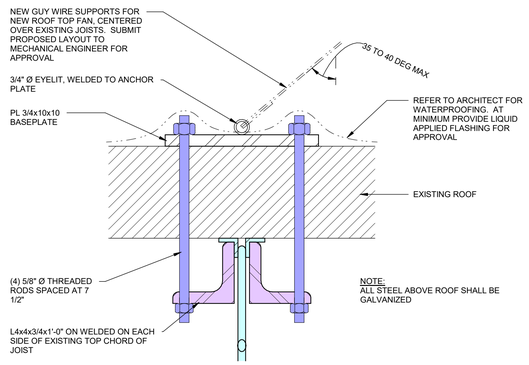
1 NEW HOUSEKEEPING PAD ON EXISTING

3/4" = 1'-0"



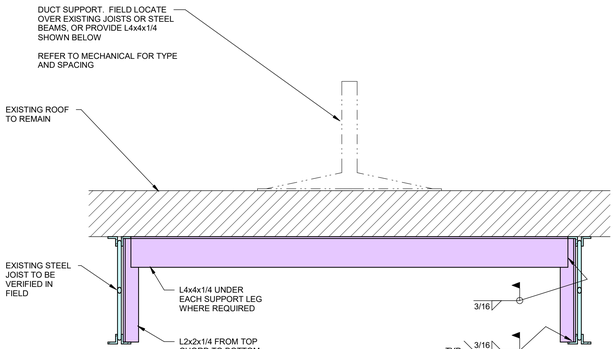
3 NEW ROOF FRAMING TO SUPPORT NEW EXHAUST FAN

3/4" = 1'-0"



7 GUY WIRE SUPPORTS

3" = 1'-0"



6 EXHAUST DUCT SUPPORTS

1 1/2" = 1'-0"

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SUBMITTAL:		ISSUE DATE:
CONSTRUCTION DOCUMENTS		08/12/2025
REVISION	DESCRIPTION	DATE
1	ADDENDUM-01	08/25/2025

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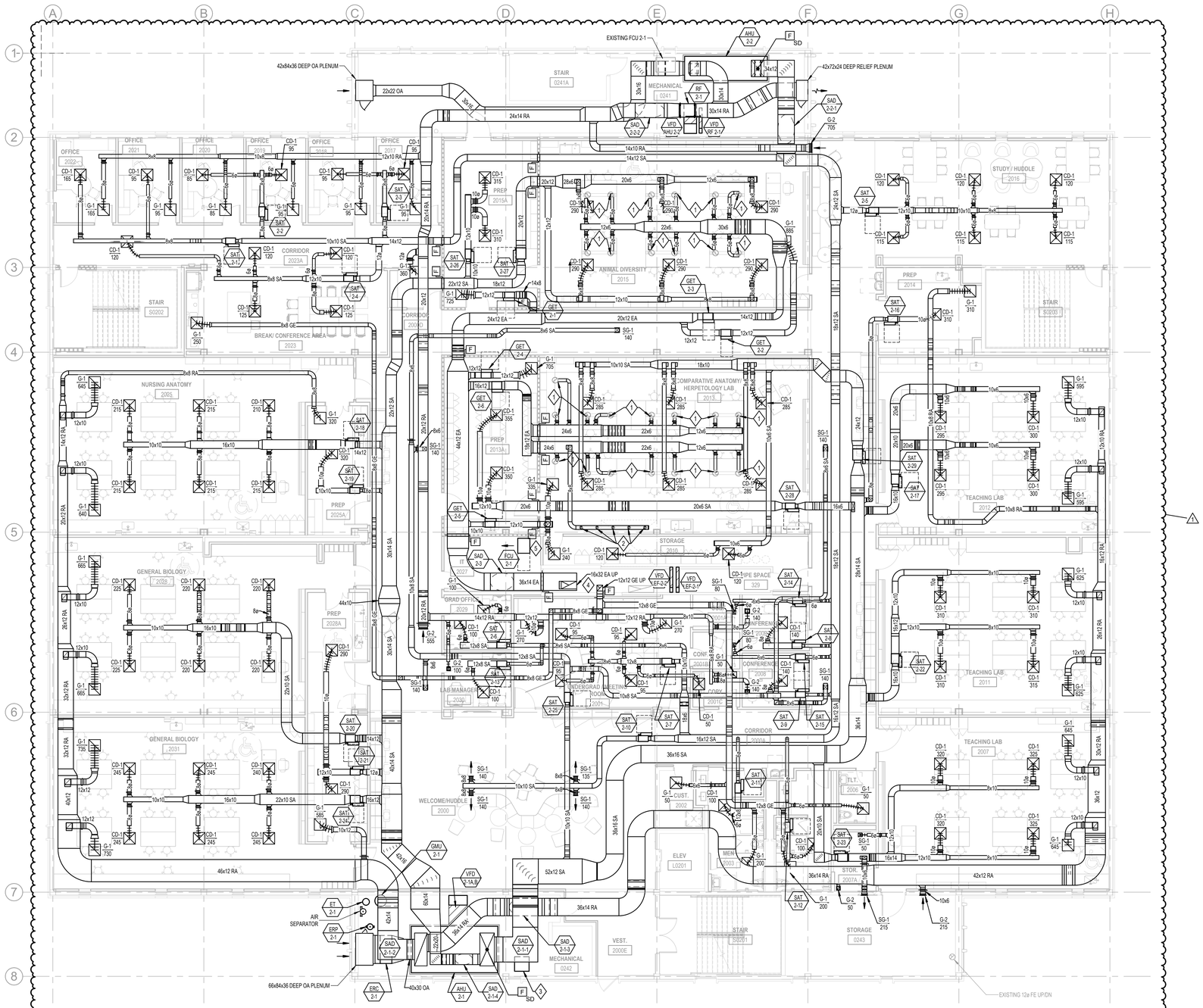
KEY PLAN

DRAWING TITLE:

SECTIONS AND DETAILS

PROJECT NO.: 23055-00 DRAWN BY: Author
CHECKED BY: Checker

S102



1 **LEVEL 2 MECHANICAL DUCT PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. DUE TO THE IMPORTANCE OF MAINTAINING OPERATIONS AT THIS FACILITY, CONTRACTOR SHALL COORDINATE WITH OWNER ALL WORK THAT REQUIRES THE SHUTDOWN OF EXISTING AND STARTUP OF NEW UTILITIES PRIOR TO START. WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT, ON WEEKENDS AND/OR OVER HOLIDAYS.
2. DUE TO CEILING SPACE LIMITATIONS, IT IS IMPERATIVE THAT DUCT/PIPE/EQUIPMENT INSTALLATION BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION OF ANY ABOVE CEILING UTILITIES.
3. CONTRACTOR TO COORDINATE WITH ALL TRADES TO ENSURE ADEQUATE ACCESS IS PROVIDED TO PROPERLY MAINTAIN ALL AIR TERMINAL DEVICES, DUCT SMOKE DETECTORS, FIRE/SMOKE DAMPERS, CONTROL DAMPERS, AIR FLOW STATIONS, AND SIMILAR ABOVE CEILING EQUIPMENT. PROVIDE CEILING ACCESS PANELS TO SERVICE EQUIPMENT LOCATED ABOVE HARD CEILING AREAS. FOR BALANCING DAMPERS LOCATED ABOVE HARD CEILINGS AREAS, PROVIDE REMOTE OPERATED VOLUME CONTROL DAMPERS - REFER TO SPECIFICATIONS.
4. ALL DIFFUSERS, GRILLES, ETC. SHALL HAVE MANUAL VOLUME DAMPERS INSTALLED IN DUCTWORK FOR BALANCING EACH DEVICE. SPACES SERVED BY A SINGLE DIFFUSER, GRILLE, CHILLED BEAM, ETC. DOWNSTREAM FROM IT'S RESPECTIVE AIR TERMINAL DEVICE DO NOT REQUIRE THE MANUAL VOLUME DAMPER.
5. FOR CLARITY, NOT ALL DEVICES ARE SHOWN ON FLOOR PLANS. REFER TO FLOW DIAGRAMS, DETAILS AND CONTROL DRAWINGS SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL DEVICES.
6. WORK SHOWN HEREIN IS INTENDED TO SHOW END RESULT AND DOES NOT FULLY IMPLY SEQUENCING OF WORK. CONTRACTOR TO ESTABLISH WORK SEQUENCE VIA COORDINATION WITH OWNER, REVIEW OF EXISTING CONDITIONS AND REVIEW OF PHASING PLANS.

SHEET KEYNOTES

1. 6Ø GE W/ CONNECTION TO SNORKEL ASSEMBLY - BALANCE TO 80 CFM.
2. 6Ø GE DN WITH CONNECTION TO VENTILATED CABINET - BALANCE TO 55 CFM.
3. NEW LOCATION FOR EXISTING FCU 2-4. REPIPE/RECONNECT ALL ASSOCIATED FCU PIPING (CHW, HHW & D), CONTROL WIRING FROM EXISTING LOCATIONS TO NEW FCU LOCATION AS REQUIRED.
4. OFFSET EXHAUST DUCTWORK ON LEVEL ABOVE TO AVOID ROOF JOISTS.
5. COORDINATE FINAL FAN COIL UNIT ELEVATION AND LOCATION WITH IT EQUIPMENT.

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SUBMITTAL:		ISSUE DATE:
CONSTRUCTION DOCUMENTS		08/12/2025
REVISION	DESCRIPTION	DATE
1	ADDENDUM-01	08/25/2025

FSU BIO UNIT ONE TEACHING LABS

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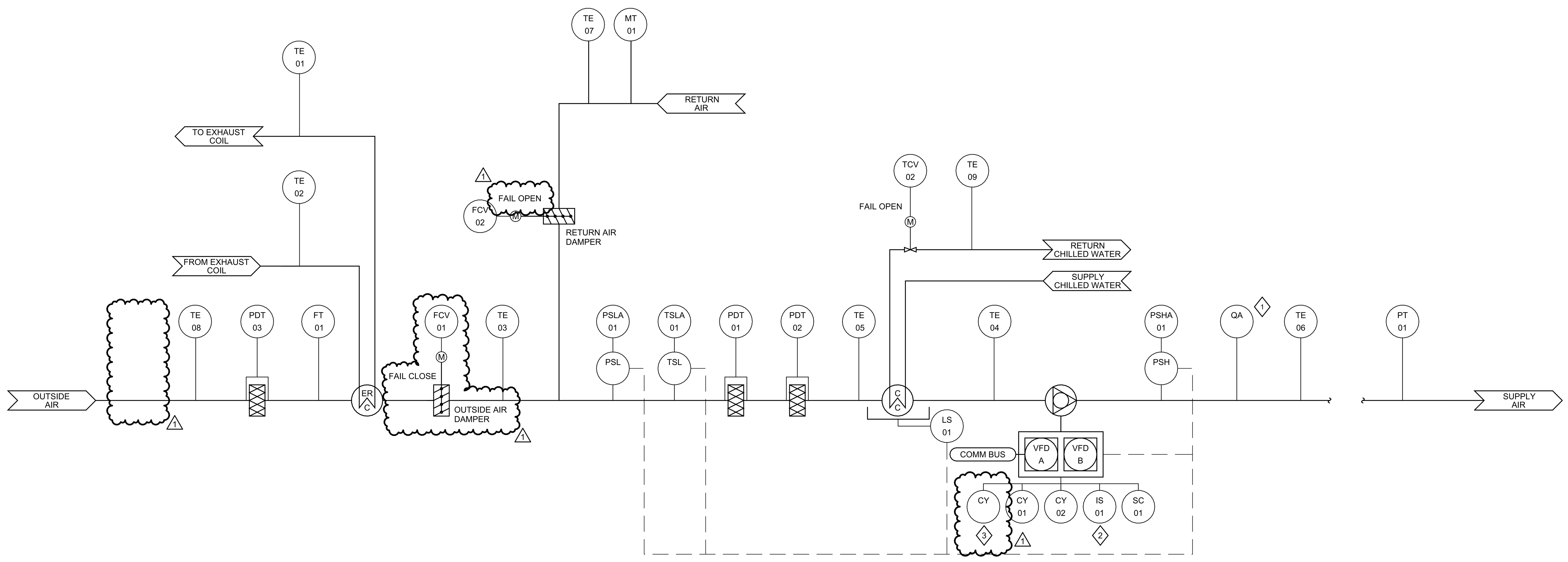
KEY PLAN

DRAWING TITLE:

LEVEL 2 MECHANICAL DUCT PLAN

PROJECT NO.: 23055-00 DRAWN BY: WB
CHECKED BY: RDC

M102



GENERAL NOTES

1. DRAWING IS TYPICAL AND MAY REPRESENT MORE THAN ONE SYSTEM.
2. COORDINATE THE INSTALLATION AND FINAL LOCATION OF INSTRUMENTS WITH OTHER TRADES.
3. VERIFY ALL CABLE REQUIREMENTS PRIOR TO TERMINATING.
4. PROVIDE FINAL I/O ADDRESS, CABLE TAGS, MEDIUM TYPE, ETC.
5. SETPOINTS, TIMERS, DELAYS AND ALARM LIMITS ARE ADJUSTABLE AND SHALL BE COORDINATED WITH TAB ENGINEER, MECHANICAL SCHEDULES AND CONTROL DIAGRAMS.
6. PROVIDE ALL LABOR, MATERIALS, SERVICES, EQUIPMENT, AND DEVICES NECESSARY FOR A COMPLETE, FULLY FUNCTIONAL BUILDING AUTOMATION SYSTEM AS INTENDED IN THE SEQUENCES OF OPERATION, SPECIFICATIONS, AND CONTROL DRAWINGS.
7. ALARM SHALL BE GENERATED IF ANY CONTROL VARIABLE (AIRFLOW, TEMPERATURE, HUMIDITY, PRESSURE, LIGHTING CONTROL, ETC.) IS NOT MEETING SETPOINT OR STATUS IS NOT MATCHING COMMAND.

SHEET KEYNOTES

1. DUCT MOUNTED SMOKE DETECTOR PROVIDED BY DIVISION 28. REFER TO FLOORPLANS FOR DETECTOR LOCATION. (1)
2. MULTIPLE FANS SERVED BY REDUNDANT VFDS. PROVIDE SEPARATE CURRENT SWITCHES FOR EACH FAN AND REPORT BACK EACH INDIVIDUAL FAN STATUS. REFER TO SCHEDULES FOR TOTAL NUMBER OF FANS.
3. FIRE ALARM SHUT DOWN RELAY CONNECTION. (1)

MIXED AIR UNIT - CONTROL SEQUENCE

A. GENERAL:
  1. VARIABLE AIR VOLUME AIR HANDLING SYSTEM DISTRIBUTES AIR TO VAV AIR TERMINAL UNITS.
  2. SYSTEM OPERATION:
    a. SYSTEM SHALL OPERATE CONTINUOUSLY (24 HOURS PER DAY, 365 DAYS PER YEAR).

B. START UP:
  1. UPON START UP COMMAND:
    a. RETURN AIR DAMPER OPENS FULLY.
    b. OUTSIDE AIR DAMPER SHALL OPEN AND BE PROVEN.
    c. SUPPLY FAN VFD SHALL START SUPPLY FANS; VFD AND EACH FAN SHALL BE PROVEN.
    d. SUPPLY FAN STATIC PRESSURE CONTROL SEQUENCE ACTIVATES.
    e. SUPPLY DUCT STATIC PRESSURE RESET ACTIVATES.
    f. COOLING COIL TEMPERATURE CONTROL SEQUENCE ACTIVATES.
    g. SUPPLY AIR TEMPERATURE RESET CONTROL SEQUENCE ACTIVATES.

C. SHUTDOWN:
  1. UPON SHUTDOWN COMMAND:
    a. ALL SUPPLY FANS SHALL STOP AND BE PROVEN BY CURRENT SENSING DEVICES.
    b. ALL ASSOCIATED DAMPERS IN SYSTEM SHALL CLOSE.
    c. ALL OTHER SEQUENCES DISABLE.
    d. NUISANCE ALARMS ARE SUPPRESSED.

D. SUPPLY FAN STATIC PRESSURE CONTROL:
  1. SUPPLY FAN VFD SPEED MODULATES TO MAINTAIN SUPPLY DUCT STATIC PRESSURE SETPOINT.

E. SUPPLY DUCT STATIC PRESSURE RESET:
  1. PERFORM EVERY 15 MINUTES (ADJ).
  2. IF ANY VAV BOX DAMPER COMMAND IS GREATER THAN 90% (ADJ), INCREASE DUCT STATIC PRESSURE SETPOINT BY 0.1 IN.WG.
  3. IF ALL VAV BOX DAMPER COMMANDS ARE LESS THAN 60% (ADJ), DECREASE DUCT STATIC PRESSURE SETPOINT BY 0.1 IN.WG.

F. COOLING COIL TEMPERATURE CONTROL:
  1. COOLING COIL VALVE MODULATES TO MAINTAIN ACTIVE COOLING COIL LEAVING AIR TEMPERATURE SETPOINT.

G. COOLING COIL TEMPERATURE SETPOINT RESET CONTROL:
  1. RESET SEQUENCE IS ONLY ACTIVE WHEN STATIC PRESSURE SETPOINT IS AT MINIMUM.
  2. RESET THE COOLING COIL LEAVING AIR TEMPERATURE SETPOINT BASED ON THE FOLLOWING SCHEDULE:
    a. 50% (ADJ) OF THE ZONES SERVED HAVE A REHEAT VALVE COMMAND AT 75% (ADJ) OR HIGHER: INCREASE ACTIVE SETPOINT 1 DEG F EVERY 10 MINUTES (ADJ) UNTIL 75% (ADJ) OF ZONE REHEAT COIL COMMANDS ARE BELOW 65% (ADJ).
    b. 75% (ADJ) OF THE ZONES SERVED HAVE A REHEAT VALVE COMMAND AT 25% (ADJ) OR LOWER: DECREASE ACTIVE SETPOINT 1 DEG F EVERY 10 MINUTES (ADJ) UNTIL 50% (ADJ) OF ZONE REHEAT COIL COMMANDS ARE ABOVE 35% (ADJ).
  3. COOLING COIL TEMPERATURE SETPOINT RESET STOPS WHEN ANY ZONE HUMIDITY SENSOR MEASURES 50% RH OR GREATER. (1)

H. OUTSIDE AIR CONTROL:
  1. OUTSIDE AIR DAMPER MODULATES TO MAINTAIN OUTSIDE AIRFLOW SETPOINT.
  2. IF OUTSIDE AIR DAMPER IS 100% OPEN, RETURN AIR DAMPER MODULATES TO MAINTAIN OUTSIDE AIRFLOW SETPOINT.

I. OUTSIDE AIR FLOW SETPOINT RESET:
  1. EVERY 15 MIN. (ADJ), OUTSIDE AIR FLOW SETPOINT SHALL BE RESET WITH ACCORDING TO THE FOLLOWING EQUATION:
     OUTSIDE AIR FLOW SETPOINT = TOTAL EXHAUST AIR FLOW + 300 CFM

J. LEAD/STANDBY ROTATION FOR PRIMARY/REDUNDANT VARIABLE FREQUENCY DRIVES:
  1. AUTOMATICALLY ROTATE LEAD/STANDBY DESIGNATIONS FOR DRIVE A AND DRIVE B EACH WEEK TO EQUALIZE RUN TIME.
  2. LEAD/STANDBY ROTATION SHALL PROVIDE SEAMLESS TRANSITION FROM DRIVE A TO DRIVE B WITHOUT ANY LOSS OF AIR FLOW.
  3. OPERATOR SHALL BE ABLE TO MANUALLY OVERRIDE LEAD/STANDBY DESIGNATIONS.

K. SAFETIES:
  1. THE FOLLOWING SAFETIES SHUT DOWN SUPPLY FAN AND ACTIVATE SHUT DOWN SEQUENCE:
    a LOW STATIC PRESSURE LIMIT SWITCH
    b. HIGH STATIC PRESSURE LIMIT SWITCH
    c. DRAIN PAN FLOAT SWITCH ALARM
  2. IF THE LOW TEMPERATURE ALARM (FREEZESTAT) IS TRIPPED, INITIATE SHUTDOWN SEQUENCE AS DESCRIBED, AND IN ADDITION, COMMAND CHILLED WATER CONTROL VALVE FULLY OPEN. THE LOW TEMPERATURE ALARM MUST BE MANUALLY RESET. ONCE MANUALLY RESET, THE AHU SYSTEM SHALL RESTART AUTOMATICALLY.
  3. SYSTEM SHALL CONTINUE TO OPERATE IN NORMAL MODE IF THE BUILDING FIRE ALARM IS ACTIVATED.
  4. UPON ACTIVATION DUCT SMOKE DETECTOR ASSOCIATED WITH THE AIR HANDLING UNIT, ACTIVATE SHUTDOWN SEQUENCE.

L. RESTORATION OF POWER:
  1. UPON RESTORATION OF POWER AFTER POWER OUTAGE, ALL ALARMS ASSOCIATED WITH POWER LOSS SHALL BE RESET AND AIR HANDLING UNIT SYSTEM SHALL RESTART AS DESCRIBED IN START-UP SEQUENCE ABOVE.

WORKSTATION			USER INFORMATION						
			POINT TYPE				ALARM CONDITION		
TAG	POINT DESCRIPTION	UNITS	ANALOG	DIGITAL	INTEGRATED	SETPOINT VALUE	EQUIP ALARM	HIGH LIMIT	LOW LIMIT
HARDWARE									
CY 01	SUPPLY FAN VFD COMMAND	ON/OFF		X			X		
CY 02	SUPPLY FAN VFD DUTY DRIVE COMMAND	DRIVE A/DRIVE B		X			X		
FCV 01	OUTSIDE AIR DAMPER COMMAND	% OPEN	X						
FCV 02	RETURN AIR DAMPER COMMAND	% OPEN	X						
FT 01	OUTSIDE AIRFLOW RATE	CFM	X						
IS 01	SUPPLY FAN STATUS	ON/OFF		X			X		
LS 01	COOLING COIL DRAIN PAN FLOAT SWITCH	NORMAL/ALARM		X					
MT 01	RETURN AIR HUMIDITY	% RH	X						
PDT 01	PREFILTER DIFFERENTIAL PRESSURE	IN. WG.	X				X		
PDT 02	FINAL FILTER DIFFERENTIAL PRESSURE	IN. WG.	X				X		
PDT 03	ENEGRY RECOVERY COIL PREFILTER DIFFERENTIAL PRESSURE	IN. WG.	X				X		
PSHA 01	HIGH STATIC PRESSURE LIMIT ALARM	NORMAL/ALARM		X					
PSLA 01	LOW STATIC PRESSURE LIMIT ALARM	NORMAL/ALARM		X					
PT 01	SUPPLY AIR STATIC PRESSURE	IN WG	X					X	X
SC 01	SUPPLY FAN VFD SPEED COMMAND	%	X						
TCV 02	COOLING COIL CONTROL VALVE	% OPEN	X						
TE 01	ENERGY RECOVERY COIL LEAVING WATER TEMPERATURE	DEG F	X					X	X
TE 02	ENERGY RECOVERY COIL ENTERING WATER TEMPERATURE	DEG F	X					X	X
TE 03	ENERGY RECOVERY COIL LEAVING AIR TEMPERATURE	DEG F	X					X	X
TE 04	COOLING COIL LEAVING AIR TEMPERATURE	DEG F	X					X	X
TE 05	COOLING COIL ENTERING AIR TEMPERATURE	DEG F	X					X	X
TE 06	SUPPLY AIR TEMPERATURE	DEG F	X					X	X
TE 07	RETURN AIR TEMPERATURE	DEG F	X					X	X
TE 08	OUTSIDE AIR TEMPERATURE	DEG F	X					X	X
TE 09	COOLING COIL LEAVING WATER TEMPERATURE	DEG F	X						
TSLA 01	LOW TEMPERATURE LIMIT SWITCH	NORMAL/ALARM		X					
SOFTWARE									
SDP	SYSTEM START-UP	ON/OFF		X					
SDP	STATIC PRESSURE SETPOINT	IN WG	X			(2)			
SDP	STATIC PRESSURE MINIMUM SETPOINT	IN WG	X						
SDP	STATIC PRESSURE MAXIMUM SETPOINT	IN WG	X						
SDP	ACTIVE COOLING COIL LEAVING AIR TEMPERATURE SETPOINT	DEG F	X			(4)			
SDP	COOLING COIL LEAVING AIR TEMPERATURE MINIMUM SETPOINT	DEG F	X			48			
SDP	COOLING COIL LEAVING AIR TEMPERATURE MAXIMUM SETPOINT	DEG F	X			55			
SDP	SUPPLY FAN VFD POINTS (1)				X				
SDP	OUTSIDE AIRFLOW SETPOINT	CFM	X						
SDP	TOTAL EXHAUST AIR FLOW	CFM	X						
SDP	TOTAL SUPPLY AIR FLOW (3)	CFM	X						

NOTES:
(1) REFER TO "TYPICAL VARIABLE FREQUENCY DRIVE (VFD) - INTEGRATED SOFTWARE POINTS" CONTROL DIAGRAM FOR SOFTWARE POINTS TO BE MAPPED BACK TO THE BAS.
(2) STATIC PRESSURE SETPOINTS TO BE DETERMINED BY TEST AND BALANCE IN FIELD.
(3) ~~TOTALIZE ALL SYSTEM SUPPLY AIR TERMINAL AIRFLOWS TO PROVIDE TOTAL SUPPLY AIRFLOW.~~
(4) DEFAULT VALUE SHALL BE EQUAL TO THE COOLING COIL LEAVING DB TEMP AS SCHEDULED ON THE AIR HANDLING UNIT SCHEDULE. (1)

1 AHU 2-1 CONTROL DIAGRAM

SCALE: 12" = 1'-0"

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SUBMITTAL: CONSTRUCTION DOCUMENTS — ISSUE DATE: 08/12/2025

REVISION	DESCRIPTION	DATE
1	ADDENDUM-01	08/25/2025

FSU BIO UNIT ONE TEACHING LABS

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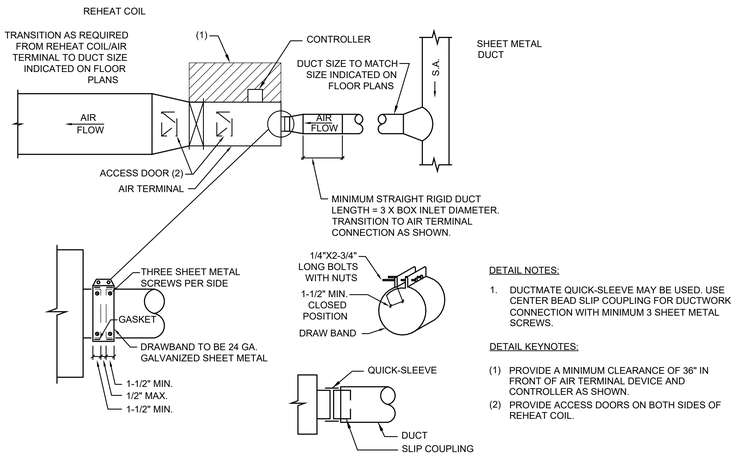
KEY PLAN

DRAWING TITLE:

AHU 2-1 MECHANICAL CONTROLS DIAGRAM

PROJECT NO.: 23055-00 DRAWN BY: EJV
CHECKED BY: RDC

M700



DETAIL NOTES:

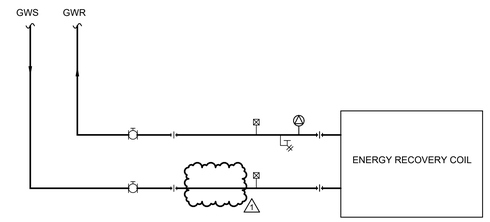
1. DUCTMATE QUICK-SLEEVE MAY BE USED. USE CENTER BEAD SLIP COUPLING FOR DUCTWORK CONNECTION WITH MINIMUM 3 SHEET METAL SCREWS.

DETAIL KEYNOTES:

(1) PROVIDE A MINIMUM CLEARANCE OF 36" IN FRONT OF AIR TERMINAL DEVICE AND CONTROLLER AS SHOWN.
(2) PROVIDE ACCESS DOORS ON BOTH SIDES OF REHEAT COIL.

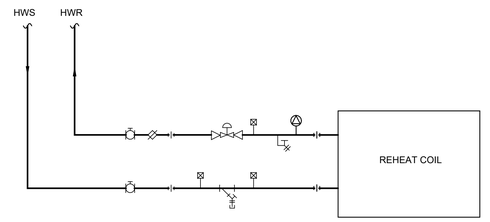
(SCALE: NONE)

AIR TERMINAL DEVICE CONNECTION TO DUCT | 7



(SCALE: NONE)

ENERGY RECOVERY COIL PIPING | 4

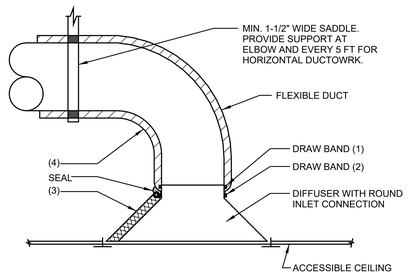


DETAIL NOTES:

1. PROVIDE STRAIGHT INLET AND OUTLET PIPE LENGTHS FOR BALANCING VALVE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
2. PROVIDE MEANS OF BYPASSING COIL, CONTROL, AND BALANCING VALVES DURING FLUSHING.

(SCALE: NONE)

TERMINAL REHEAT COIL | 1

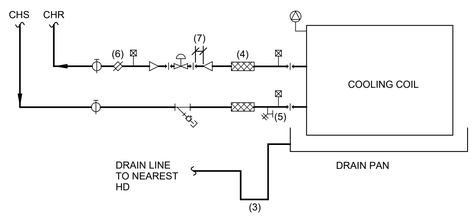


DETAIL KEYNOTES:

(1) PULL FLEXIBLE DUCT'S INNER LINER OVER DIFFUSER COLLAR AND SECURE WITH DRAW BAND.
(2) SECURE FLEXIBLE DUCT INSULATION AND OUTER JACKET WITH DRAW BAND.
(3) REFER TO SECTION 23 3114 FOR DIFFUSER INSULATION REQUIREMENT.
(4) MAINTAIN MIN. 1.5 RADIUS ELBOW. ELBOW SUPPORT DEVICE SIMILAR TO FLEXFLOW ELBOW SUPPORT BY THERMAFLEX TO BE USED TO ASSURE RADIUS ELBOW.

(SCALE: NONE)

FLEXIBLE DUCT CONNECTION TO DIFFUSER | 8

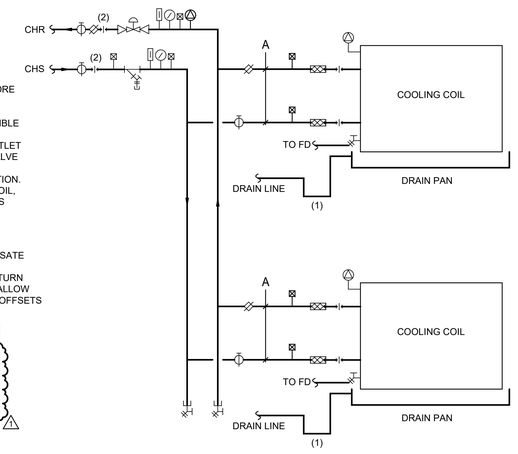


NOTES:

(1) REFER TO SPECIFICATION SECTION 23 2116 FOR UNION REQUIREMENTS.
(2) REFER TO SPECIFICATION SECTION 23 2118 FOR BALANCING VALVE SIZING AND STRAIGHT INLET AND OUTLET PIPING REQUIREMENTS.
(3) REFER TO COOLING COIL CONDENSATE DRAIN TRAP PIPING DETAIL FOR CONSTRUCTION OF CONDENSATE DRAIN TRAP PIPING.
(4) REFER TO SPECIFICATION SECTION 23 0550.
(5) DRAIN VALVE IS NOT REQUIRED IF STRAINER DRAIN VALVE IS PIPED AS LOW POINT DRAIN.
(6) BALANCING VALVE IS NOT REQUIRED WHEN PRESSURE INDEPENDENT CONTROL VALVE (PICV) IS USED.
(7) PROVIDE MINIMUM 5 DIAMETERS STRAIGHT PIPE AT CONTROL VALVE INLET.

(SCALE: NONE)

FAN COIL UNIT PIPING | 5



DETAIL NOTES:

1. DETAIL SIMILAR FOR THREE OR MORE COILS.
2. REFER TO SPECIFICATIONS FOR UNION, FITTING, VALVE, AND FLEXIBLE CONNECTION REQUIREMENTS.
3. PROVIDE STRAIGHT INLET AND OUTLET PIPE LENGTHS FOR BALANCING VALVE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
4. PROVIDE MEANS OF BYPASSING COIL, CONTROL, AND BALANCING VALVES DURING FLUSHING.

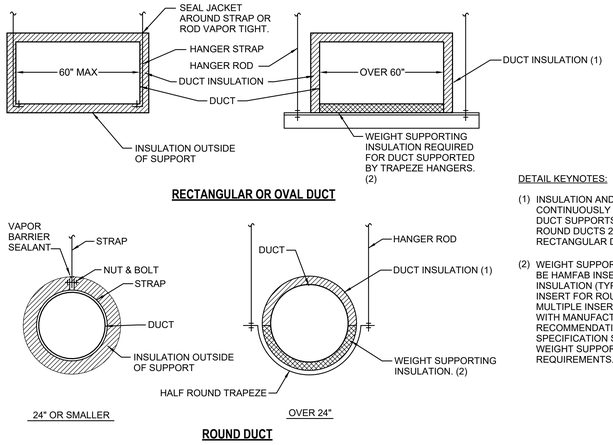
DETAIL KEYNOTES:

(1) REFER TO COOLING COIL CONDENSATE DRAIN TRAP PIPING DETAIL.
(2) CONFIGURE COIL SUPPLY AND RETURN PIPING AND UNIONS/FLANGES TO ALLOW COIL REMOVAL SPACE. PROVIDE OFFSETS AS REQUIRED.

COIL BRANCH PIPE SIZE	
UNIT	A (INCHES)
2-1	2-1/2
2-2	1-1/2

(SCALE: NONE)

AIR HANDLING UNIT CHILLED WATER COOLING COIL PIPING - MULTIPLE COILS | 2

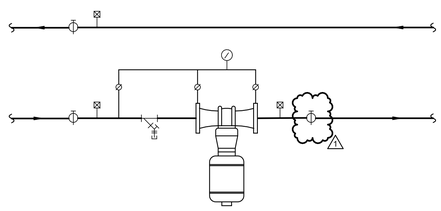


DETAIL KEYNOTES:

(1) INSULATION AND JACKET MUST RUN CONTINUOUSLY BETWEEN DUCT AND DUCT SUPPORTS, EXCEPT FOR ROUND DUCTS 24" AND LESS AND RECTANGULAR DUCTS 60" AND LESS .
(2) WEIGHT SUPPORTING INSULATION TO BE HAMFAB INSERTS OR FOAMGLAS INSULATION (TYPE-G). HAMFAB INSERT FOR ROUND DUCTS SHALL BE MULTIPLE INSERTS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION. REFER TO SPECIFICATION SECTION 20 0700 FOR WEIGHT SUPPORTING INSULATION REQUIREMENTS.

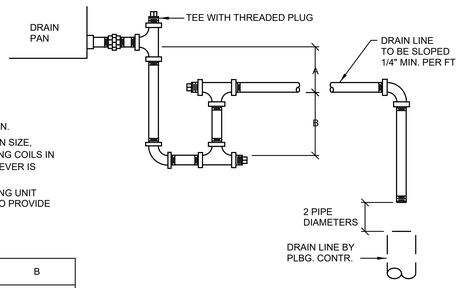
(SCALE: NONE)

INSULATED DUCT SUPPORTS | 9



(SCALE: NONE)

IN-LINE BOOSTER PUMP | 6



DETAIL KEYNOTES:

(1) FILL TRAP MANUALLY ON INITIAL START-UP.
(2) TRAP EACH COMPONENT DRAIN CONNECTION.
(3) PIPE SIZE SHALL BE DRAIN PAN CONNECTION SIZE, BUT NOT SMALLER THAN 1-1/2" FOR COOLING COILS IN AHUS OR 3/4" FOR FAN COIL UNITS, WHICHEVER IS LARGER.
(4) RAISE COIL SECTION OR ENTIRE AIR HANDLING UNIT WITH STRUCTURAL MEMBERS OR STANDS TO PROVIDE PROPER TRAP HEIGHT.

UNIT	A	B
AHU 2-1	7	3.5
AHU 2-2	6.5	3.25
FCU	3.0	1.5

(SCALE: NONE)

COOLING COIL CONDENSATE DRAIN TRAP PIPING | 3

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SUBMITTAL:		ISSUE DATE:
CONSTRUCTION DOCUMENTS		08/12/2025
REVISION	DESCRIPTION	DATE
1	ADDENDUM-01	08/25/2025

FSU BIO UNIT ONE TEACHING LABS

FLORIDA STATE UNIVERSITY,
89 CHIEFTAN WAY,
TALLAHASSEE, FL 32304

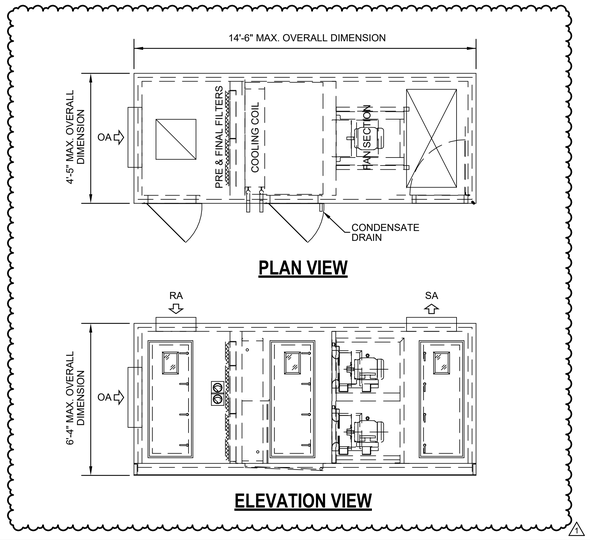
KEY PLAN

DRAWING TITLE:

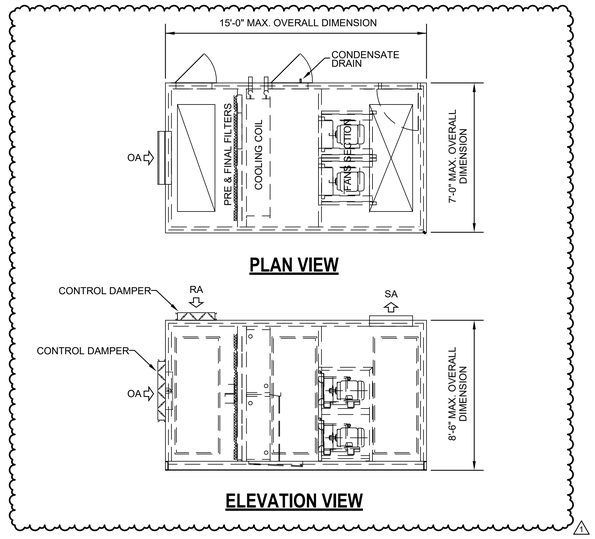
MECHANICAL DETAILS

PROJECT NO.: 23055-00 DRAWN BY: EJV
CHECKED BY: RDC

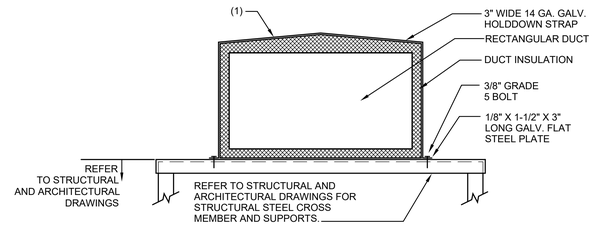
M800



AHU 2-2 COMPONENT DETAIL | 6



AHU 2-1 COMPONENT DETAIL | 4



RECTANGULAR DUCT

DETAIL NOTES:

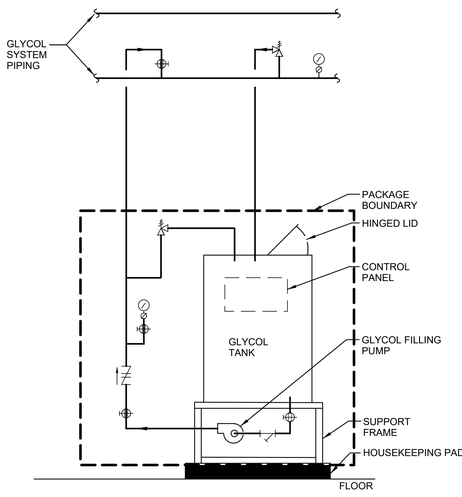
1. PAINT ALL FIELD WELDED GALVANIZED COMPONENTS WITH ZINC PAINT AFTER WELDING.

DETAIL KEYNOTES:

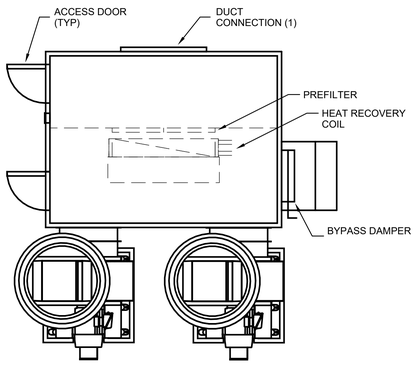
(1) PROVIDE SUFFICIENT PITCH AT TOP OF DUCT MAKING CENTER THE HIGHEST POINT TO PREVENT PUDDLING.

(SCALE: NONE)

ROOF DUCT SUPPORTS | 1



GLYCOL MAKEUP UNIT | 7



DETAIL NOTES:

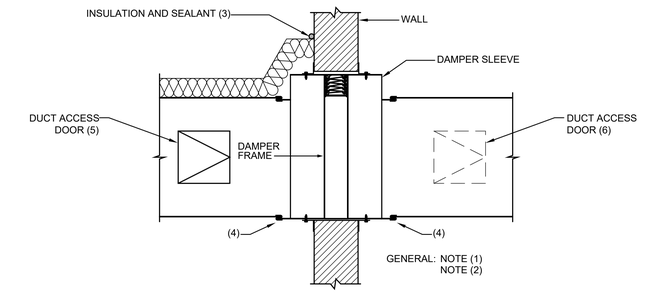
1. REFER TO PLANS TO DETERMINE CORRECT ORIENTATION OF ACCESS DOORS AND DUCT/PIPING CONNECTIONS.

DETAIL KEYNOTES:

(1) COORDINATE DUCT CONNECTION SIZES WITH FLOORPLANS.

(SCALE: NONE)

LEF 2-1,2 COMPONENT DETAIL | 5

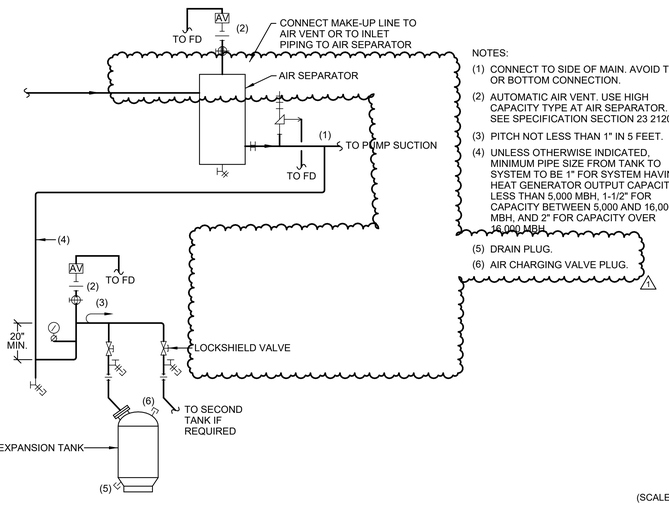


DETAIL KEYNOTES

(1) TWO SIDED ANGLE INSTALLATION SHOWN. ONE SIDED ANGLE INSTALLATION MAY BE USED. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR PARTICULAR INSTALLATION.
(2) GRILLE STYLE FIRE DAMPERS SHALL BE ACCESSIBLE FROM THE GRILLE. NO ACCESS DOOR REQUIRED IN DUCT.
(3) FOR DUCTWORK REQUIRING INSULATION, INSTALL INSULATION AND JACKET TO WALL (ALL SIDES) AND APPLY VAPOR BARRIER TAPE TO PREVENT CONDENSATION. TAPE SHALL BE COMPATIBLE WITH INSULATION JACKET AND WALL SURFACE. APPLY INSULATION OVER FIRE DAMPER AFTER INSPECTION HAS BEEN COMPLETED.
(4) DUCT TO SLEEVE CONNECTION PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND NFPA 90A.
(5) ACCESS DOOR SHALL BE LOCATED ON MOST ACCESSIBLE SIDE. INSTALL ACCESS DOOR AT SIDE OR BOTTOM OF DUCT FOR BEST ACCESS TO DAMPER. ACCESS DOOR SIZE SHALL BE PER SPECIFICATIONS.
(6) FOR ACCESS DOORS LESS THAN 14"x14" AS REQUIRED BY SPECIFICATION SECTION 23 3300, PROVIDE ACCESS DOOR ON BOTH SIDES OF RATED WALL.

(SCALE: NONE)

VERTICAL FIRE DAMPER INSTALLATION | 2

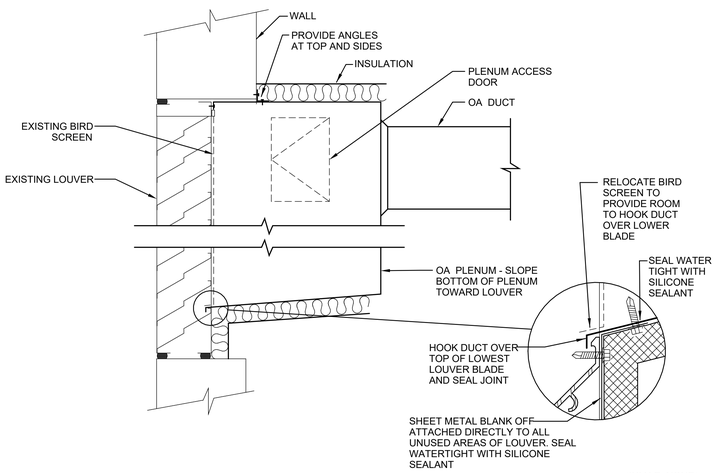


NOTES:

(1) CONNECT TO SIDE OF MAIN. AVOID TOP OR BOTTOM CONNECTION.
(2) AUTOMATIC AIR VENT. USE HIGH CAPACITY TYPE AT AIR SEPARATOR. SEE SPECIFICATION SECTION 23 2120.
(3) PITCH NOT LESS THAN 1" IN 5 FEET.
(4) UNLESS OTHERWISE INDICATED, MINIMUM PIPE SIZE FROM TANK TO SYSTEM TO BE 1" FOR SYSTEM HAVING HEAT GENERATOR OUTPUT CAPACITY LESS THAN 5,000 MBH, 1-1/2" FOR CAPACITY BETWEEN 5,000 AND 16,000 MBH, AND 2" FOR CAPACITY OVER 16,000 MBH.
(5) DRAIN PLUG.
(6) AIR CHARGING VALVE PLUG.

(SCALE: NONE)

EXPANSION TANK | 8



(SCALE: NONE)

OA PLENUM CONNECTION TO EXISTING LOUVER | 3

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KEY PLAN

DRAWING TITLE:

MECHANICAL DETAILS

PROJECT NO.: 23055-00 DRAWN BY: EJV
CHECKED BY: RDC

M801

SEMI-CUSTOM AIR HANDLING UNITS

MARK AHU	SERVICE	SUPPLY FAN: SUPPLY AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	MIN NUMBER OF FANS	TSP ("WG)	FAN TYPE	DRIVE	MIN WHEEL DIA. (IN)	OPERATING RPM	MOTOR: BHP	HP (2)	RPM	PH	VOLT	VFD HP RATING (2)	COOLING COIL AIR: TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	ENTERING DB TEMP (°F)	ENTERING WB TEMP (°F)	LEAVING DB TEMP (°F)	LEAVING WB TEMP (°F)	MAX FACE VELOCITY	MAX AIR PD (IN WG)	WATER: MAX WATER PD (FT)	GPM	ENTERING WATER TEMP (°F)	LEAVING WATER TEMP (°F)	PRE-FILTERS	FINAL FILTERS	MAXIMUM INLET/OUTLET SOUND POWER LEVELS: 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	REMARKS
2-1	LABS	16100	6600 (3)	4	6.0	PLENUM	DIRECT	18	2395	5.5	10	3600	3	460	40	853	590	84	68	50	50	450	1.2	12	107	42	58	F-2-1	F-2-2	80/88	80/86	93/93	94/94	85/83	85/83	83/80	80/76	(1)
2-2	OFFICES	5000	1150	2	5.5	PLENUM	DIRECT	16	2644	3.3	7.5	3600	3	460	15	237	167	80	66	50	50	450	0.5	17	30	42	58	F-2-3	F-2-4	87/83	79/85	88/91	88/93	80/83	79/81	78/82	70/75	(1)

NOTES:
(1) BASIS OF DESIGN: ENERGY LABS
(2) SCHEDULED AIRFLOW IS COMBINED TOTAL FOR ALL FANS. MULTIPLE FANS SHALL BE DRIVEN BY SINGLE VFD.
(3) AIRFLOW SCHEDULED REFLECTS SPARE CAPACITY. REFER TO CONTROLS DIAGRAM FOR OUTSIDE AIRFLOW SETPOINT.

RETURN FANS

MARK RF	LOCATION	SERVICE	CFM	RPM	ESP (IN WG)	FAN: TYPE	FAN: DRIVE	MAXIMUM INLET SOUND POWER LEVELS: 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	DAMPER	SYSTEM INTERLOCK	MOTOR: HP	PH	VOLT	REMARKS
2-1	0241 MECHANICAL	AHU 2-2	3800	1770	1.75	INLINE	DIRECT	73	73	79	75	75	76	74	69	NONE	AHU 2-2	2	3	460	(1)

NOTES:
(1) BASIS OF DESIGN: GREENHECK QEID-16-100

GENERAL EXHAUST FAN

MARK GEF	TYPE	CFM	RPM	TSP (IN WG)	DRIVE	MAXIMUM INLET SOUND POWER LEVELS: 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	DAMPER	SYSTEM INTERLOCK	MOTOR: HP	PH	VOLT	REMARKS
2-1	DOWNBLAST	750	1704	1.5	EC	80	82	75	71	71	68	65	63	BACKDRAFT	AHU-2-2	1/2	1	120	(1), (2)

NOTES:
(1) ASSEMBLY AND STRUCTURAL CONNECTION SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA TO MEET FLORIDA BUILDING CODE REQUIREMENTS TO WITHSTAND SUSTAINED FORCE GENERATED BY APPLICABLE WIND SPEED.
(2) BASIS OF DESIGN: GREENHECK G-140HP. PROVIDE FAN WITH INTEGRAL SPEED CONTROLLER FOR BALANCING.

LABORATORY EXHAUST FANS

MARK LEF	LOCATION	SERVICE	MAXIMUM BUILDING FLOW (CFM)	TSP ("WG)	FAN: TYPE	FAN: DRIVE	MIN. DIA. (IN)	MAXIMUM RPM	FAN CLASS	FAN ROTATION AND DISCHARGE	ISOLATION DAMPER	INTERLOCK	MOTOR: HP	RPM	VOLT	PH	VFD	MAXIMUM INLET SOUND POWER LEVELS: 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	REMARKS
2-1	ROOF	LAB	6000	6	BI	DIRECT	-	1800	II	CW BAU	Y	AHU-2-1	20	1800	460	3	Y	98	102	106	94	93	92	86	77	(1) (2)
2-2	ROOF	LAB	6000	6	BI	DIRECT	-	1800	II	CW BAU	Y	AHU-2-1	20	1800	460	3	Y	98	102	106	94	93	92	86	77	(1) (2)

NOTES:
(1) BASIS OF DESIGN: STROBIC
(2) ASSEMBLY AND STRUCTURAL CONNECTION SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA TO MEET FLORIDA BUILDING CODE REQUIREMENTS TO WITHSTAND SUSTAINED FORCE GENERATED BY APPLICABLE WIND SPEED.

FILTERS AND FILTER HOUSINGS

MARK F	SYSTEM	LOCATION	TYPE	CFM	MIN. FACE AREA (FT²)	PRESS. DROP ("WG): INITIAL	PRESS. DROP ("WG): FINAL	PD FOR FAN TSP AND AIR BALANCE	MIN. EFF. (%)	MEDIA LENGTH (IN)	REMARKS
2-1	AHU 2-1	PREFILTER	PLEATED	16,100	44	0.28	0.8	0.8	30	2	-
2-2	AHU 2-1	FINAL FILTER	CART	16,100	44	0.57	1.5	1.5	95	4	-
2-3	AHU 2-2	PREFILTER	PLEATED	5,000	20	0.28	0.8	0.8	30	2	-
2-4	AHU 2-2	FINAL FILTER	CART	5,000	20	0.57	1.5	1.5	95	4	-
2-5	ERC 2-1	PREFILTER	PLEATED	6,600	17.7	0.28	0.8	0.8	30	2	-
2-6	ERC 2-2	PREFILTER	PLEATED	6,000	13.3	0.28	0.8	0.8	30	2	-

ENERGY RECOVERY COILS

MARK ERC	SYSTEM	NO OF COILS	TOTAL CAP.: MBH	TOTAL CAP.: AIR FLOW (CFM)	NOMINAL SIZE (PER COIL): FACE AREA (F²)	ROWS	FINS PER INCH	DIM (IN): H	DIM (IN): L	AIR SIDE (PER COIL) SUMMER PERFORMANCE: EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	MAX. PD (IN WG)	WATER SIDE (TOTAL): GPM	FLUID	MAX. PD (FT)	EWT (°F)	PRE-FILTERS	REMARKS
2-1	AHU 2-1	1	75	6,600	15	6	12	52.5	40	96	84	85	81	1	29.5	20% ETHYLENE GLYCOL	10	82	F-2-5	
2-2	LEF 2-1,2	1	75	6,000	15	6	12	40.5	60	75	75	86	75	1	29.5	20% ETHYLENE GLYCOL	20	88	F-2-6	

SOUND ATTENUATING DEVICES

MARK SAD	LOCATION	TYPE	SYSTEM	TOTAL CAPACITY (CFM)	MAX. VEL. (FPM)	MAX. PD (2) ("WG)	MINIMUM DYNAMIC INSERTION LOSS / MAXIMUM SELF GENERATED POWER LEVELS: 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	OVERALL DIMENSION (IN): W or DIA.	H	L (INLET x OUTLET)	REMARKS
2-1-1	MECH 0242	ELBOW MEDIA FILLED	AHU 2-1 SUPPLY	14,510	3,350	0.65	8	11	16	30	31	31	26	22	52	12	72x72	(1) (3)
2-1-2	MECH 0242	ELBOW MEDIA FILLED	AHU 2-1 RETURN	4,985	1,220	0.30	9	15	23	34	40	38	33	26	42	14	60x60	(1) (3)
2-1-3	MECH 0242	RECTANGULAR MEDIA FILLED	AHU 2-1 RETURN	4,025	1,150	0.15	46	50	63	65	47	51	50	47	36	14	120	(1)
2-1-4	MECH 0242	RECTANGULAR MEDIA FILLED	AHU 2-1 SUPPLY	7,355	2,410	0.20	2	3	5	9	11	12	7	4	22	20	36	(1)
2-2-1	MECH 0241	RECTANGULAR MEDIA FILLED	AHU 2-2 SUPPLY	3,890	1,375	0.75	66	62	72	61	43	54	56	47	34	12	120	(1)
2-2-2	MECH 0241	RECTANGULAR MEDIA FILLED	AHU 2-2 RETURN	3,330	1,145	0.15	50	61	69	62	42	52	56	48	30	14	72	(1)
2-3	IT 2027	RECTANGULAR PACKLESS	LEF-2-1,2 EXHAUST	5,125	1,465	0.75	8	15	21	34	29	21	15	13	36	14	60	(1)

NOTES:
(1) BASIS OF DESIGN: PRICE
(2) RATED PRESSURE DROP FOR EACH SOUND ATTENUATING DEVICE SHALL INCLUDE SYSTEM EFFECT DUE TO DUCT AND FITTINGS ON UPSTREAM AND DOWNSTREAM SIDES OF DEVICE.
(3) MAX. LENGTH DIMENSIONS FOR ELBOW ATTENUATORS ARE DESIGNATED AS INLET OUTSIDE LENGTH (L1) X OUTLET OUTSIDE LENGTH (L2)

ENERGY RECOVERY PUMP

MARK ERP	LOCATION	SYSTEM	TYPE	CAP. (GPM)	DISCH HEAD (FT)	MIN. EFF (%)	MAX NPSH (FT)	SIZE: DISCH (IN)	SIZE: SUCT (IN)	MOTOR: HP	RPM	VOLT	PH	VFD	REMARKS
2-1	0241 MECHANICAL	GW	VERTICAL INLINE	30	45	45	28.5	2	2	0.75	4900	240	60	ECM	(1)

NOTES:
(1) BASIS OF DESIGN: TACO

GLYCOL MAKEUP UNIT

MARK GMU	SYSTEM	TANK VOLUME (GAL)	DIMENSIONS: DIA. (IN)	HEIGHT (IN)	SYSTEM CONN. (IN)	PUMP: MOTOR (HP)	VOLTAGE (V)	PHASE	REMARKS BASIS OF DESIGN:
2-1	ENERGY RECOVERY	30	25	55	1/2	1/3	120	1	JOHN WOOD JWGP-53-030

SUPPLY AIR TERMINAL DEVICES

MARK SAT	SYSTEM	TYPE	MAX AIRFLOW (CFM)	MIN. AIRFLOW: OCCUPIED (CFM)	UNOCC. (CFM)	MAX UNIT PD ("WG)	MIN INLET SP ("WG)	MIN INLET SIZE (IN)	HEATING COIL (1): REHEAT AIRFLOW (CFM)	CAPACITY (MBH)	GPM	EAT (°F)	LAT (°F)	REMARKS
2-1	2-2	VAV	260	135	100	0.5	1.5	6"	135	4.4	0.4	55	85	
2-2	2-2	VAV	180	100	100	0.5	1.5	6"	100	3.3	0.3	55	85	
2-3	2-2	VAV	190	145	100	0.5	1.5	6"	145	4.7	0.5	55	85	
2-4	2-2	VAV	610	400	250	0.5	1.5	8"	400	13.0	1.3	55	85	
2-5	2-2	VAV	705	355	215	0.5	1.5	8"	355	11.6	1.2	55	85	
2-6	2-2	VAV	100	100	50	0.5	1.5	6"	100	3.3	0.3	55	85	
2-7	2-2	VAV	430	300	165	0.5	1.5	8"	300	9.8	1.0	55	85	
2-8	2-2	VAV	140	80	50	0.5	1.5	6"	80	2.6	0.3	55	85	
2-9	2-2	VAV	140	80	50	0.5	1.5	6"	80	2.6	0.3	55	85	
2-10	2-2	VAV	555	420	170	0.5	1.5	8"	420	13.7	1.4	55	85	
2-11	2-2	VAV	100	100	100	0.5	1.5	6"	100	3.3	0.3	55	85	
2-12	2-2	VAV	100	100	100	0.5	1.5	6"	100	3.3	0.3	55	85	
2-13	2-2	VAV	100	100	50	0.5	1.5	6"	100	3.3	0.3	55	85	
2-14	2-2	VAV	80	80	80	0.5	1.5	6"	80	2.6	0.3	55	85	
2-15	2-2	VAV	80	80	80	0.5	1.5	6"	80	2.6	0.3	55	85	
2-16	2-1	VAV	310	220	150	0.5	1.5	6"	220	7.2	0.7	55	85	
2-17	2-1	VAV	1190	1100	735	0.5	1.5	12"	1100	35.8	3.6	55	85	
2-18	2-1	VAV	1285	1225	820	0.5	1.5	12"	1225	39.9	4.0	55	85	
2-19	2-1	VAV	320	230	155	0.5	1.5	6"	230	7.5	0.7	55	85	
2-20	2-1	VAV	1330	1285	860	0.5	1.5	12"	1285	41.8	4.2	55	85	
2-21	2-1	VAV	585	435	290	0.5	1.5	8"	435	14.2	1.4	55	85	
2-22	2-1	VAV	1245	1170	780	0.5	1.5	12"	1170	38.1	3.8	55	85	
2-23	2-1	VAV	1555	1355	840	0.5	1.5	12"	1355	44.1	4.4	55	85	
2-24	2-1	VAV	1465	1235	825	0.5	1.5	12"	1235	40.2	4.0	55	85	
2-25	2-1	VAV	700	700	700	0.5	1.5	8"	700	22.8	2.3	55	85	

NOTES:
(1) PROVIDE STAND-ALONE DUCT-MOUNTED REHEAT COIL WHERE REQUIRED TO MEET SCHEDULED PERFORMANCE. REHEAT COIL FACE AREA SHALL BE FOR MAXIMUM AIRFLOW

VARIABLE VOLUME LABORATORY AIR TERMINALS

SUPPLY AIR TERMINALS: MARK SAT	MAX. AIRFLOW (CFM)	MIN. AIRFLOW: OCC. (CFM)	UNOCC. (CFM)	MIN. INLET SIZE (IN)	REHEAT AIRFLOW (CFM)	CAP. (MBH)	GPM	EAT (°F)	LAT (°F)	GENERAL EXHAUST AIR TERMINALS: MARK GET	MAX. AIRFLOW (CFM)	MIN. AIRFLOW: OCC. (CFM)	UNOCC. (CFM)	MIN. INLET SIZE (IN)	NET TRANSFER AIR: PRESSURIZATION (+ 0 -)	NET SPACE OFFSET (CFM)	REMARKS
2-26	625	465	310	SINGLE 8	465	15.1	1.5	55	85	2-1	725	565	410	SINGLE 8	-	100	(1)
2-27	1745	1335	1100	SINGLE 14	1335	43.5	4.3	55	85	2-2	885	475	240	SINGLE 10	-	100	(1)
										2-3	960	960	960	SINGLE 10			
2-28	605	450	300	SINGLE 8	450	14.6	1.5	55	85	2-4	705	550	400	SINGLE 8	-	100	(1)
2-29	1710	1455	1455	SINGLE 14	1455	47.4	4.7	55	85	2-5	575	320	240	SINGLE 8	-	340	(1)
										2-6	1475	1475	1475	SINGLE 12			

NOTES:
(1) BASIS OF DESIGN: SIEMENS LGS/LGE

FAN COIL UNITS

MARK FCU	LOCATION	TYPE	FAN CHARACTERISTICS: NOM. CFM	ESP (IN. WG)	COOLING COIL: TOTAL (BTUH)	SENS. (BTUH)	EAT DB (°F)	EAT WB (°F)	EWT (°F)	FLOW GPM	PD (FT)	MAX FACE VEL. (FPM)	ELECTRICAL MOTOR: TYPE	HP	VOLT	PH	SPEED CONTROL	REMARKS
2-1	IT ROOM	HORIZONTAL SUSPENDED	270	0.25	8336	6691	75	63	42	2	2	225	CONSTANT TORQUE	1/8	277	1	ECM	(1)

(1) BASIS OF DESIGN: WILLIAMS LH003W2R406R000

EXPANSION TANKS

MARK ET	LOCATION	SYSTEM	TYPE	MIN. TANK VOLUME (GAL)	MIN. ACCEP. VOLUME (GAL)	DIMENSIONS: DIA. (IN)	LENGTH (IN)	SYSTEM CONN. (IN)	AIR CHARGE PRESSURE (PSIG)	REMARKS
2-1	0242 MECHANICAL	ERW	REPLACEABLE BLADDER	4	2.5	14	15	3/4	10	(1)

NOTES:
(1) BASIS OF DESIGN: TACO CBX

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SUBMITTAL: CONSTRUCTION DOCUMENTS — ISSUE DATE: 08/12/2025

REVISION	DESCRIPTION	DATE
1	ADDENDUM-01	08/25/2025

FSU BIO UNIT ONE TEACHING LABS

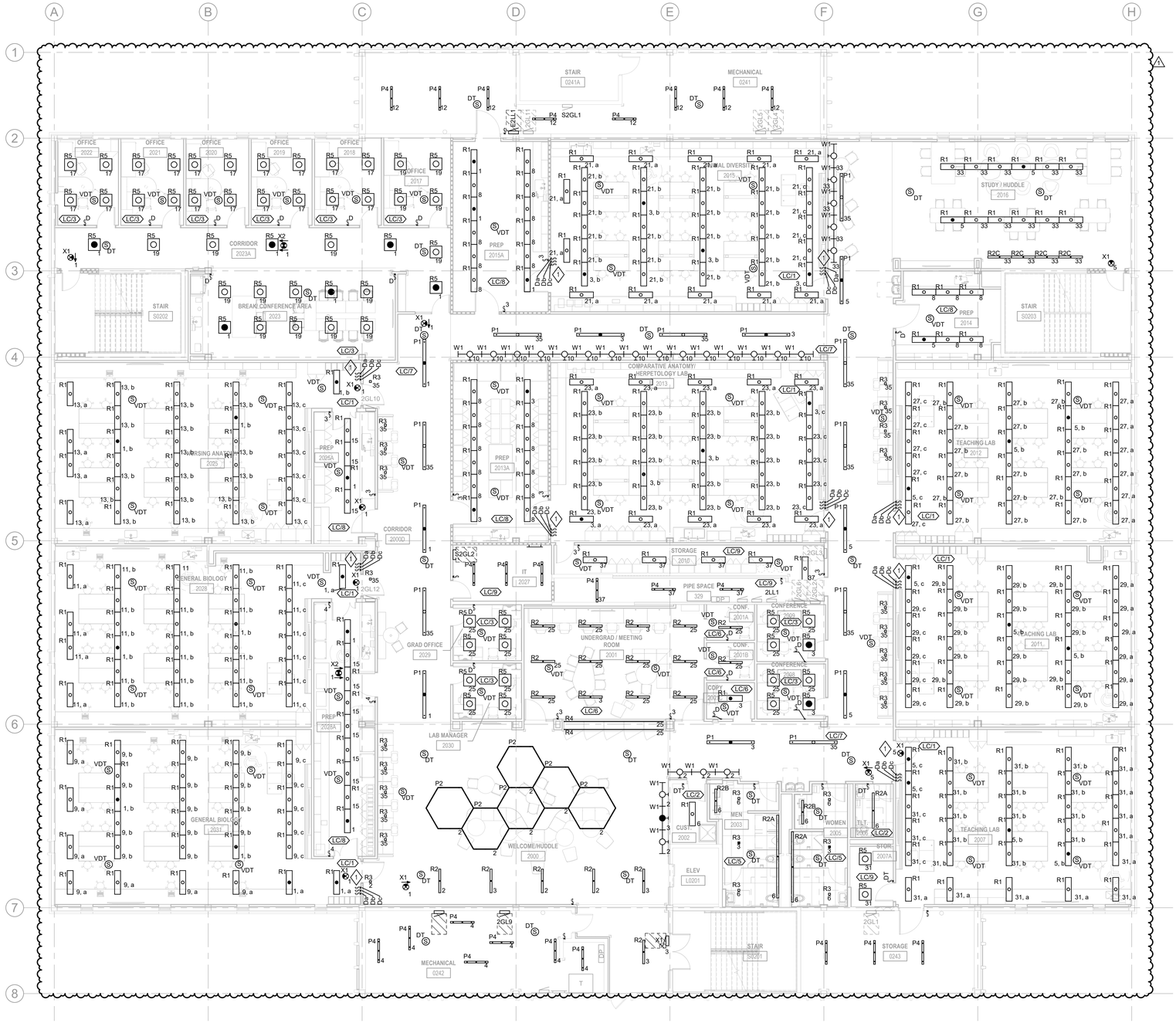
FLORIDA STATE UNIVERSITY,
89 CHIEFTAN WAY,
TALLAHASSEE, FL 32304

KEY PLAN

DRAWING TITLE:
MECHANICAL SCHEDULES

PROJECT NO.: 23055-00 DRAWN BY: EJV
CHECKED BY: RDC

M900



1 **LEVEL 2 LIGHTING PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. REFER TO SHEET E900 FOR LUMINAIRE SCHEDULE.
2. COORDINATE ALL DEVICE AND LIGHT LOCATIONS WITH ARCHITECTURAL DRAWINGS AND DIAGRAMS PRIOR TO ROUGH-IN.
3. PROVIDE NEW NAME ENGRAVED COVERPLATES INDICATING SUPPLY PANEL AND CIRCUIT NUMBER(S) FOR ALL ELECTRICAL DEVICES IN THIS PROJECT. ENGRAVING SHALL BE RED FOR EMERGENCY AND BLACK FOR NORMAL CIRCUITS.
4. NORMAL POWER LIGHTING CIRCUITS SHALL BE SUPPLIED FROM PANEL 2LL1.
5. EMERGENCY POWER LIGHTING CIRCUITS SHALL BE SUPPLIED FROM PANEL E2LL1.
6. LIGHTING CONTROL "LC/X" TAGS ON PLANS INDICATE REQUIRED SYSTEM COMPONENTS FOR INTERIOR SPACES. REFER TO DETAILS FOR MORE INFORMATION.
7. EMERGENCY LIGHTS SHALL BE SWITCHED WITH NORMAL LIGHTS IN ALL AREAS UNLESS NOTED OTHERWISE. PROVIDE UL 924 EMERGENCY TRANSFER DEVICE TO FORCE AND HOLD LIGHTS ON UPON LOSS OF POWER.
8. EXIT SIGNS SHALL BE UNSWITCHED FOR CONTINUOUS OPERATION. PULL UNSWITCHED HOT CONDUCTOR FROM LOCAL LIGHTING CIRCUIT TO EXIT SIGNS.
9. INITIATION OF FIRE ALARM SYSTEM SHALL OVERRIDE OCCUPANCY SENSOR(S) CONTROLLING LIGHTS IN DESIGNATED EGRESS PATHWAYS AND FORCE ALL LIGHTS TO ON.

SHEET KEY NOTES

1. COORDINATE TEACHING LAB LIGHTING ZONES WITH FSU AV TEAM.

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FSU BIO UNIT ONE TEACHING LABS

FLORIDA STATE UNIVERSITY,
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KEY PLAN

DRAWING TITLE:

LEVEL 2 ELECTRICAL LIGHTING PLAN

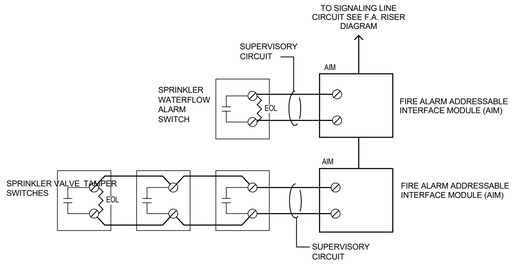
PROJECT NO.: 23055-00 DRAWN BY: CJYS
CHECKED BY: CRT

E102

		Control Unit Annunciation							Notification							Required for Fire Safety Control									Supplementary	
		System Outputs																								
System Inputs	Number Identifier	Actuate Common Alarm Signal Indicator	Actuate Audible Alarm Signal	Actuate Common Supervisory Signal	Actuate Audible Supervisory Signal	Actuate Common Trouble Signal Indicator	Actuate Audible Trouble Signal	Actuate Appropriate Location Indicator	Actuate All Audible Evacuation Signals	Actuate All Visible Evacuation Signals	Outdoor Audible and/or Visual Device	Display/Print Change of Status	Transmit Alarm Signal to Supervising Station	Transmit Supervisory Signal to Supervising Sta.	Transmit Trouble Signal to Supervising Station	Release Magnetically Held Smoke Doors	Unlock Security Doors	Release Elevator Hoistway Vents	Elevator Shunt Trip	Recall Elevators To Primary Recall Floor	Recall Elevators to Alternate Recall Floor	Elevator Fire Hat Flash	Fan Shutdown	Damper Shutdown	Remotely Display Status	Number Identifier
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y	
Manual Pull Station	1	X	X					X	X	X		X	X			X	X								X	1
	2																									2
Smoke Detector General	3	X	X					X	X	X		X	X			X	X								X	3
Smoke Detector at Door Hold Opens	4	X	X					X	X	X		X	X			X	X								X	4
Smoke Detector Elev. Lobby Primary Floor	5	X	X					X	X	X		X	X			X	X				X					5
Smoke Detector Elev. Lobby All other Floors	6	X	X					X	X	X		X	X			X	X			X						6
Smoke Detector in Elev. Machine Room	7	X	X					X	X	X		X	X			X	X					X				7
Smoke Detector in Hoistway	8	X	X					X	X	X		X	X			X	X					X				8
	9																									9
Heat Detector General	10	X	X					X	X	X		X	X			X	X								X	10
Heat Detector in Elev. Machine Room	11	X	X					X	X	X		X	X			X	X		X							11
Heat Detector in Hoistway	12	X	X					X	X	X		X	X			X	X		X							12
	13																									13
Duct Mounted Smoke Detectors At Fire/Smoke Dampers	14			X	X			X				X		X										X	X	14
AHU/RF Duct Mounted Smoke Detector	15			X	X			X				X		X									X		X	15
	16																									16
Post Indicator Valve Switch	17			X	X			X				X		X											X	17
Sprinkler Main Waterflow	18	X	X					X	X	X	X	X	X			X	X								X	18
Sprinkler Atrium Waterflow	19	X	X					X	X	X		X	X			X	X								X	19
Sprinkler Tamper Switch	20			X	X			X				X		X											X	20
	21																									21
Fire Alarm AC Power Failure	22					X	X					X			X	X		X							X	22
Fire Alarm Low Battery	23					X	X					X			X										X	23
Open Circuit	24					X	X					X			X										X	24
Ground Fault	25					X	X					X			X										X	25
	26																									26
Elevator Shunt Trip Monitor	27			X	X							X		X												27
	28																									28

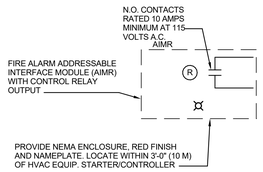
2 FIRE ALARM MATRIX

SCALE: 12" = 1'-0"



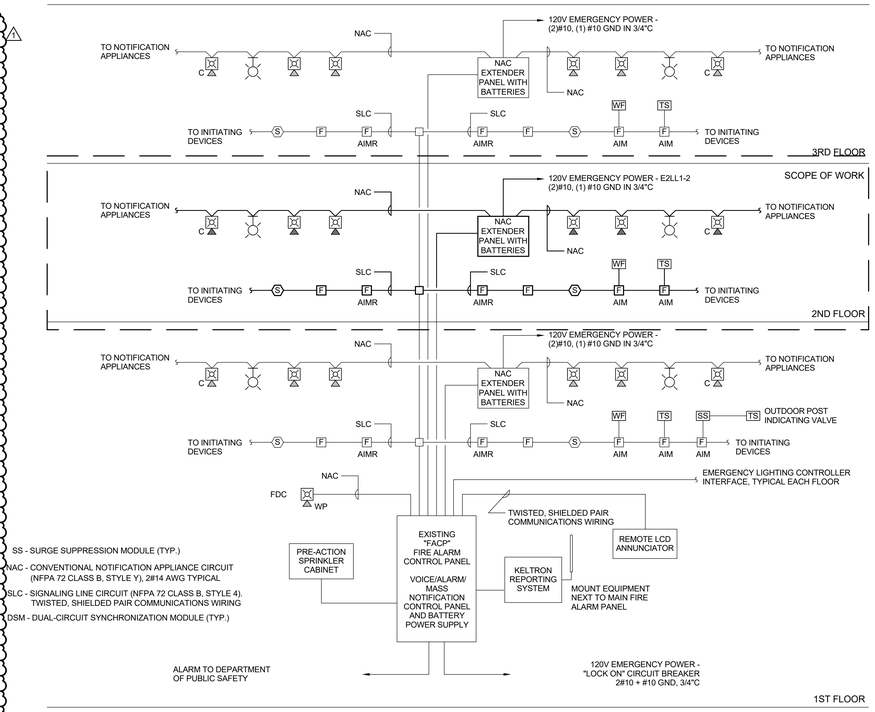
3 SPRINKLER SYSTEM SUPERVISORY CONNECTIONS

SCALE: 12" = 1'-0"



4 F.A. INTERFACE RELAY MODULE

SCALE: 12" = 1'-0"



1 FIRE ALARM RISER DIAGRAM

SCALE: 12" = 1'-0"

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FSU BIO UNIT ONE TEACHING LABS

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KEY PLAN

DRAWING TITLE:

FIRE ALARM RISER DIAGRAM, DETAILS, AND MATRIX

PROJECT NO.: 23055-00	DRAWN BY: CJYS
	CHECKED BY: CRT

E703

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL NO.	LAMP					DRIVER		MOUNTING	COMMENTS
				TYPE	WATTS	COLOR TEMPERATURE	CRI	LUMENS	TYPE	VOLTAGE		
P1	8'L x 6" W LINEAR; SATIN WHITE OPTICS; MATTE WHITE FINISH; 0-10V DIMMING; MVOLT	LITHONIA LIGHTING	LSIX SERIES	LED	45 W	40K	80	6000	INTEGRAL	120 V	PENDANT AT 8' A.F.F.	
P2	4'L LINEAR; 2" APERTURE; SINGLE-SIDED ILLUMINATION	ALW LIGHTING	GO FIGURE RPD07 SERIES	LED	5 W	40K	90	500	INTEGRAL	120 V	PENDANT AT 8' A.F.F.	
P4	4'L LINEAR; FLAT DIFFUSE LENS; WHITE FINISH; STANDARD EFFICIENCY; 0-10V DIMMING	LITHONIA LIGHTING	CLX SERIES	LED	32 W	40K	80	4000	INTEGRAL	120 V	PENDANT	
R1	4'L x 1'W EDGE-LIT FLAT PANEL; SATIN WHITE LENS; 0-10V DIMMING; MVOLT;	LITHONIA LIGHTING	EPANL LED SERIES	LED	40 W	40K	80	4000	INTEGRAL	120 V	RECESSED	
R2	4'L x 4"W LINEAR FLUSH LENS; HIGH-EFFICIENCY LAMBERTIAN OPTIC; HIGH PERFORMANCE LED; UNV VOLTAGE; 0-10V DIMMING; MATTE WHITE FINISH; T-BAR GRID MOUNTING	LUMENWERX	VIA 4 LED SERIES	LED	16 W	40K	80	500	INTEGRAL	120 V	RECESSED	WATTAGE AND LUMEN OUTPUT FOR FIXTURE IS PER FOOT
R2A	4'W LINEAR FLUSH LENS; HIGH-EFFICIENCY LAMBERTIAN OPTIC; HIGH PERFORMANCE LED; UNV VOLTAGE; 0-10V DIMMING; MATTE WHITE FINISH; PROVIDE CONTINUOUS ROW WHERE LENGTH EXCEEDS 4'; T-BAR GRID MOUNTING	LUMENWERX	VIA 4 LED SERIES	LED	16 W	40K	80	500	INTEGRAL	120 V	RECESSED	WATTAGE AND LUMEN OUTPUT FOR FIXTURE IS PER FOOT
R2B	4'L x 4"W LINEAR FLUSH LENS; HIGH-EFFICIENCY LAMBERTIAN OPTIC; HIGH PERFORMANCE LED; UNV VOLTAGE; 0-10V DIMMING; MATTE WHITE FINISH; VISIBLE FLANGE FOR MOUNTING IN DRYWALL CEILING	LUMENWERX	VIA 4 LED SERIES	LED	16 W	40K	80	500	INTEGRAL	120 V	RECESSED	WATTAGE AND LUMEN OUTPUT FOR FIXTURE IS PER FOOT
R2C	4'L x 4"W LINEAR FLUSH LENS; WALL WASH REFRACTIVE OPTIC; HIGH PERFORMANCE LED; UNV VOLTAGE; 0-10V DIMMING; MATTE WHITE FINISH; T-BAR GRID MOUNTING	LUMENWERX	VIA 4 LED SERIES	LED	16 W	40K	80	500	INTEGRAL	120 V	RECESSED	
R3	4" SQUARE DOWNLIGHT; CLEAR TRIM; SEMI-SPECULAR FINISH; 0-10V DIMMING; MVOLT	LITHONIA LIGHTING	LDN4SQ SERIES	LED	25 W	40K	80	2000	INTEGRAL	120 V	RECESSED	
R4	STATIC WHITE STANDARD LED STRIP; DRY RATED; LATO RECESSED HOUSING WITH A BLACK FINISH; SST MOUNTING; DIFFUSED LENS	QT LIGHTING	SD-SW SERIES	LED	8 W	40K	97	593	INTEGRAL	120 V	RECESSED	LUMEN OUTPUT FOR FIXTURE IS PER FOOT
R5	2' X 2' EDGE-LIT FLAT PANEL; SATIN WHITE LENS; 0-10V DIMMING; MVOLT	LITHONIA LIGHTING	EPANL LED SERIES	LED	31 W	40K	80	3364	INTEGRAL	120 V	RECESSED	
W1	4'L SINGLE WALL MOUNT ADJUSTABLE LED CANTILIEVERED FIXTURE, INSTALLED IN CONTINUOUS RUN	DELRAY LIGHTING	STICK SLT9 BARE SERIES	LED	28 W	40K	90	2886	INTEGRAL	120 V	WALL, SURFACE AT 8' A.F.F.	
X1	SINGLE FACE; WHITE DIE-CAST ALUMINUM HOUSING; RED LETTERS	LITHONIA LIGHTING	LQC SERIES	LED	1 W				INTEGRAL	120 V	RECESSED	
X2	DOUBLE FACE; WHITE DIE-CAST ALUMINUM HOUSING; RED LETTERS	LITHONIA LIGHTING	LQC SERIES	LED	1 W				INTEGRAL	120 V	RECESSED	

EQUIPMENT SCHEDULE

EQUIPMENT				MOTOR/EQUIPMENT DATA					CIRCUIT INFORMATION			CONDUIT AND WIRE REQUIREMENTS					CONTROLLER/DISCONNECT INFORMATION			
																	PROVISION OF CONTROLS/CONTROLLER		PROVISION OF DISCONNECTING MEANS	
EQ. TAG	EQ. ID	DESCRIPTION	LEVEL	VOLTAGE	PHASE	APPARENT LOAD (kVA)	FLA (A)	MCA (A)	PANEL	CIRCUIT #	CB SIZE	PARALLEL SET	# OF CONDUCTORS	CONDUCTOR SIZE	GROUND CONDUCTOR SIZE	CONDUIT SIZE	DIV 26	OTHER DIVISION	BY DIV 26	OTHER DIVISION
AHU	2-2	AIR HANDLING UNIT	LEVEL 2	480 V	3	18.30 kVA	22 A	28 A	S3MH1	50,52,54	50 A	1 SET	3	#6	#10	1" C	-	VFD BY DIV. 23	-	DISCONNECT WITH VFD BY DIV. 23
RF	2-1	RETURN FAN	LEVEL 2	480 V	3	2.83 kVA	3 A	4 A	S3MH1	43,45,47	15 A	1 SET	3	#12	#12 G	3/4" C	-	VFD BY DIV. 23	-	DISCONNECT WITH VFD BY DIV. 23
GEF	2-1	GENERAL EXHAUST FAN	ROOF	120 V	1	1.18 kVA	10 A	12 A	S3ML2	6	15 A	1 SET	2	#12	#12 G	3/4" C	-	CONTROLS BY DIV. 23	20A MOTOR-RATED TOGGLE SWITCH	-
LEF	2-2	LAB EXHAUST FAN	ROOF	480 V	3	22.45 kVA	27 A	34 A	S3MH1	31,33,35	60 A	1 SET	3	#8	#10 G	3/4" C	-	CONTROLS BY DIV. 23	100A/3P/NF/N3R	-
LEF	2-1	LAB EXHAUST FAN	ROOF	480 V	3	22.45 kVA	27 A	34 A	S3MH1	25,27,29	60 A	1 SET	3	#4	#10 G	3/4" C	-	VFD BY DIV. 23	100A/3P/NF/N3R	-
AHU	2-1	PACKAGED AIR HANDLING UNIT	LEVEL 2	480 V	3	43.23 kVA	52 A	65 A	S3MH1	44,46,48	110 A	1 SET	3	#1	#6 G	1" C	-	VFD BY DIV. 23	-	DISCONNECT WITH VFD BY DIV. 23
ERP	2-1	ENERGY RECOVERY PUMP	LEVEL 2	208 V	2	1.44 kVA	5 A	6 A	S3ML2	35,37	15 A	1 SET	2	#12	#12 G	3/4" C	-	CONTROLS BY DIV. 23	-	-
FCU	2-1	FAN COIL UNIT	LEVEL 2	120 V	1	0.58 kVA	4 A	5 A	S3ML2	16	20 A	1 SET	2	#12	#12 G	3/4" C	-	CONTROLS BY DIV. 23	-	DISCONNECT SWITCH FURNISHED WITH UNIT UNDER DIVISION 23
GMU	1	GLYCOL MAKE-UP	LEVEL 2	120 V	1	0.86 kVA	7 A	9 A	S3ML2	18	15 A	1 SET	2	#12	#12 G	3/4" C	-	CONTROLS BY DIV. 23	-	DISCONNECT SWITCH FURNISHED WITH UNIT UNDER DIVISION 23

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KEY PLAN

DRAWING TITLE:

ELECTRICAL SCHEDULES

PROJECT NO.: 23055-00 DRAWN BY: CJYS
CHECKED BY: CRT

E900